

**MRS-BLM UNIT 28
MUNITIONS AND EXPLOSIVES OF
CONCERN
REMEDIAL ACTION REPORT
FORMER FORT ORD, CALIFORNIA**

**August 2018
Draft Final**

Prepared For:



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Acronyms and Abbreviations

ARARs	applicable or relevant and appropriate requirements
Army	U.S. Department of the Army
ASCII	American Standard Code for Information Interchange
BLM	Bureau of Land Management
BO	Biological Opinion
BRAC	Base Realignment and Closure
CAR	corrective action request
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
cm	centimeter
CMC	central maritime chaparral
CQCSM	Contractor Quality Control Systems Manager
DDESB	Department of Defense Explosives Safety Board
DGM	Digital Geophysical Mapping
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
FS	feasibility study
FWV	Field Work Variance
GPS	global positioning system
HMP	Habitat Management Plan
KEMRON	KEMRON Environmental Services
LUC	Land Use Control
MC	munitions constituents
MD	munitions debris
MDAS	material documented as safe
MDEH	material documented as an explosive hazard

Acronyms and Abbreviations (continued)

MEC	munitions and explosives of concern
mm	millimeter
MMRP	Military Munitions Response Program
MOUT	Military Operations in Urban Terrain
MPPEH	Material Potentially Presenting an Explosive Hazard
MQO	measurement quality objective
MR	munitions response
MRA	munitions response area
MRS	munitions response site
OESS	Ordnance and Explosives Safety Specialist
QA	quality assurance
QC	quality control
RAO	remedial action objective
RAR	Remedial Action Report
RD/RA	Remedial Design/Remedial Action
RI	remedial investigation
ROD	Record of Decision
RRD	range-related debris
RTK	real-time kinematic
SSWP	Site-Specific Work Plan
SUXOS	Senior Unexploded Ordnance Supervisor
TIP	Technical Information Paper
TM	Technical Memorandum
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UXO	unexploded ordnance
UXOQCS	Unexploded Ordnance Quality Control Specialist
WERS	Worldwide Environmental Remediation Services

Definitions

Construction Support: Assistance provided by DoD explosive ordnance disposal (EOD) or Unexploded Ordnance (UXO)-qualified personnel and/or by personnel trained and qualified for operations involving chemical agent (CA), regardless of configuration, during intrusive construction activities on property known or suspected to contain UXO, other munitions that may have experienced abnormal environments (e.g., Discarded Military Munitions (DMM)), or munitions constituents in high enough concentrations to pose an explosive hazard, or CA, regardless of configuration, to ensure the safety of personnel or resources from any potential explosive or CA hazards. Source: (7).

Discarded Military Munitions (DMM): Military munitions that have been abandoned without proper disposal or 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)). For the purposes of the Military Munitions Response Program (MMRP) being conducted at the former Fort Ord, DMM does not include small arms ammunition.

Explosive Ordnance Disposal (EOD) Personnel: Military personnel who have graduated from the Naval School, Explosive Ordnance Disposal; are assigned to a military unit with a Service-defined EOD mission; and meet Service and assigned unit requirements to perform EOD duties. EOD personnel have received specialized training to address explosive and certain CA hazards during both peacetime and wartime. EOD personnel are trained and equipped to perform render safe procedures (RSP) on nuclear, biological, chemical, and conventional munitions, and on improvised explosive devices. Source: (7).

Expended: The state of munitions debris (MD) in which the main charge has been expended leaving the inert carrier. Source: (1).

Feasibility Study (FS): A study undertaken to develop and evaluate alternatives for remedial action. Source: (3).

Historical Impact Area: The impact area consists of approximately 8,000 acres in the southwestern portion of former Fort Ord, bordered by Eucalyptus Road to the north, Barloy Canyon Road to the east, South Boundary Road to the south, and General Jim Moore Boulevard to the west. Source: (1).

Institutional Control (IC): (a) Non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use; (b) are generally to be used in conjunction with, rather than in lieu of, engineering measures such as waste treatment or containment; (c) can be used during all stages of the cleanup process to accomplish various cleanup-related objectives; and (d) should be “layered” (i.e., use multiple ICs) or implemented in a series to provide overlapping assurances of protection from contamination. Source: (6).

Land Use Controls (LUCs): Physical, legal, or administrative mechanisms that restrict the use of, or limit access to, real property, to manage risks to human health and the environment. Physical

mechanisms encompass a variety of engineered remedies to contain or reduce contamination, or physical barriers to limit access to real property, such as fences or signs. Source: (7).

Magnetometer: An instrument used to detect ferromagnetic (iron-containing) objects. Total field magnetometers measuring the strength of the earth's natural magnetic field at the magnetic sensor location. Gradient magnetometers, sensitive to smaller near-surface metal objects, use two sensors to measure the difference in magnetic field strength between the two sensor locations. Vertical or horizontal gradients can be measured. Source: (4).

Material Documented as Safe (MDAS): MPPEH that has been assessed and documented as not presenting an explosive hazard and for which the chain of custody has been established and maintained. This material is no longer considered to be MPPEH. Source: (7).

Material Documented as an Explosive Hazard (MDEH): MPPEH that cannot be documented as MDAS, that has been assessed and documented as to the maximum explosive hazards the material is known or suspected to present, and for which the chain of custody has been established and maintained. This material is no longer considered to be MPPEH. Source: (7).

Material Potentially Presenting an Explosives Hazard (MPPEH): Material that, prior to determination of its explosives safety status, potentially contains explosives or munitions (e.g., munitions containers and packaging material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related debris); or potentially contains a high enough concentration of explosives such that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, or ventilation ducts that were associated with munitions production, demilitarization or disposal operations). Excluded from MPPEH are munitions within the DoD established munitions management system and other hazardous items that may present explosion hazards (e.g., gasoline cans, compressed gas cylinders) that are not munitions and are not intended for use as munitions. Source: (7).

Military Munitions: Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the DoD, the 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, including bulk explosives and chemical warfare 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. The term does not include wholly inert items, improvised explosive devices, or nuclear weapons, nuclear devices, and nuclear components, other than 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)).

Military Munitions Response Program (MMRP): The MMRP is a program under which munitions responses are conducted. Source: (1)

Mortar: Mortars typically range from approximately 1 inch to 11 inches in diameter or larger, and can be filled with explosives, toxic chemicals, white phosphorus or illumination flares. Mortars generally have thinner metal casing than projectiles but use the same types of fuzing and stabilization. Source: (2).

Munitions Debris (MD): Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal. Source: (7).

Munitions and Explosives of Concern (MEC): A term distinguishing specific categories of military munitions that may pose unique explosives safety risks: UXO, as defined in 10 U.S.C. 101(e)(5); DMM, as defined in 10 U.S.C. 2710(e)(2); or munitions constituents (e.g., TNT, cyclotrimethylenetrinitramine [RDX]), as defined in 10 U.S.C. 2710(e)(3)), present in high enough concentrations to pose an explosive hazard. Source: (7). For the purposes of the MMRP being conducted for the former Fort Ord, MEC does not include small arms ammunition.

Munitions Response: Munitions response means response actions, including investigation, removal actions, and remedial actions, to address the explosives safety, human health, or environmental risks presented by UXO, discarded military munitions (DMM), or munitions constituents (MC), or to support a determination that no removal or remedial action is required. (32 CFR 179.3)

Munitions Response Area (MRA): Any area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples include former ranges and munitions burial areas. An MRA is comprised of one or more munitions response sites. Source: (7).

Munitions Response Site (MRS): A discrete location within an MRA that is known to require a munitions response. Source: (7).

Operating Grids: Typically, 100-foot by 100-foot parcels of land as determined by survey and recorded by global positioning system (GPS), marked at each corner with wooden stakes. Sites are divided into operating grids prior to the commencement of work by brush removal or MEC sweep teams. A single grid may be occupied by only one team at any time, and the grid system facilitates the maintenance of safe distances between teams. Source: (1).

Projectile: An object projected by an applied force and continuing in motion by its own inertia, such as a bullet, bomb, shell, or grenade. Also applied to rockets and to guided missiles. Source: (2).

Range-Related Debris: Debris, other than MD, collected from operational ranges or from former ranges (e.g., target debris, military munitions packaging and crating material). Source: (7).

Remedial Investigation (RI): Process undertaken to determine the nature and extent of the problem presented by a release which emphasizes data collection and site characterization. The RI is generally performed concurrently and in an interdependent fashion with the feasibility study. Source: (3).

Removal Depth: The depth below ground surface to which all ordnance and other detected items are removed. Source: (1).

Small Arms Ammunition: Ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns. Source: (7).

Technology-Aided Surface Removal: A removal of UXO, DMM, or CWM on the surface (i.e., the top of the soil layer) only, in which the detection process is primarily performed visually, but is augmented by technology aids (e.g., hand-held magnetometers or metal detectors) because vegetation, the weathering of UXO, DMM, or CWM, or other factors make visual detection difficult. Source: (7).

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 materials; and (C) Remain unexploded, whether by malfunction, design, or any other cause. (10 U.S.C. 101 (e) (5)). For the purpose of the MMRP being conducted for the former Fort Ord, UXO does not include small arms ammunition.

UXO-Qualified Personnel: Personnel who have performed successfully in military EOD positions, or are qualified to perform in the following Department of Labor, Service Contract Act, Directory of Occupations, contractor positions: UXO Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist, or Senior UXO Supervisor. Source: (7).

UXO Technician: Personnel who are qualified for and filling Department of Labor, Service Contract Act, Directory of Occupations, contractor positions of UXO Technician I, UXO Technician II, and UXO Technician III. Source: (7).

Sources of the Above Definitions:

(1) Non-standard definition developed to describe Fort Ord-specific items, conditions, procedures, principles, etc. as they apply to issues related to the MEC cleanup.

(2) "Unexploded Ordnance (UXO): An Overview", October 1996. DENIX.

(3) Technical Guidance for Military Munitions Response Actions, Engineer Manual 200-1-15, U.S. Army Corps of Engineers, dated October 30, 2015.

(4) Survey of Munitions Response Technologies, June 2006. ITRC (Interstate Technology and Regulatory Council) with ESTCP (Environmental Security and Technology Certification Program) and SERDP (Strategic Environmental Research and Development Program).

(5) Evaluation of Statistical Methodologies used in U.S. Army Ordnance and Explosive Work. September 1999. Ostrouchov, George, Zimmerman, Gregory P., Beauchamp, John J., Federov, Valerii V., and Downing, Darryl J. Prepared by Oak Ridge National Laboratory for the U.S Army Engineering and Support Center.

(6) Institutional Controls: A Site Managers' Guide to Identifying, Evaluating, and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups. US EPA Office of Solid Waste and Emergency Response (OSWER) 9355.0-74FS-P, EPA 540-F-00-005. September 2000.

(7) Department of Defense Manual Number DoDM 6055.09, Volume 8, February 29, 2008, Administratively Reissued August 4, 2010. Incorporating Change 2, Effective January 24, 2018.

1.0 Introduction

This Remedial Action Report (RAR) describes the work elements and results for the munitions and explosives of concern (MEC) remedial action conducted at Munitions Response Site (MRS) - Bureau of Land Management (BLM) Unit 28 (Unit 28) ([Figure 1](#)) at the former Fort Ord, California. The work in Unit 28 was performed by KEMRON Environmental Services (KEMRON) with Gilbane as a subcontractor for the U.S. Army Corps of Engineers (USACE) under the Worldwide Environmental Remediation Services (WERS) Contract # W912DY-10-D-0027, Task Order No. CM 01. The major event milestones of this remedial action are shown in [Table 1](#). This work has been completed in accordance with:

- *Final Track 3 Record of Decision, Impact Area Munitions Response Area, Track 3 Munitions Response Site, Former Fort Ord, California* (Track 3 ROD; U.S. Department of the Army [Army], 2008),
- *Final Work Plan, Remedial Design/Remedial Action, Track 3 Impact Area Munitions Response Area, Munitions and Explosives of Concern Removal, Former Fort Ord, California* (Final RD/RA Work Plan; USACE, 2009),
- *Final Site-Specific Work Plan, Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 23 and in Support of Units 11 and 12 Prescribed Burns (includes portions of Units 5A, 9, 25, 28 and 31), Former Fort Ord, California* (Final Unit 23 SSWP; KEMRON, 2015a), and
- *Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, California* (Final Unit 28 SSWP; KEMRON, 2016).

In this document, the "project area" does not include the permanent fuel breaks surrounding the unit nor the footprint of the Military Operations in Urban Terrain (MOUT) Site 100-foot buffer. Subsurface MEC removal within the MOUT Site 100-foot buffer was previously reported in the *Draft Final MOUT Site Buffer, Munitions and Explosives of Concern, Remedial Action, Technical Information Paper, Former Fort Ord, California* (ITSI-Gilbane, 2014). This document is provided in [Appendix G](#). The MOUT Site Buffer is identified in most of the figures for reference.

1.1 *Purpose and Scope*

This RAR describes the remedial action conducted in MRS-BLM Unit 28, within the Impact Area Munitions Response Area (MRA). The general scope of the remedial action, as defined in the Track 3 ROD (Army, 2008), is to manage “the potential risk to future land users from MEC at the Impact Area MRA.”

Track 3 sites are areas at the former Fort Ord where MEC is known or suspected to be present, but MEC investigations have not yet been completed. The Track 3 site, known as the Impact Area MRA, consists of the 6,560-acre portion of the 8,000-acre historical Impact Area that is entirely within the natural resources management area described in the *Installation-Wide Multispecies Habitat Management Plan (HMP) for Former Fort Ord, California* (HMP, [USACE, 1997]) and is currently identified for transfer to the BLM. The Impact Area MRA is designated as a habitat reserve in the Fort Ord Reuse Authority Base Reuse Plan.

The scope of this project, as defined in the Final Unit 23 SSWP (KEMRON, 2015a), Final Unit 28 SSWP (KEMRON, 2016) and an approved field work variance (FWV), entailed the following:

- Vegetation clearance (manual or mechanical cutting),
- Technology-aided surface MEC removal, and
- Digital Geophysical Mapping (DGM) surveys.

The site-specific work plans did not identify any subsurface removal area within the Unit 28 project area. No additional MEC remediation was identified in the *MRS-BLM Unit 28, MEC Remedial Action Technical Memorandum* (Unit 28 TM; KEMRON, 2017), which is provided in [Appendix F](#). Subsurface removal that will address erosion features and a road reroute, identified during the joint Army-BLM inspection (described in the Unit 28 TM), will be conducted under the Non-Burn SSWP as a part of the system of regularly-maintained fuel breaks.

This RAR details the work completed as part of the MRS-BLM Unit 28 MEC remedial action and provides discussion of the following tasks:

- Mobilization and site setup,
- Vegetation clearance,

- MEC removal area grid and boundary survey,
- Technology-aided surface MEC removal,
- DGM, and
- Preparation of a TM.

1.2 *Approval Documents*

The work was conducted in accordance with the Final RD/RA Work Plan (USACE, 2009) governing the Track 3 Impact Area MRA. The Final Unit 23 SSWP (KEMRON, 2015a), and the Final Unit 28 SSWP (KEMRON, 2016), detailed the scope and site-specific procedures for the MEC remedial action within the project area. A FWV is included as [Appendix A](#) and is described below:

- [010](#) (AR# OE-0859b.2) Documented areas where vegetation removal, surface MEC removal and DGM survey were not completed. Approximately 12 acres of Unit 28 was determined by unexploded ordnance (UXO) safety personnel to be inaccessible to surface MEC removal due to extreme terrain. Approximately 39 acres of Unit 28 was determined by UXO safety personnel to be inaccessible to DGM survey due to extreme terrain. Recommended an evaluation in the TM based on the results of the surface MEC removal and DGM data to determine the likelihood of surface MEC remaining in the 12 acres.

After completing MEC remediation and DGM in Unit 28, the Unit 28 TM (KEMRON, 2017) was prepared providing an evaluation of the work completed. The TM is included in [Appendix F](#). No additional MEC remediation was identified in the Unit 28 TM.

1.3 *Project Personnel and Subcontractors*

MEC removal work was performed with qualified UXO technicians who met or exceeded the requirements of *Technical Paper 18, Minimum Qualifications for Personnel Conducting Munitions and Explosives of Concern Related Activities* (Department of Defense Explosives

Safety Board [DDESB], 2015), which was the controlling document at the time the work was performed. The key personnel for this project were:

- Senior Unexploded Ordnance Supervisor (SUXOS): Brad Olson (KEMRON)
- UXO Quality Control (QC) Specialist (UXOQCS): Bruce McClain (KEMRON)
- UXO Safety Officer: Val Valdez (KEMRON)
- Contractor QC Systems Manager (CQCSM): Chuck Clyde (Gilbane)
- QC Geophysicist: Alex Kostera (NAEVA)
- Project Manager: Steve Crane (KEMRON)
- Deputy Project Manager: Erin Caruso (Gilbane)
- Task Manager: Kevin Siemann (Gilbane)
- Project Geophysicist: Andrew Gascho (Gilbane)
- The following tasks were subcontracted:
 - Mechanical vegetation clearance (Woolery Timber Management)
 - Manual vegetation clearance (High Sierra Fire and Firestorm)
 - Recycling of metallic target debris (A & S Metals)
 - Disposal/recycling of munitions debris (MD) (Demil Metals)

1.4 Health and Safety

Work performed at the site was conducted and completed in accordance with the *Accident Prevention Plan – Munitions and Explosives of Concern (MEC) Removal and Soil Remediation Project, Former Fort Ord, California* (KEMRON, 2015b).

1.5 Report Organization

This RAR was prepared in accordance with the Track 3 RD/RA Work Plan (USACE, 2009) and is consistent with previous RARs for units within the Impact Area MRA at the former Fort Ord. The report also incorporates elements of U.S. Environmental Protection Agency (EPA) guidance for an RAR.

Sections of this RAR are organized as follows:

Section 1.0 Introduction

Section 2.0	Site Background
Section 3.0	Overview of Remedial Action
Section 4.0	Site Preparation
Section 5.0	Analog MEC Removal
Section 6.0	Digital Geophysical Mapping
Section 7.0	Quality Control/Quality Assurance (QC/QA)
Section 8.0	MEC and MD Removal
Section 9.0	Munitions Constituents (MC) Characterization
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Section 12.0	References
Appendix A	Field Work Variances
Appendix B	DD Form 1348-1A (MD and Metal Debris Documentation)
Appendix C	Examples of DGM Data Forms
Appendix D	USACE Surface Removal Quality Assurance Documentation
Appendix E	Explosives Accountability
Appendix F	MRS-BLM Unit 28, MEC Remedial Action Technical Memorandum, Former Fort Ord, California (KEMRON, 2017)
Appendix G	Draft Final Technical Information Paper (TIP), MOUT Site Buffer, MEC Remedial Action, Former Fort Ord, California (ITSI-Gilbane, 2014)
Appendix H	Responses to Comments

1.6 Applicable or Relevant and Appropriate Requirements

Applicable or relevant and appropriate requirements (ARARs) were outlined in the Track 3 ROD (Army, 2008). The performance of this remedial action was in compliance with the ARARs outlined in that document.

2.0 Site Background

2.1 Site Location

Fort Ord is a former military installation that comprises approximately 46 square miles in northwestern Monterey County, California and is located approximately 120 miles south of San Francisco. Monterey Bay forms the western boundary of the former Fort Ord, and the Santa Lucia Range bounds the former Fort Ord to the south. The cities of Marina, Seaside, and Salinas are northwest, southwest, and east of the former Fort Ord, respectively. [Figure 1](#) shows the location of the project area in the north eastern portion of the Impact Area MRA.

Unit 28 is approximately 107 acres and is located in the northeastern portion of the MRA, within the MRS-BLM. This acreage includes the MOUT Site Buffer. Unit 28 lies to the east of Riso Ridge Road, west of Impossible Canyon Road, north of Hawkeye Road, and ends to the north at Tongue Ridge. [Figure 2](#) shows road locations around Unit 28.

2.2 Population, Proximity, and Access

The project area is within the Impact Area MRA, which is currently enclosed by a four-strand barbed wire fence with concertina wire along critical locations. Access is restricted to authorized personnel only. The project area is located on land that is planned to be transferred to the BLM. Danger signs are posted at the perimeters of the Impact Area MRA. Existing access deterrents, such as fencing posted with warning signs approximately every 500 feet along the fencing, discourage, but do not prevent, entry into the area. Personnel from the Fort Ord Base Realignment and Closure (BRAC) office and BLM routinely check the Impact Area MRA fences to ensure that they remain in good condition and to identify/complete needed repairs in a timely manner. The fences are maintained through a services support agreement with the BLM. Potential exposure to MEC by unauthorized persons could occur through intentional trespassing

incidents. An *MRS Security Program* (Army, 2016) to mitigate such incidents is currently being implemented by the Army.

2.3 *Reuse*

The project area is currently designated for transfer to BLM as habitat reserve under the HMP (USACE, 1997) which describes special land restrictions and habitat management requirements within habitat reserve areas. Habitat reserve areas support special-status plant and animal species that require implementation of mitigation measures during Army cleanup activities as identified in the HMP (USACE, 1997). These mitigation measures ensure compliance with the Endangered Species Act and minimize potential adverse impacts to listed species during Army cleanup activities. Based on information provided by BLM, the reuse of the area as a habitat reserve is anticipated to include a variety of activities including:

- Road and trail management and maintenance,
- Habitat enhancement, including prescribed burning,
- Fuel break management,
- Use of administrative areas,
- Habitat monitoring and educational programs,
- Species-specific monitoring and habitat enhancement, and
- Recreational access on established routes.

2.3.1 *Vegetation and Habitat Type*

Central maritime chaparral (CMC) is the dominant habitat type within the project area. CMC is a dominant habitat type at Fort Ord and is identified as a protected plant community in the HMP (USACE, 1997). Additionally, limited areas of coast live oak woodland are present.

The dominant shrub species observed within the project area during the baseline monitoring include chamise (*Adenostoma fasciculata*), shaggy-barked manzanita (*Arctostaphylos tomentosa* ssp. *tomentosa*), black sage (*Salvia mellifera*), and Monterey manzanita (*A. montereyensis*) (Tetra Tech, Inc., 2012). These shrub species contribute most of the overall vegetative cover. HMP-listed shrub species present include Monterey manzanita, sandmat manzanita (*A. pumila*), Hooker's manzanita (*A. hookerii*), and Monterey ceanothus (*Ceanothus rigidus*) (Tetra Tech, Inc., 2012). Baseline surveys conducted for HMP herbaceous annual species identified

populations of Monterey spineflower (*Chorizanthe pungens*) and sand gilia (*Gilia tenuiflora arenaria*) within openings in the CMC (Tetra Tech Inc., 2012). No Seaside bird's beak (*Cordylanthus rigidus littoralis*) was identified during the baseline surveys. Although not identified during baseline surveys, Yadon's piperia (*Piperia yadonii*), a federally endangered HMP species, is also known to occur within Unit 28 along Riso Ridge Road, and coast wallflower (*Erysimum ammophilum*), another HMP annual species, was identified within Unit 28 along Impossible Canyon Road in 2015 by the Project Biologist.

The habitats within Unit 28 may also support special-status wildlife species identified in the HMP. Black legless lizards (*Anniella pulchra [nigra]*) could be encountered in any areas with sandy soils. Additionally suitable upland and dispersal habitat for California tiger salamander (CTS; *Ambystoma californiense*) is present within Unit 28. No CTS breeding ponds are present within Unit 28; however several are present in the vicinity.

Chapter 3 of the HMP (USACE, 1997) describes mitigation measures that must be implemented during MEC investigation and remediation. In addition to the HMP, base closure and reuse activities conducted at the former Fort Ord are required to follow specific protocols approved by the U.S. Fish and Wildlife Service (USFWS) as detailed in multiple Biological Opinions (BOs) (USFWS, 1997, 1999, 2002, 2005, 2007 [amendment], 2011, and 2014). In 2015, the USFWS issued a Programmatic BO that supersedes the previous BOs. The Programmatic BO (USFWS, 2015) contains additional conservation measures and recommendations relating to environmental remediation at former Fort Ord cleanup sites, which are described in further detail in [Section 10.0](#) of this RAR. The USFWS issued a Programmatic BO on June 7, 2017 that supersedes the 2015 Programmatic BO (USFWS, 2017); however, the 2017 Programmatic BO did not address this work since it was already completed. Habitat management activities related to the munitions remedial actions that are required by the HMP and BOs have been conducted for this unit. These are also described in further detail in [Section 10.0](#) of this RAR.

2.4 *Regulatory Status*

Since 1917 until base closure in 1994, Fort Ord primarily served as a training and staging facility for infantry troops. From 1947 to 1974, Fort Ord was a basic training center. The 7th Infantry Division was activated at Fort Ord on October 21, 1974 and was based at Fort Ord until base closure.

Fort Ord was placed on the National Priorities List of Superfund sites by the EPA on February 21, 1990, due to evidence of contaminated soil and groundwater. A Federal Facility Agreement (FFA) was signed by the Army, EPA, Department of Toxic Substances Control (DTSC), and the Regional Water Quality Control Board, a part of the California EPA. The FFA established procedures and schedules for conducting remedial investigations (RIs) and feasibility studies (FSs) and requires remedial actions be completed as expeditiously as possible. Fort Ord was selected in 1991 for Base Realignment and Closure (BRAC) under the Defense BRAC Act of 1990, and the base was officially closed in September 1994. The Army began investigating and removing MEC at the former Fort Ord after the BRAC listing, and a munitions response (MR) RI/FS began in 1998. In April 2000, an agreement was signed between the Army, EPA, and DTSC to evaluate MEC at the former Fort Ord subject to the provisions of the FFA.

Following completion of the *Final Track 3 Impact Area MRA Munitions Response Remedial Investigation/Feasibility Study, Former Fort Ord, California* (MACTEC Engineering and Consulting, Inc. [MACTEC], 2007), the Army prepared the Track 3 ROD (Army, 2008), which is the decision document presenting the selected remedial action for MEC in the Impact Area MRA. The remedy was selected following a 60-day public comment period, for the *Superfund Proposed Plan Remedial Action is Proposed for Impact Area Munitions Response Area, Track 3 Munitions Response Remedial Investigation / Feasibility Study, Former Fort Ord, California* (Army, 2007). The remedy was selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan.

The decision documented in the Track 3 ROD (Army, 2008) is undertaken pursuant to the President's authority under CERCLA Section 104, as delegated to the Army in accordance with Executive Order 12580, and in compliance with the process set out in CERCLA Section 120. The selection of the remedy is authorized pursuant to CERCLA Section 104, and the selected remedy is being carried out in accordance with CERCLA Section 121. The Army and the EPA jointly selected the remedy. The California EPA, as represented by the DTSC, had an opportunity to review and comment on the Track 3 ROD.

2.5 *Site Features and History of Military Munitions Use*

The Army currently retains the Ord Military Community and the U.S. Army Reserve Center located at the former Fort Ord. The remainder of Fort Ord was identified for transfer to federal, state, and local government agencies and other organizations. Since the Base was selected in 1991 for BRAC, site visits, historical and archival investigations, military munitions sampling, and removal actions have been performed and documented in preparation for transfer and reuse of the former Fort Ord property.

Since 1917 until base closure in 1994, portions of former Fort Ord were used by cavalry, field artillery, and infantry units for maneuvers, target ranges, and other purposes. Military munitions were fired and used on the facility, including artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, land mines, pyrotechnics, bombs, and demolition materials.

Fort Ord was selected in 1991 for decommissioning, but troop reallocation was not completed until 1993, and the base was not officially closed until September 1994. The property remaining in the Army's possession was designated as the Presidio of Monterey Annex on October 1, 1994, and subsequently renamed the Ord Military Community. Although Army personnel still operate parts of the Base, no active Army division is stationed at the former Fort Ord.

The Impact Area MRA is a complex of numerous former military ranges with a variety of historical uses, designs, and characteristics. Over the years, various types of munitions were used during training activities within the Impact Area MRA including artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, land mines, pyrotechnics, bombs, and demolition materials. Select ranges were used for small arms training activities only, while other ranges were characterized as multi-use. In general, the firing points of the ranges were located near the perimeter of the MRA, and firing was directed toward the interior portion of the range complex. Training activities at the Impact Area MRA ceased after the closure of Fort Ord in 1994. The former ranges within the MRA contain expended munitions and MEC. The Impact Area MRA is fenced, warning signs are posted, and access is controlled by the Army. The perimeter of the Impact Area MRA is patrolled to detect and prevent trespassing.

The project area is located in the north eastern portion of the Impact Area MRA and MRS-BLM. Unit 28 does not include the 45-foot wide permanent fuel breaks surrounding the unit. In this

document, the project work area does not include the MOUT Site Buffer. The footprint of the MOUT Site Buffer is shown on [Figure 2](#).

[Table 2](#) provides a list of former ranges which were identified in the Final Unit 28 SSWP (KEMRON, 2016) to be at least partially contained within, or overlap with, the project area.

2.6 Summary of MEC-Related Activities and Data Collected Prior to the Remedial Action

Munitions and Explosives of Concern (MEC) investigation and removal work completed within and adjacent to (within 100 feet) the project area prior to the work addressed in this report resulted in the recovery of 116 MEC items. This total includes items removed from adjacent fuel breaks and the MOUT Site Buffer. These items are shown in [Table 3](#). [Figure 4A](#) shows MEC items recovered from within the project area only.

3.0 Overview of Remedial Action

3.1 Remedial Action Objective

The remedial action objective (RAO) for the Track 3 remedy is to protect human health and the environment in a manner that complies with the ARARs. The RAO will be achieved by implementing the selected remedy of Technology-Aided Surface MEC Remediation, with Subsurface MEC Remediation in Selected Areas and Land Use Controls (LUCs). The selected remedy is designed to achieve both substantial risk reduction through MEC remediation and risk management through implementation of LUCs. The selected remedy best balances risk reduction and associated environmental impacts in supporting the anticipated future use of the site as a habitat reserve. The presence of MEC in the Impact Area MRA was not identified as a concern in terms of explosives safety risks to ecological receptors.

Further statements regarding the RAO are provided in the Final RD/RA Work Plan (USACE, 2009):

- “The selected remedy addresses current or potential explosives safety risks to human health and the environment from MEC within the Impact Area MRA.”
- “The most significant short term objective is to remove surface MEC and prevent public access until MEC removal is completed.”

- “The long-term objective is to make the property safe for required habitat management activities by supplementing the remedial action with appropriate institutional controls that will effectively manage risk from any potentially residual MEC after the remedial action is completed.”

The selected remedy for the Impact Area MRA identified in the Track 3 ROD (Army, 2008) includes the following components:

- Vegetation clearance, primarily by planned prescribed burning, to provide access for MEC remediation,
- Technology-aided surface MEC removal. The method consists of a technology-aided visual search to identify MEC at the ground surface. Technology aids include Schonstedt magnetometers to facilitate detection of surface MEC in areas where the ground surface is not visible. Recovered MEC would be detonated, using engineering controls,
- DGM to provide a record of anomalies to assist future property users in identifying areas where explosives safety support (e.g., onsite construction support) may be required for activities involving ground disturbance or intrusive work,
- Subsurface MEC removal in selected areas. Areas of subsurface removal include regularly maintained fuel breaks and access roads, a minimum 100-foot buffer area between habitat and development areas, and other areas to address specific risk and/or land use needs. Examples include proposed future habitat restoration sites and areas where there are high density of anomalies associated with impact areas where military munitions with sensitive fuzes were fired. Recovered MEC would be detonated, using engineering controls,
- And, implementation of LUCs, including MEC recognition and safety training, construction support for ground disturbing or intrusive activities and UXO-qualified personnel support, access management measures including regular security patrols of the Impact Area MRA perimeter and maintenance of fences and signs, helicopter support for future prescribed burns in selected areas for future habitat management purposes, weed abatement support, and property transfer documentation that outlines land use restrictions, including prohibition of unrestricted land use.

3.2 MEC Remedial Action

3.2.1 Remedial Action Chronology

As outlined in the Final RD/RA Work Plan (USACE, 2009), Final Unit 23 SSWP (KEMRON, 2015a), and Final Unit 28 SSWP (KEMRON, 2016), the following field activities were conducted to implement the MEC remedial action within the project area:

- Vegetation clearance within the Unit,
- Grid and border survey,
- Technology-aided surface MEC removal,

- DGM survey,
- MEC detonation, and
- MD disposal.

[Table 1](#) provides a summary of major events associated with the remedial action within the project area.

3.2.2 Variations from the Site-Specific Work Plan

One variance ([Appendix A](#)) to the planned methods and areas described in the Final Unit 28 SSWP (KEMRON, 2016) occurred in response to unanticipated conditions or to improve the efficiency of MEC remedial activities. A clarification variance addressing rope lane widths (from five feet to ten feet) during surface removal activities was submitted in May 2018.

3.2.3 Summary of Remedial Action Methods

Vegetation clearance in the southern portion of Unit 28 to support planned prescribed burns in Units 11 and 12 began in July 2015 and was completed in August 2015. Vegetation clearance in the remainder of Unit 28 was completed in January 2016.

Technology-aided surface MEC removal in the southern portion of Unit 28 to support planned prescribed burns began in September 2015 and was completed in October 2015. Technology-aided surface MEC removal in the remainder of Unit 28 started April 2016 and was completed in May 2017.

DGM survey in Unit 28 was conducted with vehicle-towed EM61-MK2A arrays starting in November 2015 (southern portion of Unit 28 in support of prescribed burns) and was completed in June 2017 (remainder of Unit 28). [Figure 3](#) depicts the DGM data collected at Unit 28.

4.0 Site Preparation

4.1 Vegetation Clearance

Vegetation clearance in the southern portion of Unit 28 to support planned prescribed burns began in July 2015 and was completed in August 2015. Vegetation clearance in the remainder of Unit 28 was completed in January 2016. Mechanical mastication was performed in all accessible

areas, approximately 61 acres. Unit 28 is approximately 107 acres, and the project area is approximately 102 acres, which does not include the MOUT Site Buffer. In areas where mechanical mastication could not be performed, manual vegetation removal was performed in an additional approximately 25 acres. Due to extreme terrain, approximately 15 acres did not receive vegetation removal (See [Figure 1 of FWV 010](#)). Approximately one acre within Unit 28 did not require vegetation clearance due to a lack of vegetation. Vegetation clearance teams, with escort support from UXO-qualified personnel, cut vegetation to a height of six inches or less. Where mechanical equipment was used in areas with dense vegetation that obscured visual inspection of the ground surface, a first cut was made to a height between 18 and 24 inches above the ground. After visual inspection for MEC by UXO-qualified personnel, a second cut was made to a height of six inches or less above ground. In areas with medium-to-light vegetation where the ground surface could be observed before cutting, the vegetation was cut in one stage to a height of no more than six inches above ground. Manual tools (e.g., chain saws and trimmers) were used in areas where the mechanical cutter could not gain access and to trim tree branches.

Manually cut vegetation was either removed or chipped on site. Mechanically cut vegetation was left on site but was reduced to the maximum extent possible to minimize visual impairment of the ground surface.

UXO-qualified personnel provided UXO escort support during vegetation clearance, conducting a visual survey of the ground surface with the aid of Schonstedt magnetometers. When MD or suspected MEC was encountered, vegetation clearance personnel would stop operations until UXO-qualified personnel could determine if any hazard was associated with the item and remove the item if necessary.

4.2 Debris and Target Removal

During and after vegetation clearance activities, targets and other range-related debris (RRD) were removed from the project area. The quantity of recovered RRD was recorded on a per grid basis. Metal debris was recycled at a local recycler, and other debris was disposed of at a local municipal landfill. A representative photo of RRD encountered within the project area is included as [Photograph 1](#).

4.3 *Grid and Border Survey*

UXO personnel, performing anomaly avoidance, established a 100-foot by 100-foot grid system across the project area. The grid system was tied into the Fort Ord Master Grid System. The grid nodes were marked with wooden stakes, each labeled with a unique identification marked on the southwestern corner stake.

5.0 *Analog MEC Removal*

Analog methods were used for surface MEC removal within the project area. [Tables 4](#) and [6](#) list the MEC items recovered during analog MEC surface removal.

5.1 *Technology-Aided Surface MEC Removal*

Technology-aided surface MEC removal in the southern portion of Unit 28 to support planned prescribed burns began in September 2015 and was completed in October 2015. Technology-aided surface MEC removal in the remainder of Unit 28 started April 2016 and was completed in May 2017. Surface MEC removal operations are shown in [Photograph 2](#). Lanes approximately ten feet in width were placed across grids and UXO personnel used Schonstedt magnetometers to conduct surface MEC removal. UXO personnel searched (swept) with magnetometers a five foot lane immediately adjacent to one rope marker, turned at the end of the 100-foot grid boundary, and searched a five foot lane immediately adjacent to the other rope marker. Prior to the RA, seven MEC (UXO) items were recovered from within Unit 28 and are shown in [Table 3](#) and [Figure 4A](#). During vegetation clearance and technology-aided surface MEC removal, 225 MEC items were recovered and are shown in [Tables 4](#) and [6](#) and [Figure 4B](#). MEC items with sensitive fuzes are shown on [Figure 6](#). Statistical results for the Unit 28 RA are shown in [Tables 5](#) and [7](#). Quality control/quality assurance (QC/QA) processes were implemented in accordance with the Final Unit 23 SSWP (KEMRON, 2015a), and Final Unit 28 SSWP (KEMRON, 2016). Approximately 12 acres of Unit 28 was determined by UXO safety personnel to be inaccessible to surface MEC removal due to extreme terrain ([See Figure 2 of FVW 010](#)). The surface MEC removal grids are shown in [Figure 2](#). Representative photographs of surface MEC removed are included as [Photographs 3](#) through [7](#).

During technology-aided surface MEC removal, UXO teams utilized Schonstedt magnetometers in addition to visual survey for MEC. UXO personnel walked in 5-foot wide parallel lanes across

the removal grid to achieve complete Schonstedt and visual coverage. In general, metallic debris greater than 2 inches in any dimension identified on the ground surface was removed from the project area. Material Potentially Presenting an Explosive Hazard (MPPEH) and MEC were treated in accordance with standard operating procedures. The easting and northing location of MPPEH was recorded from the southwest corner stake of the grid to acquire the geo-referenced location at which it was found. During technology-aided surface removal operations in Unit 28, 225 MEC items were removed. Due to steep terrain and nonexistent southwest grid corner stakes along the western edge of Unit 28, the locations of 13 MEC items were inaccurately recorded as being outside of Unit 28, which resulted in 212 MEC items being reported in the Unit 28 TM (KEMRON, 2017). This data issue has been resolved and the correct 225 MEC items are being reported in this RAR. MD was tracked by weight on a grid-by-grid basis.

A total of 225 MEC items were found during vegetation clearance and surface MEC removal. One hundred and fifty five of the 225 MEC items were classified as UXO. The other 70 MEC items removed as part of this operation were classified as DMM. All MEC items encountered and removed as part of the Unit 28 RA are summarized in [Tables 4 and 6](#).

5.2 *Subsurface MEC Removal*

Subsurface MEC removal was not conducted within Unit 28 as part of the work covered in this RAR. The site-specific work plans did not identify any subsurface removal area within the Unit 28 project area. No additional MEC remediation was identified in the Unit 28 Technical Memorandum.

6.0 *Digital Geophysical Mapping*

Digital Geophysical Mapping (DGM) survey operations were conducted in accessible areas within Unit 28. The DGM surveys were conducted with a vehicle-towed array consisting of three EM61-MK2A sensors, supported by single hand-pulled EM61-MK2A units. The towed array was used to obtain data over all accessible areas within the project area while the single units were utilized primarily for fill in. [Figure 3](#) shows the results of DGM. Measurement quality objectives (MQOs) were met and QC/QA processes were implemented in accordance with the Final Unit 23 SSWP (KEMRON, 2015a), and the Final Unit 28 SSWP (KEMRON, 2016). Data gaps visible on [Figure 3](#) are the result of obstacles preventing access to DGM surveys such as

steep terrain, gullies, berms, and individual trees or stands of oak trees. Approximately 62 acres were ultimately accessible for DGM survey.

6.1 DGM Surveys

DGM surveys were used as the primary method to record the presence of subsurface anomalies within Unit 28. DGM surveys were conducted with vehicle-towed EM61-MK2A arrays starting in November 2015 (southern portion of Unit 28 in support of prescribed burns) and were completed in June 2017 (remainder of Unit 28).

6.1.1 Instrumentation

As described in previous sections, EM61-MK2A sensors (towed array and single units) were utilized to obtain DGM data at the project area. A Leica real-time kinematic (RTK) global positioning system (GPS) was used in conjunction with the EM61-MK2A sensors for navigation data.

6.1.1.1 EM61-MK2A

The EM61-MK2A is a four-channel, high-sensitivity time delay electro-magnetic sensor designed to detect shallow ferrous and nonferrous metallic objects with good spatial resolution and minimal interference from adjacent metallic features. The EM61-MK2A has two rectangular (1 x 0.5 meters) source/receiver coils vertically stacked 40 cm apart. A square wave electro-magnetic pulse is generated during “time on” (positive and negative) and “time off” cycles. This induces subsurface eddy currents with an associated secondary magnetic field. The decay of the secondary magnetic fields is measured during “time off” cycles and stored as a millivolt response. By measuring the decay at “late times,” the system can distinguish between natural earth materials and buried metal (ferrous and nonferrous) due to the slower rate of decay in the secondary field from metallic objects compared to that from earth materials. The EM61-MK2A can measure a differential, which is calculated as the voltage difference between the top and bottom coils. During this project, data were recorded at four time gates from the bottom coil. The responses at these four specified time gates are recorded and displayed by an integrated system data logger.

6.1.1.2 Leica GPS

RTK GPS requires known coordinates to establish a base station. Once the base station is established, it determines its location using satellites and applies a correction based on the offset from the known coordinates. The correction is used by a rover that is in direct communication with the base station through a radio link. RTK GPS is capable of taking survey-grade measurements in real time and providing immediate accuracy within 1 to 4 cm.

A permanent base station maintained by USACE and located in Ranges 43-48 was used for project area operations.

6.1.2 Data Collection Procedures

EM61-MK2A surveys utilized the four time gate readings from the bottom coil. Readings were sampled at a minimum rate of 10 readings per second. GPS readings were logged at a rate of 1 reading per second. All data collection activities were recorded in both field logs and personal digital assistants, and were later synchronized into the project database. The field notes were monitored by data processors and the QC Geophysicist, and they are included in the data delivery forms. As discussed above, a combination of two different data collection modes were employed at the project area using the EM61-MK2A. These include the towed array and single unit manual systems.

6.1.2.1 Towed Array

The towed array system consisted of three EM61-MK2A coils mounted on a wheeled platform. The three units were mounted in parallel, wide end forward, such that the center-to-center coil spacing was 2.0 feet, and the bottoms of the coils were set at the standard Geonics height of 42 cm above the ground. The wheeled platform was pulled with a bulldozer. Survey lanes were marked using a biodegradable foam-marking system mounted to the bulldozer. The EM61-MK2A and GPS data were streamed together and recorded using Geometrics MagLogNT software. Data collection on the towed array was controlled remotely by a wireless transmitter from a remote computer. This allowed the tractor or bulldozer driver to concentrate on coverage. The remote computer was operated by a field geophysicist. The remote computer controlled the functions of the field computer mounted to the towed array system. The remote computer operator monitored the data collection.

6.1.2.2 Single Unit/Manual

A single EM61-MK2A unit was mounted on wheels and manually pulled to fill in data gaps caused by surface obstructions such as tree stumps, logs, and any gaps caused by inconsistent towed array survey paths. RTK GPS was used for navigation and data were recorded using a standard field data logger. These data were then appended to the appropriate dataset to fulfill the MQO requirements.

6.1.2.3 Daily Functional QC Checks

To insure the instruments met project QC requirements, tests were performed daily. As described in project quality control documents, the following instrument tests were performed:

- Static Background Test
- Static Spike Test
- Personnel Test
- Cable Shake Test
- Repeat Data/Lag Line
- Static GPS Location Test
- Dynamic GPS Location Test (added)

On days that the instruments were in use, QC tests were performed at the beginning and the end of each day. If the instruments did not meet QC standards, the field crew would resolve the issue before commencing with the survey. In the event that the instrument was deemed faulty at the end of the day, QC Geophysicists were notified and proper steps were taken to verify survey data met QC standards.

In addition to the first six standard tests, two dynamic GPS location tests were conducted. One test consisted of placing a hitch-ball in the field area that was to be surveyed. The location of the hitch-ball was measured with GPS prior to obtaining data. The hitch-ball was run over by the EM61-MK2A system several times in one day. After the data were processed, the location was checked to verify that the location was within specification (2 feet).

6.1.3 Data Processing

Geophysical data were processed using Geosoft's Oasis Montaj and vendor-supplied software. Oasis Montaj processing included several steps:

1. Transforming raw data to American Standard Code for Information Interchange (ASCII) xyz files: Using vendor-supplied software, data were converted from the native file format to ASCII data files suitable for import into Oasis Montaj.
2. Initial data review: Once raw xyz files were imported into Oasis Montaj, the coordinates were converted to the project coordinate system. Data coverage and quality were assessed by the data processors. If it was determined that data quality and coverage were acceptable, then the data proceeded to the next step. If coverage and/or data quality objectives were not met, then field teams were sent to either fill in data gaps or re-collect data where necessary.
3. Correcting for instrument latency: Using the results of the daily repeat data test, geophysical data were shifted to account for the time lag inherent in the data logging system.
4. Leveling data: Data were leveled to the same background values removing the effects of instrument drift. The leveled data were added together to create the 4-channel sum.

Data processing procedures remained consistent for the project area. Data processing activities were logged in data processing forms. A detailed description of the processing steps was outlined in the project quality control documents.

6.1.4 Data Delivery

Survey data were broken down into separate grids and/or grid blocks prior to delivery. The delivery schedule was consistently met throughout the project. Any exceptions were noted on the processing forms, and the QA Geophysicist was informed. Raw and processed data were submitted as one package within five days of data collection. Raw data deliveries included the raw data in binary format, raw data in ASCII xyz format, and the field notes saved in portable document format form. Processed data included the processed data in ASCII xyz format, the final targets lists, and the appropriate data processing forms. Examples of the data forms included in the data delivery are contained in [Appendix C](#).

6.2 *Measurement Quality Objectives*

The DGM surveys for the project area were conducted with Category B MQOs based on the post-DGM activities planned for the site.

The following items were monitored throughout the project according to MQOs specified in the Final Unit 23 SSWP (KEMRON, 2015a), and the Final Unit 28 SSWP (KEMRON, 2016):

- Background noise
- Mean speed
- Along track spacing
- Across track spacing
- Instrument latency corrections
- Data leveling
- Systematic noise
- Anomaly selection
- Positioning errors
- Known location QC items
- Blind seed/QC items
- Reacquisition

According to the geophysical QC plan, the QC Geophysicist is required to monitor all MQOs. The QC Geophysicist reviewed every grid. If any aberrations were found within the MQOs, actions were taken to assure the specific metric was corrected before passing the grid. These actions were documented in weekly QC reports and sent to the USACE QA Geophysicist. During the project surveys, the USACE QA Geophysicist reviewed grids only after they passed geophysical QC. Any comments or concerns were addressed and issues were resolved between the project Geophysicist and the USACE QA Geophysicist. The *Unit 28 Final Quality Assurance Report, Digital Geophysical Operations*, is included as an appendix to the Unit 28 TM (KEMRON, 2017). The Unit 28 TM (KEMRON, 2017) is provided in [Appendix F](#).

6.3 Subsurface MEC Removal

Subsurface MEC removal was not conducted within Unit 28 as part of the Final Unit 23 SSWP (KEMRON, 2015a) or Final Unit 28 SSWP (KEMPRON, 2016). The site-specific work plans did not identify any subsurface removal area within the Unit 28 project area. No additional MEC remediation was identified in the Unit 28 TM.

7.0 Quality Control/Quality Assurance (QC/QA)

This section discusses the QC and QA procedures that were used at the project area.

7.1 QC

QC is conducted by the Contractor. All QC measures were conducted by the UXOQCS and by the QC Geophysicist. A discussion of the pertinent QC measures and procedures is included in the following sections.

7.1.1 Analog QC

7.1.1.1 Field Activities

During surface removal operations in Unit 28, the UXOQCS was responsible for visually observing teams and conducting periodic spot checks to ensure grids were receiving complete coverage during the surface removal phase. The UXOQCS performed analog QC survey of at least 10% of completed surface MEC removal grids. All grids passed 10% analog QC surveys performed by the UXOQCS.

Additionally, surface blind seeds were emplaced by the UXOQCS before and during technology-aided surface removal field operations. All surface blind seeds were located in the field by the UXO teams.

7.1.1.2 Database Activities

The UXOQCS reviewed every entry received from personnel in the field during each phase of work prior to entry in the database. Each entry was reviewed for completion of field QC, MEC and MD nomenclature, completion of a given grid, and ultimate disposition of MEC items.

7.1.2 DGM QC

The DGM QC standards and procedures were outlined in the Final Unit 23 SSWP (KEMRON, 2015a), Final Unit 28 SSWP (KEMRON, 2016) and subsequent project quality documents.

The QC Geophysicist was responsible for planning and executing QC oversight of geophysical activities and ensuring compliance with geophysical QC requirements. Specifically, the QC Geophysicist was responsible for the following:

- Reviewing and approving the qualifications of geophysical staff,
- Planning and ensuring the acceptable performance and completion of all geophysical QC activities,
- Reviewing the geophysical QC and DGM data, target lists, and dig results as specified in the Final Unit 23 SSWP (KEMRON, 2015a), Final Unit 28 SSWP (KEMRON, 2016), and subsequent updates,
- Establishing the known and blind seed item and location control program,
- Identifying quality problems and verifying that appropriate corrective actions were implemented for geophysical activities, and
- Ensuring that the requisite geophysical QC records, including submittals, were generated and retained as prescribed.

In order to keep track of weekly events and statistics, a weekly QC report was delivered to the Project Geophysicist and the QA Geophysicist. This included all pertinent information for the week as well as cumulative information about the project including, but not limited to, information such as grids surveyed, personnel, average acreage per day, and QC blind seeds located.

The QC Geophysicist had daily access to all geophysical QC and DGM data and was on site intermittently as needed after the completion of the initial inspections for geophysical activities. He was also on site as needed for meetings and seeding. All QC seeds were located and removed by MEC surface removal teams. The QC Geophysicist reported to the CQCSM and supported the UXOQCS.

7.2 Quality Assurance

QA is conducted by the USACE Ordnance and Explosives Safety Specialist (OESS) and the USACE QA Geophysicist.

7.2.1 *Analog Quality Assurance*

USACE Surface Removal Quality Assurance Documentation is provided in [Appendix D](#). This appendix includes a table documenting when work grids in Unit 28 were subjected to surface removal quality assurance surveys. The USACE OESS independently conducted analog survey of at least 10% of each completed surface removal grid. All completed surface removal grids passed QA surveys and were accepted by USACE.

7.2.2 *DGM Quality Assurance*

The TM for Unit 28 is provided in [Appendix F](#). The *Unit 28 Final Quality Assurance Report, Digital Geophysical Operations*, is included as an appendix to the TM for Unit 28. All DGM data for Unit 28 has been reviewed and approved by the USACE QA Geophysicist.

7.2.3 *Corrective Action Requests*

During the course of the project area field operations, the USACE issued no Corrective Action Requests (CARs).

8.0 *MEC and MD Removal*

This section provides summaries of the MEC and MD removed from the project area. [Table 3](#) provides data for MEC items recovered within and adjacent to (within 100-feet) the project area during previous investigations.

8.1 *Remedial Action*

Statistical information for the Unit 28 MEC remedial action was recorded, tracked, and reported by removal grid, individual item, and date.

The statistical results for the remedial action are provided in [Tables 5](#) and [7](#).

8.1.1 *MEC Removal*

MEC was recovered and subjected to detonation during the course of the project RA. As shown in [Table 4](#), a total of 225 MEC items were found and removed during vegetation clearance and

surface MEC removal operations for the project area. A summary of the type and quantity of MEC recovered during the RA is provided in [Tables 4](#) and [6](#).

8.1.2 MD Removal

Recovered MD was characterized by weight on a grid-by-grid basis. [Figure 5](#) summarizes the estimated weight of MD removed from each removal grid. A total estimated quantity of MD removed during the RA is provided in [Table 5](#). Representative photographs of surface MD removed are included as [Photographs 8](#) and [9](#).

MD and RRD were initially classified as MPPEH. Following initial classification, the MPPEH was certified by the SUXOS, UXOQCS, and USACE OESS as either material documented as safe (MDAS) or material documented as an explosive hazard (MDEH). All MDEH was detonated as described further in [Section 8.1.3](#). MDAS was certified free from explosive material, and stored in lockable roll-off containers. MDAS was demilitarized as appropriate. MDAS was inspected, certified and transported to a recycling facility. DD Form 1348-1A documentation accompanied the MDAS. A DD Form 1348-1A for this project is provided in [Appendix B](#). Additional MDAS from other Fort Ord MEC sites is included in the total amount of MD documented in [Appendix B](#).

8.1.3 Detonation of Munitions and Explosives of Concern

During the course of the Unit 28 remedial action, 225 MEC items were destroyed by detonation. Explosives Accountability forms with dates of demolition operations are included in [Appendix E](#). All procedures for demolition operations included in the Final Unit 23 SSWP (KEMRON, 2015a) and Final Unit 28 SSWP (KEMRON, 2016) were followed. All items were destroyed by detonation, and details, such as the date and result of this operation, have been reported in the Fort Ord Military Munitions Response Program database.

8.1.4 Disposition of Munitions Debris

The MDAS was transported to Demil Metals for smelting and eventual recycling. DD Form 1348-1A documentation accompanied the MDAS. A DD Form 1348-1A for this project is provided in [Appendix B](#).

8.2 *Conceptual Site Model*

The distribution of all MEC items found and removed as part of this remedial action within Unit 28 is shown on [Figure 4B](#). The observed distribution of surface MEC throughout Unit 28 is consistent with the expected distribution within this unit based on historical information. Unit 28 includes a number of partial or complete range fans that were most likely used for mixed use training. The MEC items found and removed from Unit 28 included 119 projectiles and cartridges of munitions with sensitive fuzes, and other MEC items that are consistent with the centralized location of Unit 28 within the main impact area of the former Fort Ord.

Surface MEC removal and DGM data were evaluated in the Unit 28 TM (KEMRON, 2017) ([Appendix F](#)). No additional MEC remediation was identified in the Unit 28 TM (KEMRON, 2017).

Munitions with sensitive fuzes-were expected in Unit 28. During the remedial action, 119 munition items with sensitive fuzes were encountered and removed. Munition items with sensitive fuzes and historic target locations are shown in [Figure 6](#). In the southern portion of the unit there is a potential for munition items with sensitive fuzes to remain in the shallow subsurface. The Army is currently conducting a field study designed to provide more information about how areas/grids where MEC of the type containing sensitive fuzes were recovered during surface removal could be addressed in the future. As previously addressed in the Unit 28 TM (KEMRON, 2017), a recommendation on this issue will be deferred until after the completion of the field study.

9.0 *Munitions Constituents (MC) Characterization*

9.1 *Previous Site Characterization*

Explosive ordnance target areas located within the Impact Area MRA were sampled as part of the Site 39 RI. Results are presented in the *Final, Basewide Remedial Investigation/Feasibility Study, Fort Ord, California* (Harding Lawson Associates [HLA], 1995). Based on the available information at that time, a biased sampling program was developed to focus on the target areas, which were the areas most likely to contain detectable amounts of ordnance-related chemical residues and metals. Soil remediation in specific areas within the Impact Area MRA identified in the Site 39 ROD Amendment occurred with appropriate UXO support as described in the *Final*

Remedial Action Completion Report, Site 39 Inland Ranges Habitat Reserve, former Fort Ord, California (Gilbane, 2014).

9.2 *Reconnaissance*

Reconnaissance for Unit 28 was conducted in August 2017. Features mapped and recorded with a GPS as a general field practice across all site reconnaissance areas include targets, berms, craters or mounds, MD, trash pits, debris, and RRD. The data collected were evaluated to determine location of soil samples required to further characterize an area with possible soil contamination. A soil sampling plan for Unit 28 is currently under development.

9.3 *Site Characterization*

Prior to the initiation of field operations, UXO field personnel were trained to recognize and report evidence of potential soil contamination. Any such evidence was noted within the project area and was incorporated into the BRA evaluation of the units. Areas characterized for soil remediation include berms, craters, and areas with little or no vegetation.

9.4 *Observations of Evidence of Potential Soil Contamination*

As noted above, a soil sampling plan for Unit 28 is currently under development. Evidence of potential soil contamination was included as part of the sampling plan development.

10.0 *Environmental Protection*

10.1 *Description of Impacts and Mitigation Measures*

The project area is within the Natural Resource Management Area which is designated for transfer to BLM as undeveloped habitat reserve as described in the HMP (USACE, 1997). The HMP describes special land restrictions and habitat management requirements within habitat reserve areas. Habitat reserve areas support plant and animal species protected under the Endangered Species Act; implementation of mitigation measures identified in the HMP are required to minimize potential adverse impacts to listed species. Vegetation in the project area consists primarily of CMC and contains numerous species listed as protected in the HMP. Please refer to [Section 2.3.1](#) for a description of the vegetation and HMP species present within Unit 28.

Mitigation measures to reduce impacts to protected species during MEC remedial actions are described in the HMP (USACE, 1997) and the Programmatic BO (USFWS, 2015). Mitigation and other environmental protection measures that were implemented during this project are summarized below:

Minimize Disturbance Associated with MEC Removal: Disturbances were limited to those required for the above-mentioned activities. As required by the HMP, existing roads were used with the exception of where it was necessary to traverse the site using tracked vehicles in order to remove piles of debris, remove vegetation, and conduct the DGM portion of the field work. Access roads, staging areas, and other appurtenant facilities were sited to avoid impacts to HMP plant and wildlife species. Additionally, multiple large Monterey manzanitas and coast live oak trees (*Quercus agrifolia*) were avoided during vegetation removal activities.

Avoid Disturbance of HMP Annual Plant Populations: Populations of sand gilia and Monterey spineflower were identified within openings in the CMC in Unit 28 (Tetra Tech, Inc., 2012 ([See Section 10.2 Biological Monitoring](#))). Additionally, populations of Yadon's piperia and coast wallflower are known within Unit 28. While MEC removal and DGM activities were necessary within the HMP annuals plant population areas, no equipment or personnel were permitted within these areas from March (approximate time of germination) through June (approximate time of seed-set) for Monterey spineflower, sand gilia, and coast wallflower, and through approximately September for Yadon's piperia.

Conduct Employee Education Program: Training for all supervisors and field personnel was conducted by the Project Biologist. Any new personnel also received biological training prior to working on the site. Training included information on rare, threatened, and endangered species on the site, including a description of the species, their protected status, a list of measures to be implemented to avoid and reduce impacts to these species and their habitat, and contact information to report unforeseen impacts to HMP species. Additionally, a Habitat Checklist was prepared by the Project Biologist prior to each activity that outlined specific avoidance and minimization measures, which were communicated to the project supervisors prior to work initiation.

Minimize Impacts to Black Legless Lizard: Supervisors and field personnel were trained during the Employee Education Program to identify black legless lizard, and were informed of the potential for this species to occur within the project site and the established protocol if any

individuals were encountered. No black legless lizards were observed during the course of this work.

Minimize Impacts to California Linderiella, California Tiger Salamander, and California Red-legged frog: Supervisors and field personnel were trained during the Employee Education Program to identify California Tiger Salamander and California Red-legged frog, and were informed of the potential for these species to occur within the project site and the established protocol if any individuals were encountered. No California Tiger Salamanders or California Red-legged frogs were observed during the course of this work. No habitat for California linderiella is present within Unit 28.

In order to reduce the spread of invasive weeds, existing roads were used to the greatest extent feasible. To reduce erosion concerns normal vehicle access was restricted to existing roads and established access routes. Tracked vehicles were used to conduct vegetation removal and DGM surveys over the site. KEMRON monitored the work site for potential erosion problems and a final inspection was conducted by the Project Biologist.

10.2 Biological Monitoring

Prior to the initiation of work, baseline studies were conducted within the project area to document the location and abundance of HMP shrub and annual plant species and habitats; the results of these surveys are presented in the *2011 Biological Monitoring Report for Units 11, 12, MOUT, 28, 9, 4, 5a; a portion of Unit 23 and Watkins Gate Burn Area; Units 15, 21, 32, and 34; Units 18 and 22; and MRS 16, Former Fort Ord* (Tetra Tech, Inc., 2012). Follow-up monitoring was conducted by Burleson Consulting in 2016; results of these surveys are presented in the *2016 Annual Report Biological Monitoring for Units 09, 23N, and 28, and Units 11 and 12 Containment Lines; Units 01 East, 06, 07, 10, Watkins Gate Burned Area, and MOUT Buffer; Unit 04 and Units 11 and 12 Interior; Units 18 and 22, Former Fort Ord* (Burleson Consulting, 2017). Monitoring within these units will continue according to the 2017 Programmatic BO (USFWS, 2017) to document the recovery of HMP species and habitat.

11.0 Protectiveness Assessment

The protectiveness of the remedial action was evaluated against the requirements of the Track 3 ROD (Army, 2008). The remedial action performed in Unit 28 was consistent with the Final

Unit 23 SSWP (KEMRON, 2015a), Final Unit 28 SSWP (KEMRON, 2016), and Track 3 RD/RA Work Plan (USACE, 2009), and no conditions contrary to these documents were encountered at the site.

The TM included in [Appendix F](#) applies to the project area of Unit 28. No additional MEC remediation was identified in the Unit 28 TM (KEMRON, 2017). Regulatory agencies have reviewed the TM and approved the recommendations included. Subsurface removal that will address erosion features and a road reroute, identified during joint Army-BLM inspection (described in the Unit 28 TM), will be conducted under the Non-Burn SSWP as a part of the system of regularly-maintained fuel breaks.

The DGM survey identified anomalies within the project area ([Figure 3](#)) which were not subject to reacquisition and subsurface removal, suggesting the possible presence of subsurface MEC.

The MEC remedial action for the project area is complete. During the remedial action, 119 MEC items with sensitive fuzes were encountered and removed. MEC items with sensitive fuzes and historic target locations are shown in [Figure 6](#). In the southern portion of the unit there is a potential for MEC items with sensitive fuzes to remain in the shallow subsurface. The Army is currently conducting a field study designed to provide more information about how areas/grids where MEC of the type containing sensitive fuzes were recovered during surface removal could be addressed in the future. All surface MEC remediation areas passed QC/QA. Based on the Track 3 ROD (Army, 2008) and the Track 3 RD/RA Work Plan (USACE, 2009), the following actions will occur until all remedial actions within the Track 3 Impact Area MRA are complete:

- Annual inspection of surface removal areas until the site is stabilized,
- Site security of the Impact Area MRA will be maintained,
- Unauthorized public access to or within the Impact Area MRA will continue to be prohibited,
- MEC recognition and safety training as needed prior to property transfer and during the implementation of the remedial action,
- Provision of UXO-qualified personnel support for intrusive work, and
- Follow-up habitat monitoring.

Short term recommendations for the area within Unit 28 where MEC items with sensitive fuzes were removed (the southern third of Unit 28) are as follows:

- Areas where MEC with sensitive fuzes were located will be monitored with enhanced procedures during annual surface area monitoring,
- All future MEC removal actions will be monitored for indications of subsurface MEC with sensitive fuzes, and
- Authorized personnel entering this unit will initially receive updated MEC safety and recognition training.

At the completion of the remedial action within the Impact Area MRA, the Army will evaluate the work completed against planned reuse activities and the suitability of the LUCs that were selected as part of the remedy. The results of this evaluation will be included in a Remedial Action Completion Report. A detailed LUC implementation plan will also be developed prior to property transfer, in coordination with the future landowner and the regulatory agencies.

12.0 References

Burleson Consulting, 2017. *2016 Annual Report Biological Monitoring for Units 09, 23N, and 28, and Units 11 and 12 Containment Lines; Units 01 East, 06, 07, 10, Watkins Gate Burned Area, and MOUT Buffer; Unit 04 and Units 11 and 12 Interior; Units 18 and 22, Former Fort Ord.* (AR# BW-2824)

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Gilbane Building Company (Gilbane), 2014. *Final Remedial Action Completion Report, Site 39 Inland Ranges Habitat Reserve, Former Fort Ord, California.* (AR# RI-047C)

Harding Lawson Associates, (HLA), 1995. *Final, Basewide Remedial Investigation/Feasibility Study, Fort Ord, CA Volumes I through VI (October, 1995).* (AR# BW-1283A).

ITSI-Gilbane, 2014. *Draft Final MOUT Site Buffer, Munitions and Explosives of Concern, Remedial Action, Technical Information Paper, Former Fort Ord, California.* (AR# OE-0801A)

KEMRON Environmental Services (KEMRON), 2015a. *Final Site-Specific Work Plan, Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 23 and in Support of Units 11 and 12 Prescribed Burns (includes portions of Units 5A, 9, 25, 28 and 31), Former Fort Ord, California.* (AR# OE-0862B)

KEMRON, 2015b. *Accident Prevention Plan – Munitions and Explosives of Concern Removal and Soil Remediation Project, Former Fort Ord, California.*

KEMRON, 2016. *Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, California.* (AR# OE-0859B)

KEMRON, 2017. *MRS-BLM Unit 28, MEC Remedial Action Technical Memorandum, Former Fort Ord, California.* (AR# OE-0910A)

MACTEC Engineering and Consulting, Inc. (MACTEC), 2007. *Final Track 3 Impact Area Munitions Response Area, Munitions Response, Remedial Investigation/Feasibility Study, Former Fort Ord, California.* (AR# OE-0596R)

Tetra Tech, Inc., (Tetra Tech), 2012. *2011 Biological Monitoring Report for Units 11, 12, MOUT, 28, 9, 4, 5a; a portion of Unit 23 and Watkins Gate Burn Area; Units 15, 21, 32, and 34; Units 18 and 22; and MRS 16, Former Fort Ord.* (AR# BW-2613)

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USACE, 2009. *Final Work Plan, Remedial Design/Remedial Action, Track 3 Impact Area Munitions Response Area, Munitions and Explosives of Concern Removal, Former Fort Ord, California.* (AR# OE-0660K)

U.S. Department of the Army (Army), 2007. *Superfund Proposed Plan Remedial Action is Proposed for Impact Area Munitions Response Area, Track 3 Munitions Response Remedial Investigation / Feasibility Study, Former Fort Ord, California.* (AR# OE-0623)

Army, 2008. *Final Track 3 Record of Decision, Impact Area Munitions Response Area, Track 3 Munitions Response Site, Former Fort Ord, California.* (AR# OE-0647)

Army, 2016. *MRS Security Program.* (AR# OE-0422P)

U.S. Fish and Wildlife Services (USFWS), 2015. *Programmatic Biological Opinion for Cleanup and Property Transfer Actions Conducted at the Former Fort Ord, Monterey County, California* (8-8-09-F-74). (AR# BW-2747)

USFWS, 2017. *Programmatic Biological Opinion*. June. (AR# BW-2747A)

* The 2015 version was the controlling document at the time the work was performed. The current, 2016 publication, was subsequently issued by DDESB.

Tables

Table 1
Major Event Milestones, Unit 28 Remedial Action

Major Event	Date Started	Date Completed
Signature of Track 3 Record of Decision		May 2008
Completion of Final RD/RA Work Plan		August 2009
Completion of Final Site Specific Work Plan (Unit 28)		February 2016
Vegetation clearance, target and debris removal in Unit 28	July 2015	January 2016
Grid and border survey in Unit 28	August 2015	February 2016
Surface removal in Unit 28	September 2015	May 2017
Digital geophysical survey in Unit 28	November 2015	June 2017
MEC detonation	October 2015	May 2017
Technical Memorandum Unit 28		November 2017

MEC = munitions and explosives of concern

RD/RA = Remedial Design/Remedial Action

Table 2
Ranges Associated with Unit 28

Range	Military History and Training Activities
Range 32-Helicopter Attack Range	The area around Range 32 appears to have been used for training exercises from as early as the 1940s to the late 1980s. Use ranged from a submachine gun training area in the 1940s, to unspecified training area in the 1950s, as inactive through most of the 1970s, and as a helicopter attack range in the 1980s. Site visit indicated several areas around Wildcat Ridge and Wildcat Canyon that may have been used for small arms training; however, concentrations of spent ammunition were not evident.
Range 33 – Demolitions Range	None Available
Rifle Grenade Range – Multiple Range Fans shown on training maps	According to range control records and historical training maps, this range was used as a recoilless rifle range and may have been used as a rifle grenade range in the late 1950s. The range was labeled as a night firing range on 1961 maps. Standard Operating Procedures (SOPs) from 1973 to 1992 indicate the range was a 25 meters and 50 meters range for night firing. The firing line was 185 meters with up to 60 firing points.
Range 35 – MOUT Complex	No live firing at Impossible City. 40 millimeter (mm) High Explosive (HE) and recoilless rifle training in Wildcat Canyon. 14.5mm subcal, small arms and fragmentation hand grenades at Tire House.
Range 36 - Fragmentation Hand Grenade/HE Hand	Range was used as a hand grenade range from at least 1966 to 1993. SOPs from 1973 through 1992 indicate that the range was a hand grenade range.
Mock Up Village, Combat in Cities, Range 75	Range was labeled as Mock up Village in 1940s. Mock up Village is labeled on 1947 7.5 min quadrangle photo map of Seaside. In the 1950s, the area is labeled as Combat in Cities. This area was investigated as part of Range 35A.

Note: Source of information is the Basewide Range Assessment (BRA) report (BW-2300L).

Table 3
MEC Items Encountered and Removed Prior to MEC Remedial Action

Date Item Found	Item Type	Quantity	Description	Depth in inches	Unit
9/10/2014	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	28	Fuel Breaks
9/10/2014	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	6	Fuel Breaks
3/18/2013	UXO	1	Grenade, hand, fragmentation, MK II	3	MOUT Site Buffer
3/7/2013	UXO	1	Signal, illumination, ground, parachute, rifle, M19 series	6	MOUT Site Buffer
3/5/2013	UXO	1	Fuze, grenade, hand, practice, M228	3	MOUT Site Buffer
3/4/2013	UXO	7	Fuze, grenade, hand, practice, M228	6	MOUT Site Buffer
2/27/2013	UXO	1	Grenade, rifle, M19	6	MOUT Site Buffer
2/27/2013	UXO	1	Signal, illumination, ground, M126 series	3	MOUT Site Buffer
2/27/2013	UXO	1	Rocket, 2.36inch, high explosive, anti-tank, M6	6	MOUT Site Buffer
9/26/2012	UXO	4	Projectile, 81mm, mortar, high explosive, M43 series	0	Fuel Breaks
9/26/2012	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	24	Fuel Breaks
9/19/2012	UXO	1	Projectile, 40mm, high explosive, M383	3	Fuel Breaks
6/6/2012	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	28	Fuel Breaks
5/30/2012	UXO	1	Projectile, 37mm, low explosive, MK I	4	Fuel Breaks
2/9/2012	UXO	5	Projectile, 81mm, mortar, high explosive, M43 series	36	Fuel Breaks
6/9/2010	UXO	1	Grenade, hand, fragmentation, MK II	4	Fuel Breaks
6/9/2010	UXO	1	Grenade, hand, fragmentation, MK II	4	Fuel Breaks
7/27/2005	DMM	6	Cap, blasting, electric, M6	0	Fuel Breaks
6/15/2005	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	24	Fuel Breaks
6/15/2005	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	24	Fuel Breaks
6/15/2005	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	24	Fuel Breaks
5/31/2005	UXO	1	Projectile, 37mm, high explosive, M63	2	Fuel Breaks
5/17/2005	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	14	Fuel Breaks
5/17/2005	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	2	Fuel Breaks
4/13/2005	UXO	1	Grenade, hand, fragmentation, MK II	4	Fuel Breaks
4/12/2005	UXO	14	Rocket motors, M222/M223 (DRAGON)	1	Fuel Breaks
4/6/2005	UXO	1	Projectile, 81mm, mortar, practice, M43 series	24	Fuel Breaks
4/6/2005	UXO	1	Projectile, 60mm, mortar, practice, M50 series	3	Fuel Breaks
11/18/2003	UXO	1	Grenade, hand, practice, M69	0	Unit 28
11/18/2003	UXO	1	Signal, illumination, ground, parachute, rifle, M19 series	0	Unit 28
11/18/2003	UXO	1	Simulator, explosive boobytrap, flash, M117	0	Unit 28
11/18/2003	UXO	1	Projectile, 40mm, parachute, illumination, M583 series	0	Fuel Breaks
11/18/2003	UXO	4	Grenade, hand, smoke, M18 series	0	Fuel Breaks
11/17/2003	UXO	1	Grenade, hand, smoke, M48	0	Fuel Breaks
11/17/2003	UXO	1	Grenade, hand, fragmentation, MK II	0	Fuel Breaks
9/16/2002	DMM	1	Fuze, grenade, hand, practice, M228	1	Fuel Breaks
9/16/2002	UXO	1	Projectile, 37mm, low explosive, MK I	6	Fuel Breaks
9/11/2002	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	6	Fuel Breaks
9/11/2002	UXO	1	Projectile, 81mm, mortar, illumination, M301 series	6	Fuel Breaks
9/9/2002	UXO	1	Projectile, 37mm, low explosive, MK I	2	Fuel Breaks
9/3/2002	UXO	1	Grenade, hand, practice, M69	1	Fuel Breaks
8/26/2002	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	10	Fuel Breaks
5/30/2002	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	10	Fuel Breaks
5/29/2002	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	14	Fuel Breaks
5/29/2002	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	10	Fuel Breaks
5/28/2002	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	14	Fuel Breaks
9/20/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	3	Fuel Breaks
9/18/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	3	Fuel Breaks
9/18/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	3	Fuel Breaks
9/18/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	12	Fuel Breaks
8/28/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	24	Fuel Breaks
8/27/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	10	Fuel Breaks
8/27/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	24	Fuel Breaks
8/27/2001	UXO	1	Projectile, 37mm, low explosive, MK I	7	Fuel Breaks
8/23/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	5	Fuel Breaks
8/23/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	9	Fuel Breaks
8/22/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	7	Fuel Breaks
8/21/2001	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	2	Fuel Breaks
8/20/2001	UXO	1	Projectile, 37mm, low explosive, MK I	4	Fuel Breaks
8/16/2001	UXO	1	Projectile, 40mm, high explosive, M383	1	Fuel Breaks
8/16/2001	UXO	2	Projectile, 40mm, high explosive, M383	3	Fuel Breaks
8/15/2001	UXO	1	Ordnance Components	1	Fuel Breaks

Table 3
MEC Items Encountered and Removed Prior to MEC Remedial Action

Date Item Found	Item Type	Quantity	Description	Depth in inches	Unit
8/15/2001	UXO	1	Projectile, 40mm, high explosive, M383	1	Fuel Breaks
8/14/2001	UXO	1	Projectile, 40mm, high explosive, M383	2	Fuel Breaks
4/5/2001	UXO	1	Projectile, 37mm, low explosive, MK I	1	Fuel Breaks
4/5/2001	UXO	1	Projectile, 37mm, low explosive, MK I	2	Fuel Breaks
4/4/2001	UXO	1	Projectile, 37mm, low explosive, MK I	3	Fuel Breaks
4/2/2001	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	6	Fuel Breaks
3/29/2001	UXO	1	Projectile, 60mm, mortar, practice, M50 series	3	Fuel Breaks
9/2/1998	UXO	1	Rocket, 3.5inch, practice, M29 series	2	Fuel Breaks
4/6/1998	UXO	1	Grenade, hand, smoke, M18 series	6	Fuel Breaks
4/6/1998	UXO	1	Grenade, hand, smoke, M18 series	4	Fuel Breaks
3/26/1998	DMM	1	Fuze, grenade, hand, M204 series	5	Fuel Breaks
9/1/1993	UXO	1	Grenade, hand, fragmentation, M67	0	Unit 28
8/26/1993	UXO	1	Grenade, hand, fragmentation, M67	0	Fuel Breaks
8/25/1993	UXO	1	Grenade, hand, fragmentation, M67	0	Fuel Breaks
8/25/1993	UXO	1	Grenade, hand, fragmentation, M67	0	Fuel Breaks
8/24/1993	UXO	1	Grenade, hand, fragmentation, M67	0	Fuel Breaks
3/17/1993	UXO	1	Projectile, 40mm, high explosive, M381	0	Fuel Breaks
3/17/1993	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	0	Unit 28

Table 4
MEC Items Found During Surface Removal

Description	Number of Items	
	Unit 28	
	UXO	DMM
Blocks, demo, C4	1	0
Cartridge, 40mm, high explosive, M383	0	54
Fuze, grenade, hand, M206 series	1	0
Fuze, grenade, igniting, M201	3	0
Grenade, hand, fragmentation, M26 Series	3	0
Grenade, hand, fragmentation, M67	0	3
Grenade, hand, fragmentation, MK II	0	12
Grenade, rifle, smoke, M22 series	1	0
Grenade, rifle, smoke, white phosphorous, M19A1	7	0
Projectile, 37mm, high explosive, MK II	1	0
Projectile, 37mm, high explosive, MK II	15	0
Projectile, 4.2inch, mortar, high explosive, M3 series	1	0
Projectile, 4.2inch, mortar, high explosive, M329 series	1	0
Projectile, 40mm, high explosive, M381	24	0
Projectile, 40mm, high explosive, M383	14	0
Projectile, 40mm, high explosive, M406	27	0
Projectile, 40mm, parachute, star, M662	1	0
Projectile, 57mm, high explosive, M306 series	8	0
Projectile, 60mm, mortar, high explosive, M49 series	18	0
Projectile, 75mm, high explosive, MK I	2	0
Projectile, 81mm, mortar, high explosive, M43 series	11	0
Projectile, 90mm, high explosive antitank, M371A1	1	0
Rocket motors, M222/M223 (DRAGON)	1	0
Rocket, 2.36inch, high explosive antitank, M6	10	0
Rocket, 2.36inch, practice, M7	0	1
Rocket, 3.5inch, high explosive antitank, M28 series	3	0
Simulator, launching, antitank guided missile and rocket, M22	1	0

155 **70**

DMM = Discarded Military Munitions

UXO = Unexploded Ordnance

Table 5
Statistical Results

Parameter	Unit 28
Surface removal acreage	90
DGM survey acreage	62
MEC items	225
Total Estimated MD Weight (lbs) for all areas	24,585
Total Estimated RRD and OD (lbs) for all areas	34,780

DGM = Digital Geophysical Mapping

MEC = Munitions and Explosives of concern

MD = Munitions Debris

RRD = Range-Related Debris

OD = Other Debris

Table 6
MEC Recovered During Remedial Action

Date Found	Unit	Grid	Northing	Easting	Operation Type	Depth (in)	Item Type	Qty	Description
9/15/2015	28	B3C6B1	2114120	5750512	Surface Removal	0	UXO	1	Projectile, 40mm, parachute, star, M662
9/16/2015	28	B3C5B0	2114160	5750450	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
9/18/2015	28	B3C5C9	2114205	5750390	Surface Removal	0	UXO	1	Projectile, 75mm, high explosive, MK I
9/18/2015	28	B3C5C9	2114210	5750390	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
9/18/2015	28	B3C5D0	2114330	5750450	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
9/18/2015	28	B3C5D9	2114315	5750378	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
9/21/2015	28	B3C5E0	2114465	5750435	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M381
9/21/2015	28	B3C5E0	2114470	5750435	Surface Removal	0	UXO	9	Projectile, 40mm, high explosive, M381
9/21/2015	28	B3C5J6	2114950	5750090	Surface Removal	0	UXO	1	Rocket, 3.5inch, high explosive antitank, M28 series
9/22/2015	28	B3C5E9	2114410	5750340	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
9/22/2015	28	B3C5I7	2114845	5750135	Surface Removal	0	UXO	1	Projectile, 57mm, high explosive, M306 series
9/22/2015	28	B3C5I7	2114830	5750160	Surface Removal	0	UXO	1	Rocket, 3.5inch, high explosive antitank, M28 series
9/22/2015	28	B3C5I7	2114845	5750150	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
9/23/2015	28	B3C5F9	2114512	5750353	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
9/23/2015	28	B3C5F9	2114550	5750350	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M381
9/28/2015	28	B3C5G9	2114683	5750330	Surface Removal	0	UXO	13	Projectile, 40mm, high explosive, M381
9/30/2015	28	B3C5H8	2114723	5750247	Surface Removal	0	UXO	1	Projectile, 57mm, high explosive, M306 series
9/30/2015	28	B3C5H8	2114785	5750214	Surface Removal	0	UXO	1	Projectile, 57mm, high explosive, M306 series
10/1/2015	28	B3C5H0	2114715	5750425	Surface Removal	0	UXO	1	Projectile, 57mm, high explosive, M306 series
10/1/2015	28	B3C5H0	2114730	5750425	Surface Removal	0	UXO	1	Projectile, 57mm, high explosive, M306 series
10/1/2015	28	B3C5H9	2114741	5750362	Surface Removal	0	UXO	1	Projectile, 57mm, high explosive, M306 series
10/1/2015	28	B3C5H9	2114742	5750335	Surface Removal	0	UXO	1	Projectile, 57mm, high explosive, M306 series
10/1/2015	28	B3C5H9	2114712	5750366	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series
10/1/2015	28	B3C5H9	2114749	5750316	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series
10/1/2015	28	B3C5H9	2114735	5750384	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series
10/2/2015	28	B3C5I8	2114875	5750242	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series
10/2/2015	28	B3C5I8	2114810	5750275	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series
10/2/2015	28	B3C5I9	2114820	5750320	Surface Removal	0	UXO	1	Rocket, 3.5inch, high explosive antitank, M28 series
10/2/2015	28	B3C5J8	2114907	5750212	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
4/11/2016	28	B3I9E4	2120430	5753802	Surface Removal	0	UXO	1	Fuze, grenade, igniting, M201
4/21/2016	28	B3H8I1	2119890	5752515	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
4/26/2016	28	B3G8J2	2118930	5752620	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, M67
4/26/2016	28	B3H8H3	2119765	5752770	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II

Table 6
MEC Recovered During Remedial Action

Date Found	Unit	Grid	Northing	Easting	Operation Type	Depth (in)	Item Type	Qty	Description
4/26/2016	28	B3H8H5	2119770	5752975	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
5/2/2016	28	B3H8G1	2119610	5752515	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/2/2016	28	B3H8G1	2119636	5752522	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/2/2016	28	B3H8G1	2119630	5752520	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/2/2016	28	B3H8G1	2119626	5752547	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/2/2016	28	B3H8G1	2119670	5752580	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/2/2016	28	B3H8G1	2119635	5752510	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/3/2016	28	B3G7I3	2118895	5751730	Surface Removal	0	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1
5/10/2016	28	B3G6F9	2118520	5751385	Surface Removal	0	UXO	1	Simulator, launching, antitank guided missile and rocket, M22
5/11/2016	28	B3H8F1	2119555	5752530	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/11/2016	28	B3H8F1	2119515	5752535	Surface Removal	0	UXO	1	Grenade, hand, fragmentation, M26 Series
5/11/2016	28	B3H8F1	2119515	5752545	Surface Removal	0	UXO	1	Fuze, grenade, igniting, M201
5/11/2016	28	B3H8F1	2119560	5752540	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/11/2016	28	B3H8F1	2119540	5752520	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/11/2016	28	B3H8F1	2119545	5752515	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
5/17/2016	28	B3H8E3	2119405	5752705	Surface Removal	0	UXO	1	Grenade, hand, fragmentation, M26 Series
5/23/2016	28	B3G6F0	2118570	5751480	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
5/23/2016	28	B3H7E0	2119415	5752490	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, M67
5/24/2016	28	B3G7E1	2118460	5751540	Surface Removal	0	DMM	1	Rocket, 2.36inch, practice, M7
5/26/2016	28	B3H7C0	2119240	5752485	Surface Removal	0	UXO	1	Grenade, hand, fragmentation, M26 Series
5/31/2016	28	B3H7B0	2119195	5752450	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
5/31/2016	28	B3H7B7	2119165	5752155	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, M67
5/31/2016	28	B3H7B8	2119145	5752215	Surface Removal	0	DMM	1	Grenade, hand, fragmentation, MK II
6/1/2016	28	B3G7C3	2118280	5751710	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
6/2/2016	28	B3I9D1	2120312	5753565	Surface Removal	0	UXO	1	Fuze, grenade, igniting, M201
6/8/2016	28	B3I8B5	2120105	5752985	Surface Removal	0	UXO	1	Fuze, grenade, hand, M206 series
6/13/2016	28	B3F7I1	2117830	5751590	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
6/13/2016	28	B3G6A8	2118090	5751270	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
6/13/2016	28	B3G6A8	2118085	5751240	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
6/13/2016	28	B3G6A8	2118075	5751235	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
6/21/2016	28	B3F6G8	2117655	5751260	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
10/31/2016	28	B3F6J8	2117935	5751220	Surface Removal	0	UXO	1	Rocket, 2.36inch, high explosive antitank, M6
11/16/2016	28	B3E6J4	2116930	5750850	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I

Table 6
MEC Recovered During Remedial Action

Date Found	Unit	Grid	Northing	Easting	Operation Type	Depth (in)	Item Type	Qty	Description
11/22/2016	28	B3E6H2	2116740	5750635	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
11/22/2016	28	B3E6H2	2116742	5750630	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
11/22/2016	28	B3E6H3	2116710	5750707	Surface Removal	0	UXO	2	Projectile, 40mm, high explosive, M406
11/22/2016	28	B3E6H3	2116710	5750710	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M406
11/22/2016	28	B3E6H3	2116707	5750703	Surface Removal	0	UXO	5	Projectile, 40mm, high explosive, M406
11/22/2016	28	B3E6H3	2116706	5750705	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M406
11/22/2016	28	B3E6H3	2116730	5750730	Surface Removal	0	UXO	6	Projectile, 40mm, high explosive, M406
11/22/2016	28	B3E6H3	2116740	5750735	Surface Removal	0	UXO	12	Projectile, 40mm, high explosive, M406
12/5/2016	28	B3D5F7	2115599	5750140	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
12/5/2016	28	B3D5F7	2115590	5750150	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
12/5/2016	28	B3F6A8	2117040	5751285	Surface Removal	0	UXO	1	Projectile, 37mm, high explosive, MK II
12/6/2016	28	B3D5C6	2115240	5750080	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
12/6/2016	28	B3D5F6	2115541	5750050	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
12/8/2016	28	B3D5F8	2115540	5750202	Surface Removal	0	UXO	1	Projectile, 4.2inch, mortar, high explosive, M329 series
12/8/2016	28	B3E6D4	2116370	5750840	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
12/13/2016	28	B3D5G7	2115615	5750130	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
12/13/2016	28	B3D5G7	2115612	5750180	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
12/14/2016	28	B3D5C7	2115290	5750175	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
12/15/2016	28	B3D5F9	2115514	5750342	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
12/21/2016	28	B3E6G6	2116650	5751030	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
12/22/2016	28	B3D5B6	2115175	5750070	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
12/27/2016	28	B3D5B6	2115185	5750095	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
12/27/2016	28	B3D5B7	2115115	5750115	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
12/28/2016	28	B3D5B7	2115190	5750150	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series
12/28/2016	28	B3D5B8	2115185	5750255	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
1/3/2017	28	B3D5A6	2115055	5750035	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series
1/9/2017	28	B3D5A7	2115055	5750150	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
1/9/2017	28	B3D5A7	2115090	5750179	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
1/11/2017	28	B3E6F4	2116535	5750845	Surface Removal	0	UXO	1	Projectile, 75mm, high explosive, MK I
1/12/2017	28	B3E6A3	2116070	5750760	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
1/12/2017	28	B3E6A4	2116040	5750845	Surface Removal	0	UXO	1	Blocks, demo, C4
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383

Table 6
MEC Recovered During Remedial Action

Date Found	Unit	Grid	Northing	Easting	Operation Type	Depth (in)	Item Type	Qty	Description
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115590	5750585	Surface Removal	0	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/17/2017	28	B3D6F1	2115530	5750530	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/18/2017	28	B3D5C0	2115230	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/18/2017	28	B3D5C0	2115215	5750406	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/18/2017	28	B3D5C0	2115215	5750406	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/18/2017	28	B3D5C0	2115215	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/18/2017	28	B3D5C0	2115215	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/18/2017	28	B3D5C0	2115216	5750403	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/19/2017	28	B3D5E6	2115450	5750090	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/19/2017	28	B3D5E6	2115450	5750090	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/19/2017	28	B3D5E6	2115440	5750015	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
1/23/2017	28	B3D5E8	2115440	5750280	Surface Removal	0	UXO	1	Projectile, 4.2inch, mortar, high explosive, M3 series
1/24/2017	28	B3D5D7	2115360	5750115	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
1/25/2017	28	B3D5E7	2115450	5750170	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/25/2017	28	B3D5E7	2115450	5750170	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
1/25/2017	28	B3D5E7	2115470	5750160	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
1/30/2017	28	B3D5F0	2115595	5750460	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383

Table 6
MEC Recovered During Remedial Action

Date Found	Unit	Grid	Northing	Easting	Operation Type	Depth (in)	Item Type	Qty	Description
1/31/2017	28	B3D5G0	2115605	5750428	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
1/31/2017	28	B3D5G0	2115660	5750490	Surface Removal	0	UXO	1	Projectile, 90mm, high explosive antitank, M371A1
2/6/2017	28	B3D6H2	2115755	5750690	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
2/9/2017	28	B3D5H0	2115710	5750410	Surface Removal	0	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1
2/9/2017	28	B3D5H0	2115710	5750410	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
2/13/2017	28	B3D5D5	2115320	5749920	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
2/28/2017	28	B3D6I2	2115825	5750640	Surface Removal	0	UXO	1	Projectile, 57mm, high explosive, M306 series
3/1/2017	28	B3D6E1	2115492	5750580	Surface Removal	0	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1
3/6/2017	28	B3D5E0	2115425	5750430	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
3/6/2017	28	B3D5E0	2115445	5750430	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
3/7/2017	28	B3D5E9	2115450	5750335	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
3/7/2017	28	B3D5E9	2115450	5750335	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
3/7/2017	28	B3D5E9	2115455	5750325	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
3/8/2017	28	B3D5E9	2115420	5750320	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
3/20/2017	28	B3D5D9	2115365	5750350	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
3/21/2017	28	B3D5D9	2115310	5750330	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
3/21/2017	28	B3D5D9	2115305	5750390	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
3/23/2017	28	B3D5D8	2115390	5750290	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
3/23/2017	28	B3D5D8	2115390	5750290	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
3/23/2017	28	B3D5D8	2115380	5750290	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
3/23/2017	28	B3D5D8	2115380	5750290	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
3/23/2017	28	B3D5D8	2115390	5750275	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
3/23/2017	28	B3D5D8	2115385	5750260	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
3/27/2017	28	B3D5D8	2115370	5750260	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
3/27/2017	28	B3D5D8	2115370	5750240	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
3/28/2017	28	B3D5D8	2115340	5750220	Surface Removal	0	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series
4/6/2017	28	B3D5B0	2115165	5750415	Surface Removal	0	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1
4/19/2017	28	B3D5A9	2115017	5750375	Surface Removal	0	UXO	1	Grenade, rifle, smoke, M22 series
4/25/2017	28	B3C6J1	2114930	5750510	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
4/26/2017	28	B3C5J0	2114935	5750448	Surface Removal	0	UXO	1	Projectile, 37mm, low explosive, MK I
4/26/2017	28	B3C5J0	2114945	5750450	Surface Removal	0	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1
4/27/2017	28	B3C5J0	2114945	5750455	Surface Removal	0	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1
5/3/2017	28	B3C5I9	2114805	5750310	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series

Table 6
MEC Recovered During Remedial Action

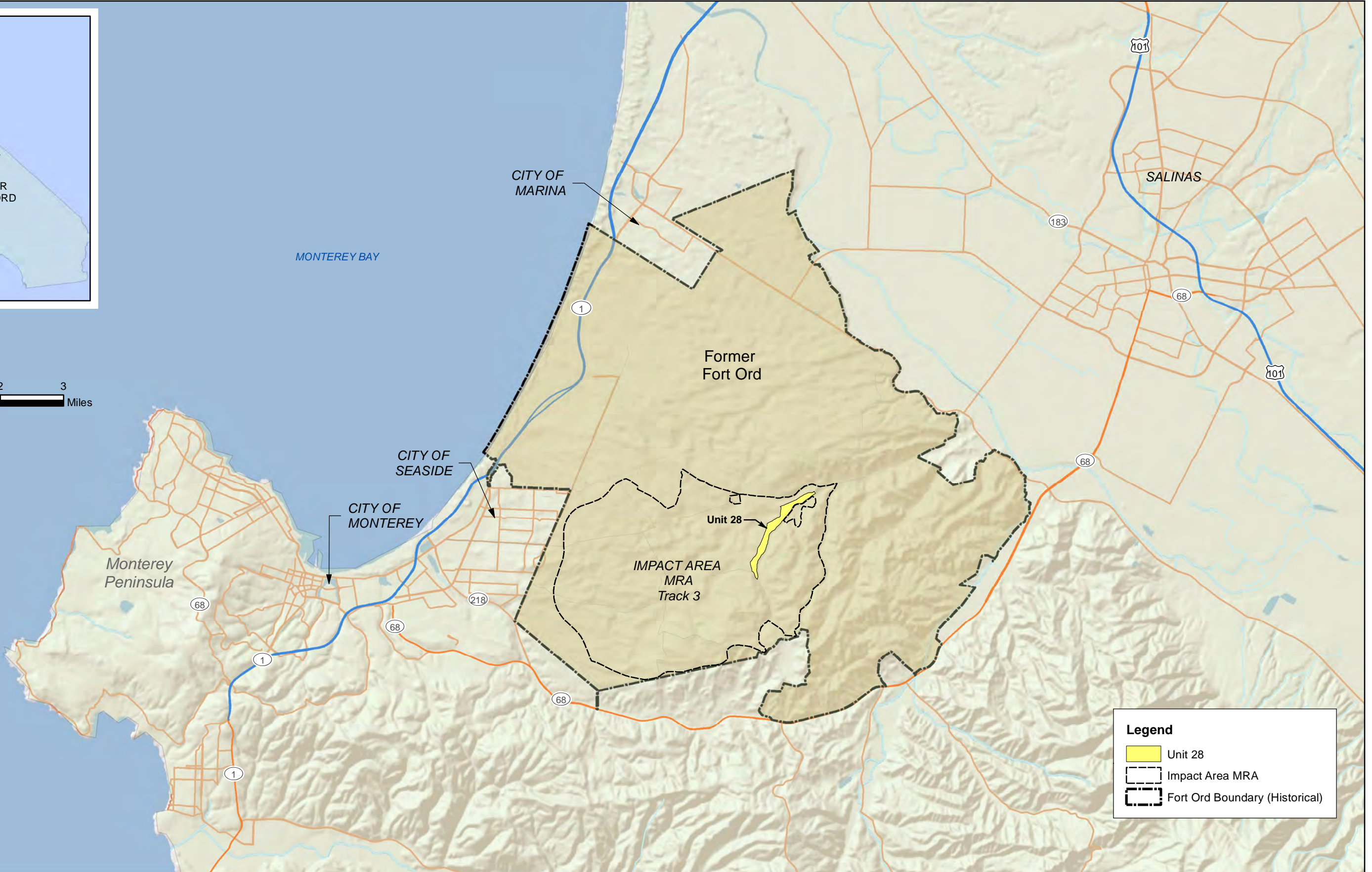
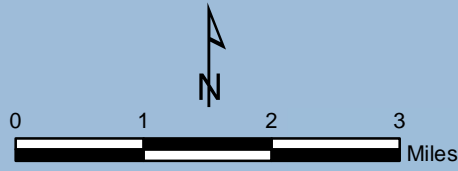
Date Found	Unit	Grid	Northing	Easting	Operation Type	Depth (in)	Item Type	Qty	Description
5/3/2017	28	B3C5I9	2114820	5750305	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series
5/3/2017	28	B3C5I9	2114898	5750370	Surface Removal	0	UXO	1	Projectile, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/3/2017	28	B3C5J0	2114998	5750405	Surface Removal	0	DMM	1	Cartridge, 40mm, high explosive, M383
5/8/2017	28	B3C5J8	2114990	5750285	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series
5/10/2017	28	B3C5J6	2114930	5750045	Surface Removal	0	UXO	1	Rocket motors, M222/M223 (DRAGON)
5/10/2017	28	B3C5J6	2114992	5750020	Surface Removal	0	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series

Table 7
Summary of Survey and Removal Methods by Grids

Activity	Unit 28 Grids	% of Total Grids
Surface Removal	527	90%
DGM Survey	365	62%

DGM = Digital Geophysical Mapping

Figures



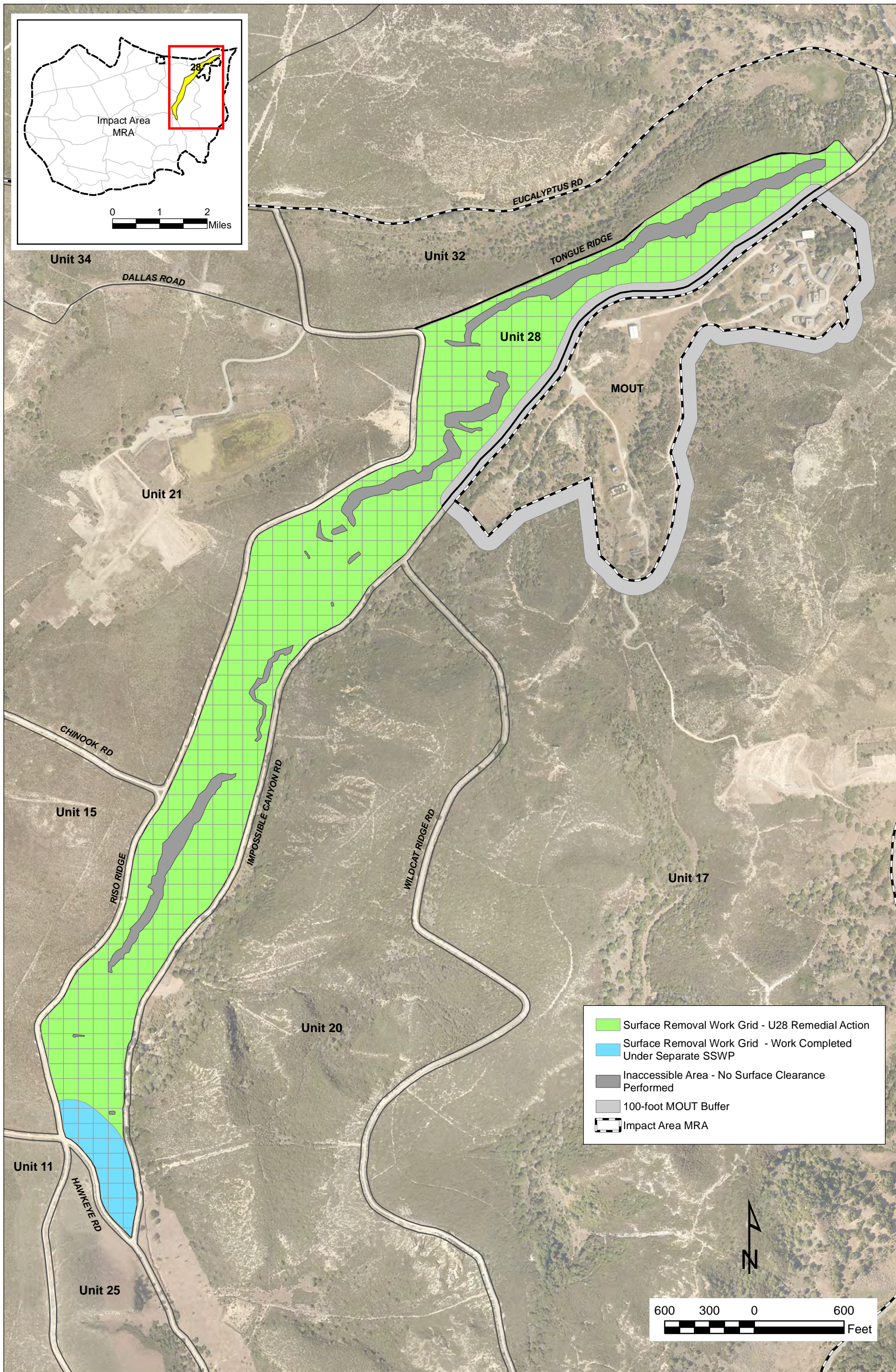
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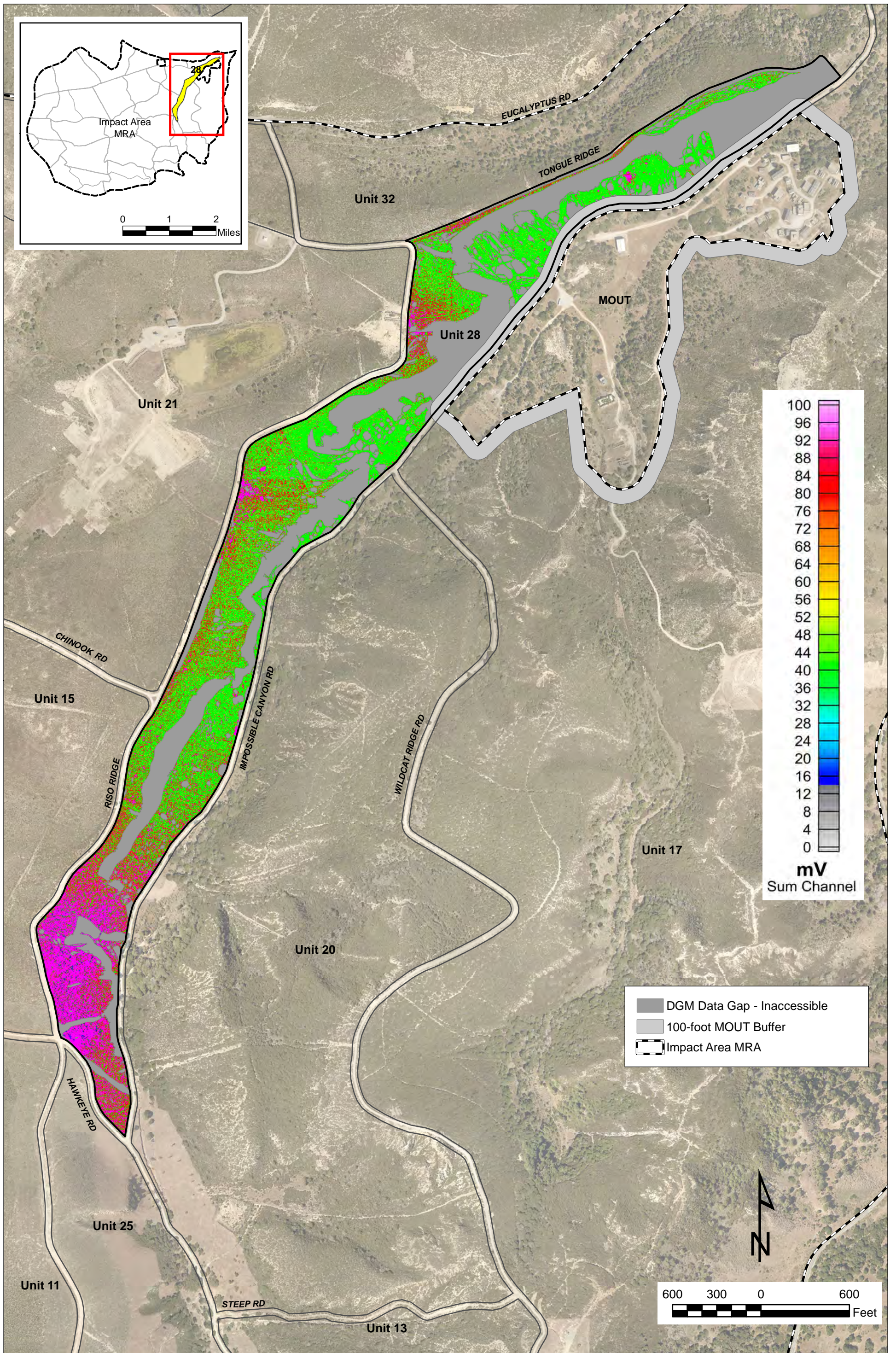
- Unit 28
- Impact Area MRA
- Fort Ord Boundary (Historical)



Remedial Action Report
 Unit 28
 Munitions and Explosives of Concern (MEC) Removal
 Impact Area MRA
 Former Fort Ord, California

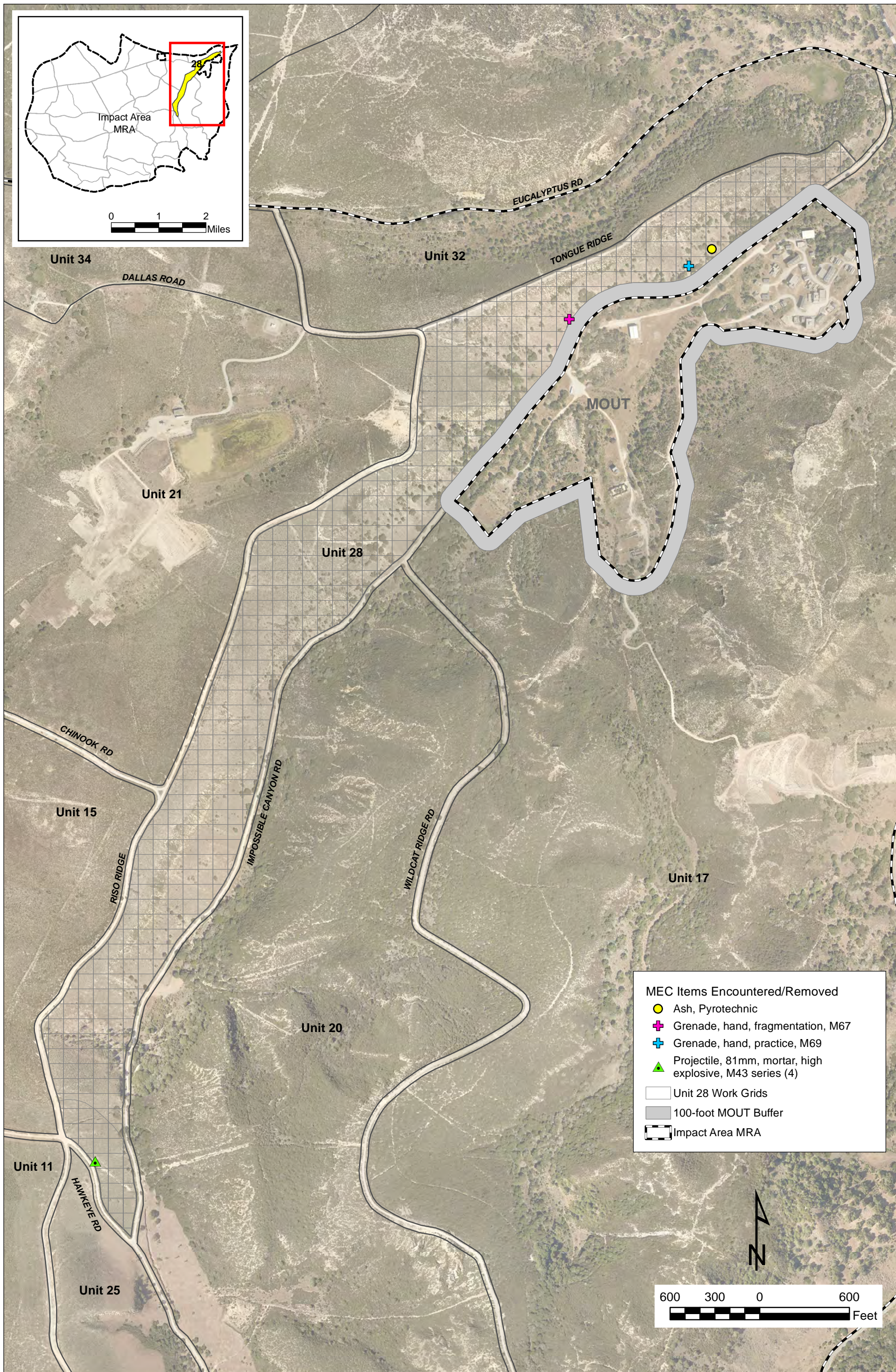
Figure 1
 Track 3 Impact Area MRA
 Regional Location Map



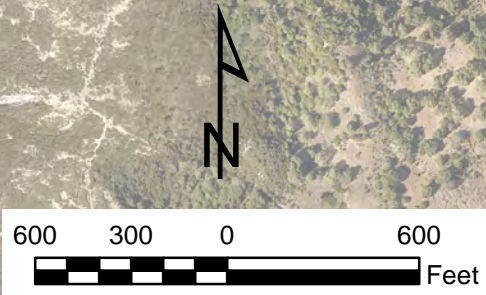


Remedial Action Report - Unit 28
 Munitions and Explosives of Concern (MEC) Removal
 Impact Area MRA
 Former Fort Ord, California

Figure 3
 Geophysical Data Map

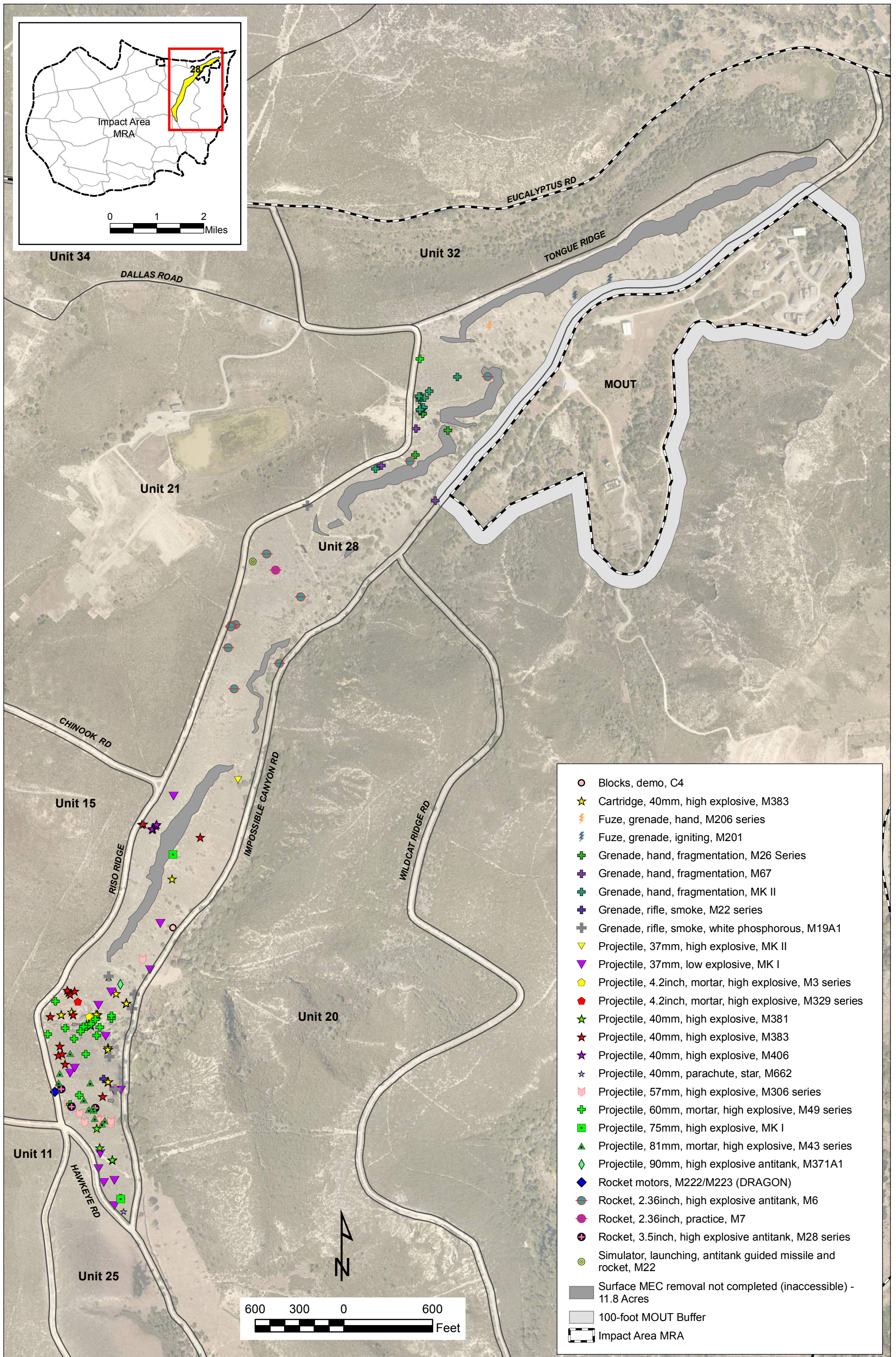


- MEC Items Encountered/Removed**
- Ash, Pyrotechnic
 - + Grenade, hand, fragmentation, M67
 - + Grenade, hand, practice, M69
 - ▲ Projectile, 81mm, mortar, high explosive, M43 series (4)
 - Unit 28 Work Grids
 - 100-foot MOUT Buffer
 - Impact Area MRA



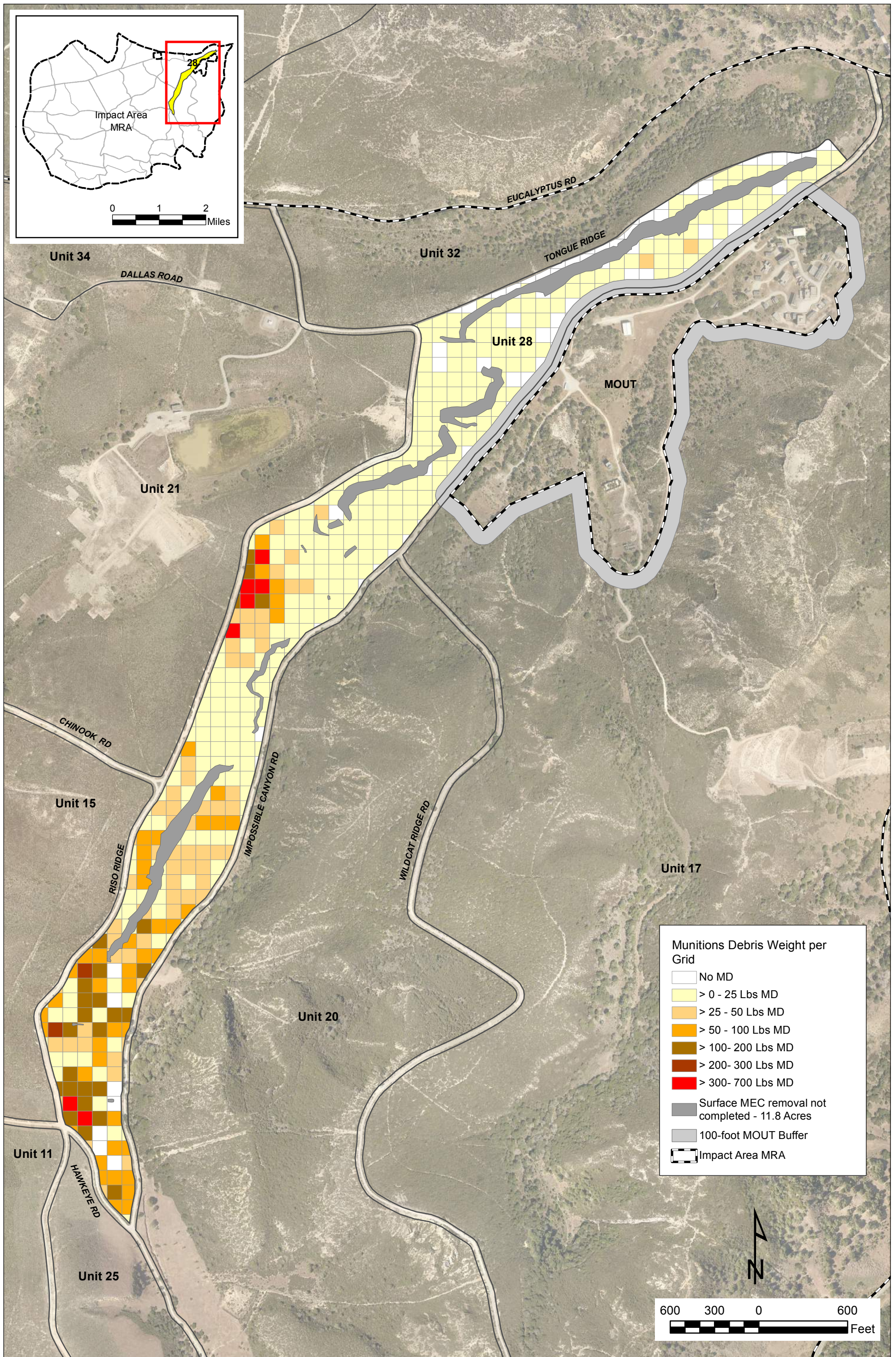
Remedial Action Report - Unit 28
Munitions and Explosives of Concern (MEC) Removal
Impact Area MRA
Former Fort Ord, California

Figure 4A
MEC Removed Prior to Remedial Action



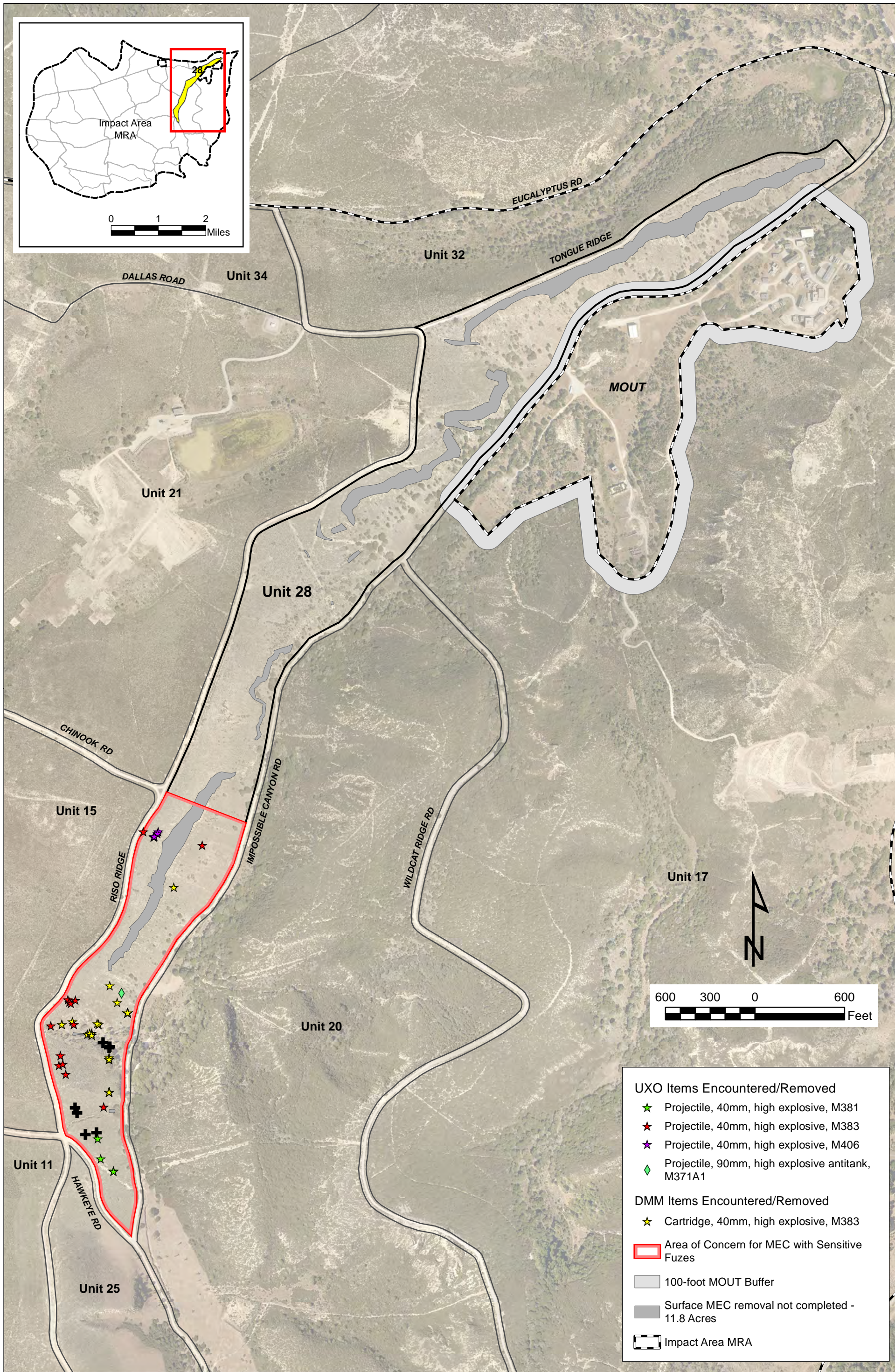
Remedial Action Report - Unit 28
 Munitions and Explosives of Concern (MEC) Removal
 Impact Area MRA
 Former Fort Ord, California

Figure 4B
 MEC Removed During Remedial Action



Remedial Action Report - Unit 28
 Munitions and Explosives of Concern (MEC) Removal
 Impact Area MRA
 Former Fort Ord, California

Figure 5
 Munitions Debris Removed

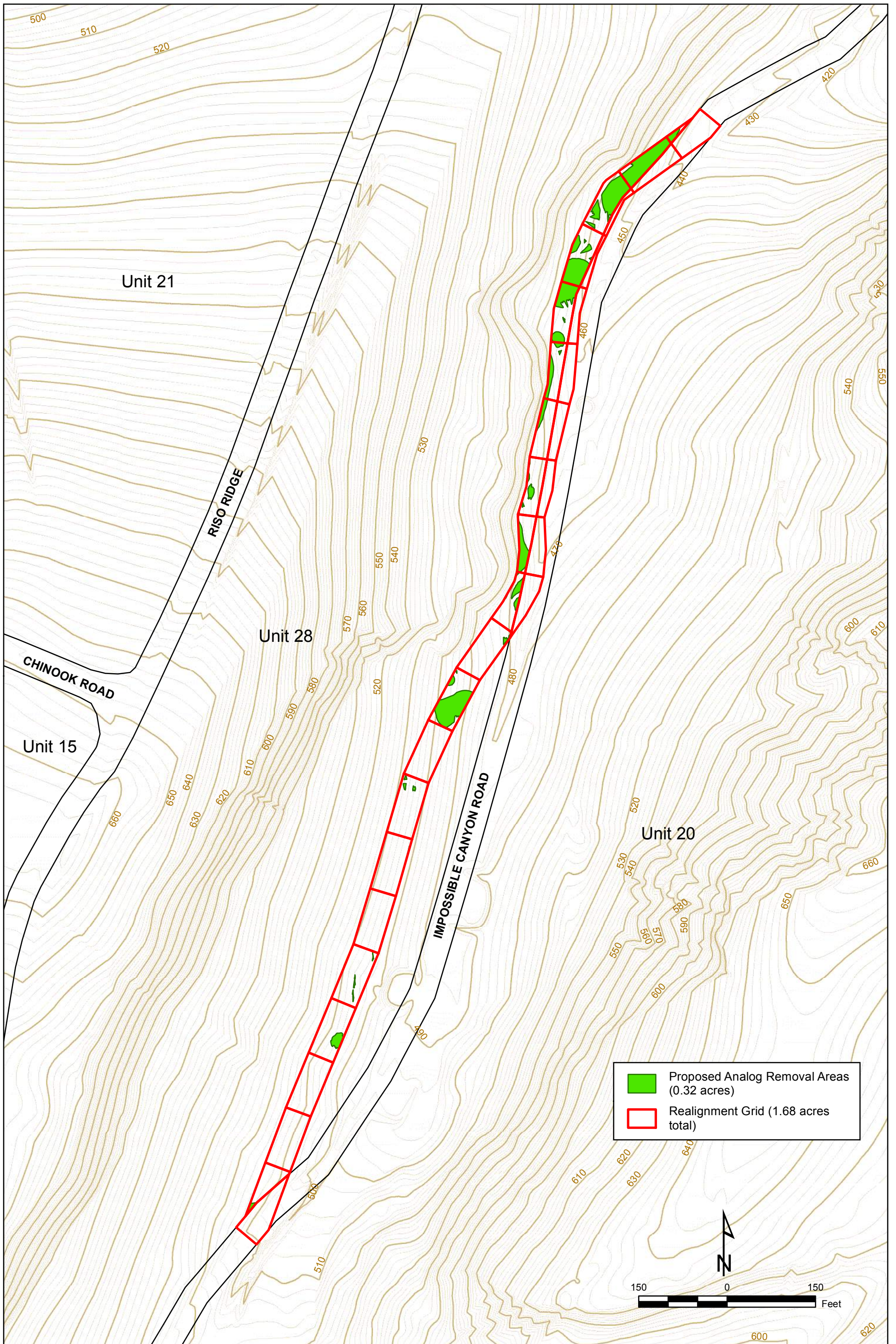


- UXO Items Encountered/Removed**
- ★ Projectile, 40mm, high explosive, M381
 - ★ Projectile, 40mm, high explosive, M383
 - ★ Projectile, 40mm, high explosive, M406
 - ◆ Projectile, 90mm, high explosive antitank, M371A1
- DMM Items Encountered/Removed**
- ★ Cartridge, 40mm, high explosive, M383
- ▭ Area of Concern for MEC with Sensitive Fuzes
 - ▭ 100-foot MOUT Buffer
 - ▭ Surface MEC removal not completed - 11.8 Acres
 - ▭ Impact Area MRA

Remedial Action Report - Unit 28
 Munitions and Explosives of Concern (MEC) Removal
 Impact Area MRA
 Former Fort Ord, California

Figure 6
 Location of MEC with Sensitive Fuze





Remedial Action Report - Unit 28
 Munitions and Explosives of Concern (MEC) Removal
 Impact Area MRA
 Former Fort Ord, California

Figure 7

Additional Work Areas
 Identified in the Tech Memo

Photographs



Photograph 1 - Range-Related Debris



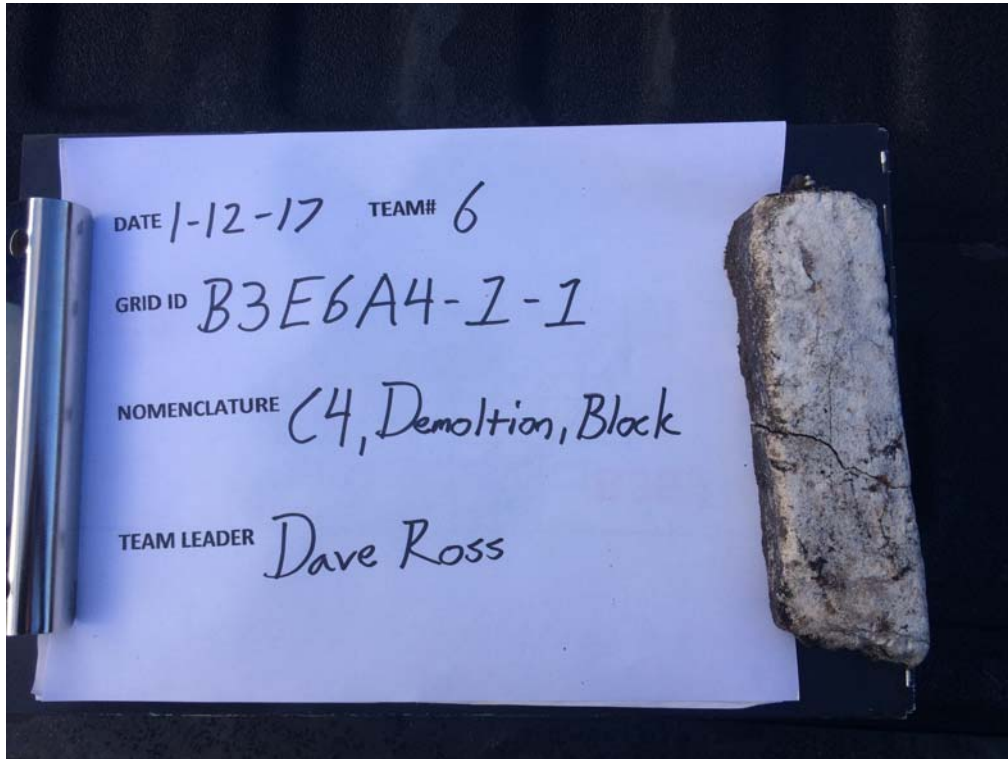
Photograph 2 - Surface MEC Removal



Photograph 3 - 37mm Projectile



Photograph 4 - 40mm M383 Cartridge



Photograph 5 - C4 Demolition Block



Photograph 6 - M26 Hand Grenade



Photograph 7 - MKII Hand Grenade



Photograph 8 - Munitions Debris Pile



Photograph 9 - Munitions Debris

Appendices

Appendix A

Field Work Variances



FIELD WORK VARIANCE

Project Name/Number	Fort Ord	WP	07
Applicable Document	Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, California (OE-0859B)	Date	August 17, 2017

Problem Description:

The *Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, California* (Kemron, 2016), specifies the following:

- Section 2.5.2, Manual and/or Mechanical Vegetation Removal: “Due to the presence of some extreme terrain as shown on Figure 6 (not shown), some areas may not have vegetation removed. The determination to not remove vegetation may result from either personnel safety issues or the potential for causing significant erosion problems.”
- Section 2.5.4, Technology-Aided Surface MEC Removal: “Due to the presence of some extreme terrain as shown on Figure 6 (not shown), some areas may not have technology-aided surface removal performed. The determination to not conduct technology-aided surface removal may result from personnel safety issues. Areas where technology-aided surface removal is not conducted will be documented and evaluated during the TM process for the potential for MEC items to be present on the surface.”
- Section 2.5.5, DGM: “Following surface MEC removal, DGM survey will be conducted in accessible areas. Site conditions (e.g. difficult terrain) may prevent digital geophysical survey from being conducted in certain areas; these areas will be documented in the TM.”

Areas where vegetation removal was and was not completed are shown on [Figure 1](#). Approximately 12 acres of Unit 28 ([Figure 2](#)) has been determined by UXO safety personnel to be inaccessible to surface MEC removal due to extreme terrain. Approximately 39 acres of Unit 28 ([Figure 3](#)) has been determined by UXO safety personnel to be inaccessible to DGM survey due to extreme terrain. [Figure 4](#) shows areas where vegetation removal was not completed overlain with areas where surface MEC removal was not completed due to extreme terrain.

Recommended solution:

Document these areas in the TM. Conduct an evaluation in the TM based on the results of the surface MEC removal and DGM data to determine the likelihood of surface MEC remaining in the 12 acres shown on [Figure 2](#).

Impact on present and completed work:

No impact on present and completed work.

Recommended solution/disposition:

Incorporate this FWV as an appendix to the existing Final Work Plan.

Clarification Minor Change Major Change

Affects Budget Yes No

Affects Schedule Yes No

Signature [Handwritten Signature] Date 8/17/17
Task Manager

Signature [Handwritten Signature] Date 8/17/17
SUXOS

Signature [Handwritten Signature] Date 8/17/17
Project Manager

Signature [Handwritten Signature] Date 8-17-17
CQCSCM

Signature [Handwritten Signature] Date 8/17/17
Deputy Project Manager

Signature [Handwritten Signature] Date 8-17-17
UXOQCS

for Erin Carnuso

USACE Approval: If Major Change:

Signature [Handwritten Signature] Date 17 AUG 2017
OE Safety Specialist

Signature [Handwritten Signature] Date 17 AUG 2017
EISEN.DAVID.E.1231985146
1985146
USACE COR
or TM

Signature [Handwritten Signature] Date _____
LINDSAY.KYLE.M.1529297226
YLE.M.1529297226
USACE Project
Geophysicist

Digitally signed by LINDSAY.KYLE.M.1529297226
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=LINDSAY.KYLE.M.1529297226
Date: 2017.09.11 22:09:45 -0700

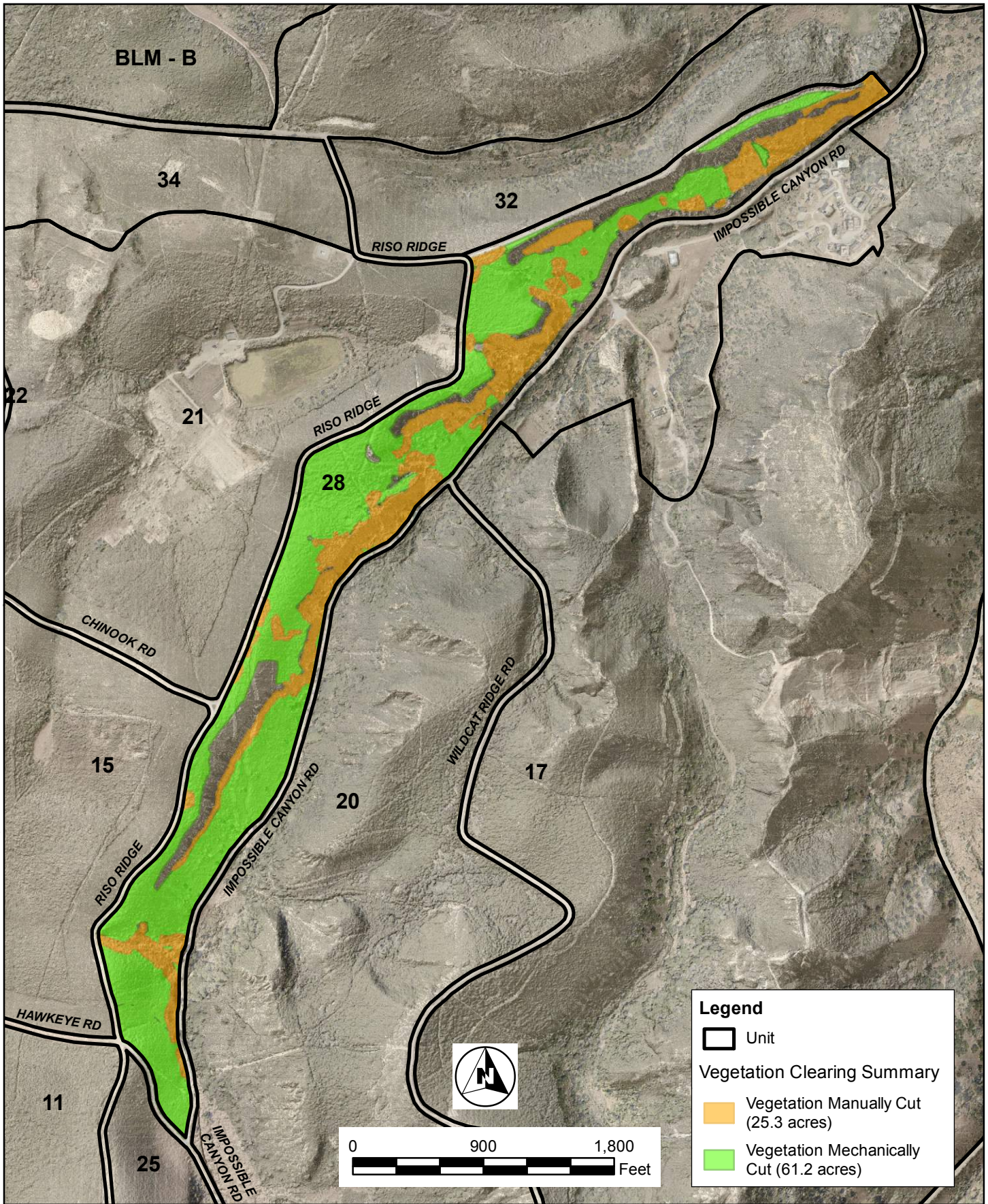
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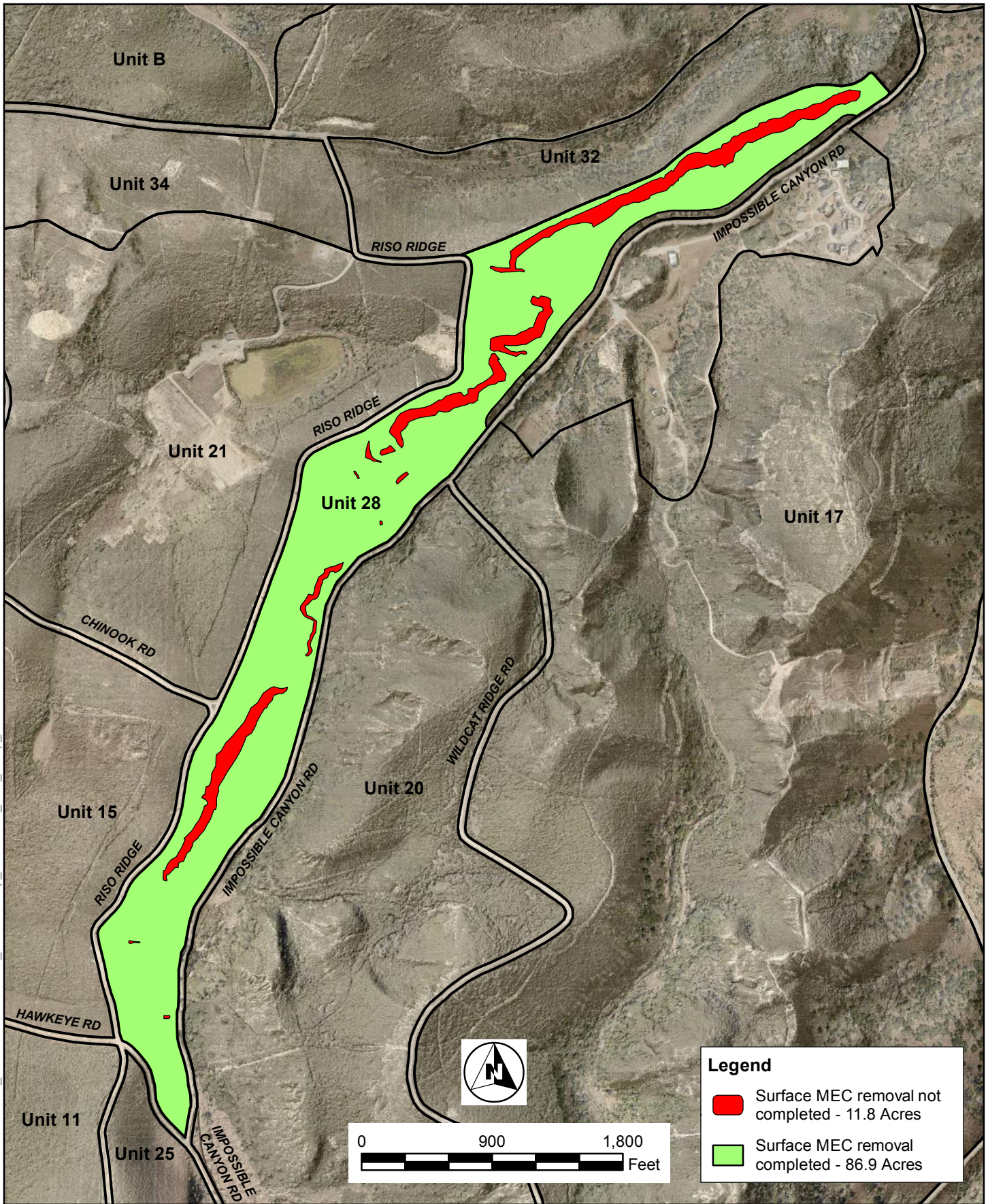
Distribution List: FWV 010, Final Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM
Unit 28, Former Fort Ord, California

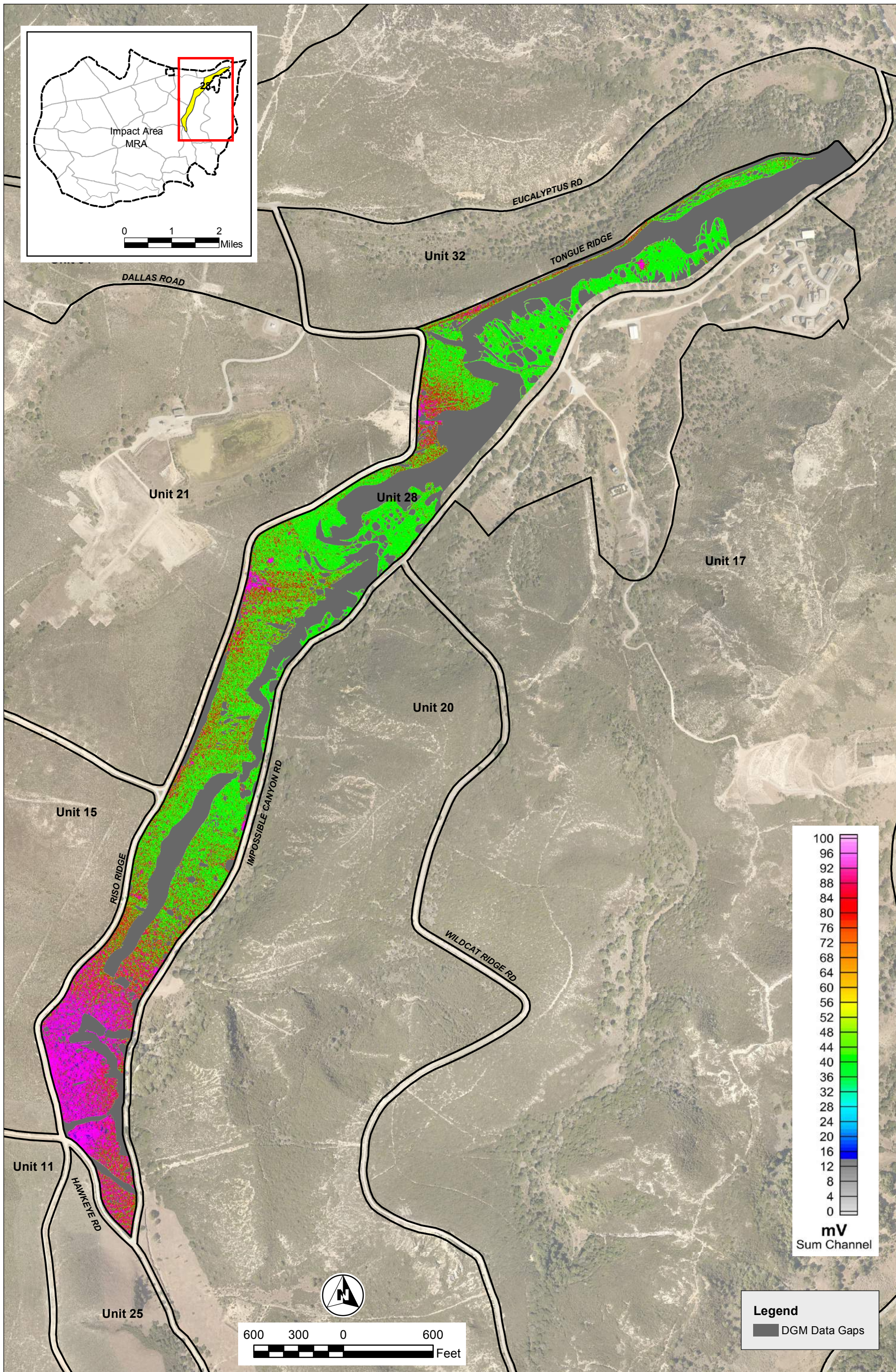
Email	Paper/CD	Name	Organization	Address	City, State	Zip
1		Mr. Duane Balch	Department of the Army USACE	1325 J Street	Sacramento, CA	95814
1		Mr. Michael Wheeler	Department of the Army USACE	1325 J Street	Sacramento, CA	95814
1		Mr. John Jackson	Department of the Army USACE	1325 J Street	Sacramento, CA	95814
1		Mr. Kyle Lindsay	Department of the Army USACE	1325 J Street	Sacramento, CA	95814
1		Mr. Therman Franks	Department of the Army USACE	4101 Jefferson Plaza NE	Albuquerque, NM	87109
1		Mr. David Eisen	Department of the Army USACE	4463 Gigling Road	Seaside, CA	93955
1		Mr. James Britt	Department of the Army USACE	4463 Gigling Road	Seaside, CA	93955
1		Mr. William Collins	Department of the Army, Fort Ord BRAC	4463 Gigling Road	Seaside, CA	93955
1		Ms. Natalie Gordon	Chenega Corporation	4463 Gigling Road	Seaside, CA	93955
1		Ms. Chieko Nozaki	Chenega Corporation	4463 Gigling Road	Seaside, CA	93955
1		Mr. Eric Morgan	Bureau of Land Management, Fort Ord National Monument	940 2 nd Avenue	Marina, CA	93933
1		Ms. Maeve Clancy	U.S. Environmental Protection Agency, Region IX	75 Hawthorne Street, Mail SFD-8-3	San Francisco, CA	94105
1		Mr. Tom Hall	Tech Law, Inc.	7 Shore Point	North Little Rock, AR	72116
1		Mr. Robert Young	Tech Law, Inc.	235 Montgomery Street, Suite 717	San Francisco, CA	94104
1		Mr. Vlado Arsov	California Department of Toxic Substances Control (DTSC)	8800 California Center Drive	Sacramento, CA	95826
1		Mr. Steve Crane	KEMRON Environmental Services	4522 Joe Lloyd Way	Monterey, CA	93944
1	1	Ms. Audrey Johnson	KEMRON Environmental Services	4522 Joe Lloyd Way	Monterey, CA	93944
	1	Mr. Mike Weaver	Fort Ord Community Advisory Group (FOCAG)	52 Corral De Tierra Road	Salinas, CA	93908
	1	Ms. LeVonne Stone	Fort Ord Environmental Justice Network (FOEJN)	P.O. Box 361	Marina, CA	93933
1	1	Admin Record	Fort Ord BRAC	4463 Gigling Road	Seaside, CA	93955

Approved:

David Eisen
USACE Project Manager





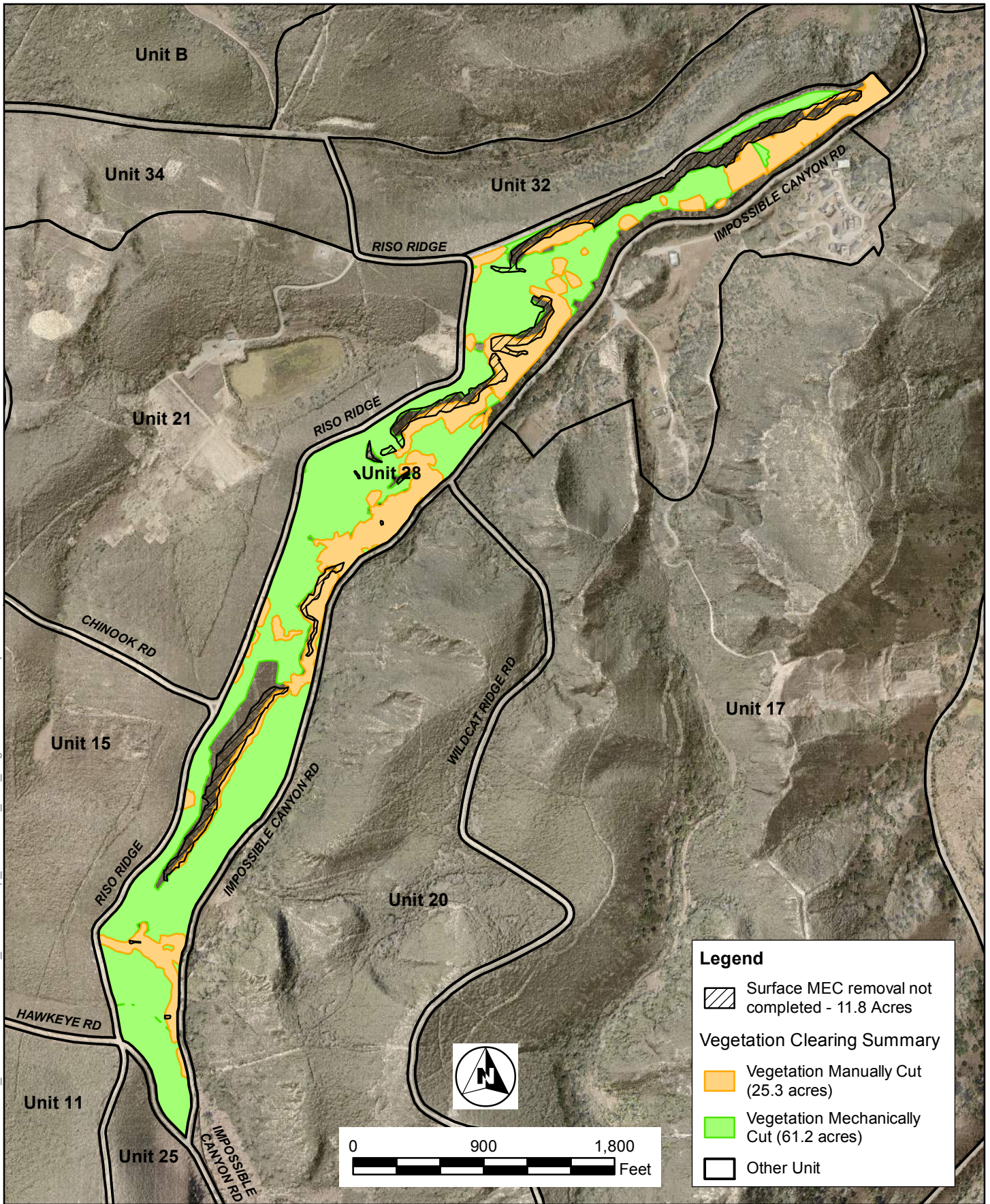


KEMRON
ENVIRONMENTAL SERVICES

Gilbane

Former Fort Ord
Impact Area MRA MEC Removal

Figure 3
DGM Data Map
Unit 28 - FWV 010



Appendix B

DD Form 1348-1A

(MD and Metal Debris Documentation)

**INERT / DEMILITARIZATION / CHAIN OF CUSTODY CERTIFICATION
FOR NON-HAZARDOUS AEDA / RANGE RESIDUE SCRAP**

Load No. 5

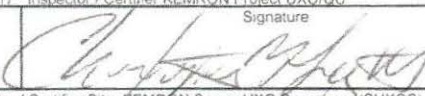
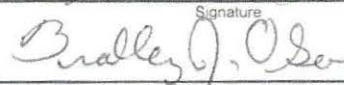
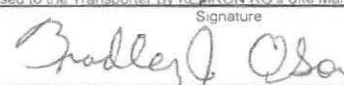
GENERAL

1. Releasing Generators (RG) Name and Mailing Address KEMRON Environmental Services 4522 Joe Lloyd Way, Monterey, CA 93944	1a. RG's Phone No. 831-905-9960	2. RG's Site Manager Bradley J Olson
3. Releasing Generators (RG) Project Name and Location KEMRON Environmental Services 4522 Joe Lloyd Way, Monterey, CA 93944	3a. RG Project Phone No. 831-824-2311	4. RG's SUXOS Bradley J. Olson
5. Transporter Name and Mailing Address Magna Transport Solutions - Jakub Benebek 2704 W. Armitage Ave., Chicago, IL 60647, Suite 1	5a. Transporter Phone No. 312-724-5874	6. Dispatcher Name Jakub Benebek


RELEASING GENERATOR

7. Processor / Recycler / Demilitarization - Qualified Recycler Demil Metals, Inc. 601 N. Skokie Blvd., #207, Northbrook, IL 60062	7a. QR Phone 847-929-9650	8. QRQC's Manager Mike Schaffer									
9. Box No. 1UYVS253X7P224233	10. Seal No.'s <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 33%;">162138</td><td style="width: 33%;">N/A</td><td style="width: 33%;">N/A</td></tr> <tr><td>N/A</td><td>N/A</td><td>N/A</td></tr> <tr><td>N/A</td><td>N/A</td><td>N/A</td></tr> </table>	162138	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11. Gross Weight 40,640
162138	N/A	N/A									
N/A	N/A	N/A									
N/A	N/A	N/A									
14. Description 22 Gaylord Boxes containing mixed steel	15. Material Type Munitions Debris, Inert - Mixed Steel (Expended)	12. Tare Weight _____ 13. Net Weight _____ 16. Units (Wt., Volume) _____									

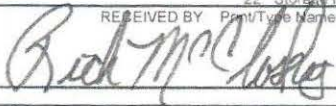
Inert Certification: "I CERTIFY AND VERIFY THAT THE AEDA RESIDUE, RANGE RESIDUE AND/OR EXPLOSIVE CONTAMINATED PROPERTY LISTED HAS BEEN 100 PERCENT INSPECTED BY ME AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, ARE INERT AND/OR FREE OF EXPLOSIVES OR OTHER DANGEROUS MATERIALS"

17. Inspector / Certifier KEMRON Project UXO/QC Print/Type Name: Christopher Light	Signature: 	Month/Day/Year: 12/1/16
18. Inspector / Certifier Site KEMRON Senior UXO Supervisor (SUXOS) Print/Type Name: Bradley J. Olson	Signature: 	Month/Day/Year: 12/1/16
19. Material Released to the Transporter By KEMRON RG's Site Manager RELEASED BY: Print/Type Name: Bradley J Olson	Signature: 	Month/Day/Year: 12/1/16

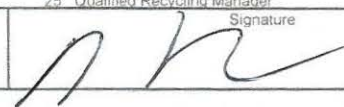
TRANSPORTEE

20. Transporter I ACKNOWLEDGE THE RECEIPT OF MATERIAL (Receiving Signature Verifies that Seals are Intact) RECEIVED BY: Print/Type Name / Company: MESSILLA VALLEY LEPPAMSHINE	Signature: 	Month/Day/Year: 12, 1, 16
21. Material Released to DEMIL Metals By Transporter RELEASED BY: Print/Type Name / Company: _____	Signature: _____	Month/Day/Year: ____/____/____

RECEIVING PROCESSOR - RECYCLER


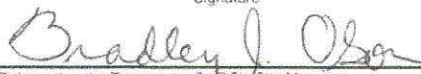
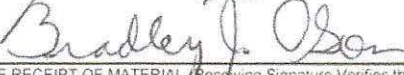



22. Storage Manager I ACKNOWLEDGE THE RECEIPT OF MATERIAL (Receiving Signature Verifies that Seals are Intact) RECEIVED BY: Print/Type Name / Company: 	Signature: Rick McCloskey	Month/Day/Year: 12, 5, 16
23. Material Released CRRRT to new CRRRT (if needed) RELEASED BY: Print/Type Name: _____	Signature: _____	Month/Day/Year: ____/____/____
24. Current CRRRT I ACKNOWLEDGE THE RECEIPT OF MATERIAL RECEIVED BY: Print/Type Name: _____	Signature: _____	Month/Day/Year: ____/____/____

Demilitarization / Destruction Certification: "I CERTIFY THAT EACH ITEM OR ITEMS LISTED HEREON WERE DEMILITARIZED / DESTROYED, SO AS TO NO LONGER RESEMBLE AEDA / ORDNANCE, BEYOND THE REQUIREMENTS LISTED IN DoD 4160.21-M-1."

25. Qualified Recycling Manager Print/Type Name: Mike Saldan	Signature: 	Month/Day/Year: 12, 12, 16
---	--	----------------------------

26. List Discrepancy Indication Here

		INERT / DEMILITARIZATION / CHAIN OF CUSTODY CERTIFICATION FOR NON-HAZARDOUS AEDA / RANGE RESIDUE SCRAP			Trailer Load No.
GENERAL	1. Releasing Generators (RG) Name and Mailing Address KEMRON Environmental Services 4522 Joe Lloyd Way, Monterey, CA 93944		1a. RG's Phone No. 831.905.9960	2. RG's Site Manager Bradley J. Olson	
	3. Releasing Generators (RG) Project Name and Location KEMRON - Fort Ord MEC Removal and Soil Remediation 4522 Joe Lloyd Way, Monterey, CA 93944		3a. RG Project Phone No. 831-824-2311	4. RG's SUXOS Bradley J. Olson	
	5. Transporter Name and Mailing Address Magna Transport Solutions - Jakub Benbenek 2704 W. Armitage Ave., Chicago, IL 60647, Suite 1		5a. Transporter Phone No. 312-724-5874	6. Dispatcher Name Jakub Benbenek	
RELEASING GENERATOR	7. Processor / Recycler / Demilitarization - Qualified Recycler Demil Metals, Inc. 601 N. Skokie Blvd., #207, Northbrook, IL 60062		7a. QR Phone 847-929-9650	8. QRQC's Manager Mike Schaffer	
	9. Trailer No. 1GRAP0621GJ654847	10. Seal No.'s #162132 N/A N/A	11. Gross Weight	12. Tare Weight	13. Net Weight 40,640 LBS.
	14. Description 22 Gaylord Boxes containing mixed steel.		15. Material Type Munitions Debris, Inert - Mixed steel. (Expended)		16. Units (Wt. Volume) 40,640 LBS.
	Inert Certification: "I CERTIFY AND VERIFY THAT THE AEDA RESIDUE, RANGE RESIDUE AND/OR EXPLOSIVE CONTAMINATED PROPERTY LISTED HAS BEEN 100 PERCENT INSPECTED BY ME AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, ARE INERT AND/OR FREE OF EXPLOSIVES OR OTHER DANGEROUS MATERIALS"				
	17. Inspector / Certifier Project UXO/QC Print/Type Name Bruce McClain		Signature 		Month/Day/Year 8/9/2016
18. Inspector / Certifier Site Senior UXO Supervisor (SUXOS) Print/Type Name Bradley J. Olson		Signature 		Month/Day/Year 8/9/2016	
19. Material Released to the Transporter By RG's Site Manager RELEASED BY: Print/Type Name Bradley J. Olson		Signature 		Month/Day/Year 8/9/2016	
TRANSPORTER	20. Transporter I ACKNOWLEDGE THE RECEIPT OF MATERIAL (Receiving Signature Verifies that Seals are Intact) RECEIVED BY: Print/Type Name / Company Jose L. Rosales		Signature 		Month/Day/Year 8 / 11 / 16
	21. Material Released to FACT CRRRT By Transporter RELEASED BY: Print/Type Name / Company		Signature		Month/Day/Year / /
RECEIVING PROCESSOR - RECYCLER	22. Storage Manager I ACKNOWLEDGE THE RECEIPT OF MATERIAL (Receiving Signature Verifies that Seals are Intact) RECEIVED BY: Print/Type Name / Company Rick McClosky		Signature 		Month/Day/Year 8 / 15 / 16
	23. Material Released CRRRT to new CRRRT (if needed) RELEASED BY: Print/Type Name		Signature		Month/Day/Year / /
	24. Current CRRRT I ACKNOWLEDGE THE RECEIPT OF MATERIAL RECEIVED BY: Print/Type Name		Signature DEMIL METALS, INC P.O. BOX 126 GLENCOE, IL 60022		Month/Day/Year / /
	Demilitarization / Destruction Certification: "I CERTIFY THAT EACH ITEM OR ITEMS LISTED HEREON WERE DEMILITARIZED / DESTROYED, SO AS TO NO LONGER RESEMBLE AEDA / ORDNANCE, BEYOND THE REQUIREMENTS LISTED IN DoD 4160.21-M-1.				
25. Qualified Recycling Manager Print/Type Name Mike Schaffer		Signature 		Month/Day/Year 8 / 22 / 16	
26. List Discrepancy Indication Here					

		INERT / DEMILITARIZATION / CHAIN OF CUSTODY CERTIFICATION FOR NON-HAZARDOUS AEDA / RANGE RESIDUE SCRAP			Trailer Load No.	
GENERAL	1. Releasing Generators (RG) Name and Mailing Address KEMRON Environmental Services 4522 Joe Lloyd Way, Monterey, CA 93944		1a. RG's Phone No. 831.905.9960	2. RG's Site Manager Bradley J. Olson		
	3. Releasing Generators (RG) Project Name and Location KEMRON - Fort Ord MEC Removal and Soil Remediation 4522 Joe Lloyd Way, Monterey, CA 93944		3a. RG Project Phone No. 831-824-2311	4. RG's SUXOS Bradley J. Olson		
	5. Transporter Name and Mailing Address Magna Transport Solutions - Jakub Benebek 2704 W. Armitage Ave., Chicago, IL 60647, Suite 1		5a. Transporter Phone No. 312-724-5874	6. Dispatcher Name Jakub Benebek		
RELEASING GENERATOR	7. Processor / Recycler / Demilitarization - Qualified Recycler Demil Metals, Inc. 601 N. Skokie Blvd., #207, Northbrook, IL 60062		7a. QR Phone 847-929-9650	8. QRQC's Manager Mike Schaffer		
	9. Trailer No. 1GRAP0623GJ654624	10. Seal No.'s #162144 N/A N/A N/A N/A N/A		11. Gross Weight	12. Tare Weight	
					13. Net Weight 25,670 LBS.	
	14. Description 13 Gaylor Boxes containing mixed Aluminium. 4 ea 55 gal drums containing mixed small arms.		15. Material Type Munitions Debris, Inert - Mixed Aluminium.		16. Units (Wt., Volume) 25,670 LBS.	
	Inert Certification: "I CERTIFY AND VERIFY THAT THE AEDA RESIDUE, RANGE RESIDUE AND/OR EXPLOSIVE CONTAMINATED PROPERTY LISTED HAS BEEN 100 PERCENT INSPECTED BY ME AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, ARE INERT AND/OR FREE OF EXPLOSIVES OR OTHER DANGEROUS MATERIALS"					
17. Inspector / Certifier Project UXO/IOC		Print/Type Name Bruce McClain	Signature 	Month/Day/Year 1/24/2017		
18. Inspector / Certifier Site Senior UXO Supervisor (SUXOS)		Print/Type Name Bradley J. Olson	Signature 	Month/Day/Year 1/24/2017		
19. Material Released to the Transporter By RG's Site Manager		RELEASED BY: Print/Type Name Bradley J. Olson	Signature 	Month/Day/Year 1/24/2017		
20. Transporter I ACKNOWLEDGE THE RECEIPT OF MATERIAL (Receiving Signature Verifies that Seals are Intact)		RECEIVED BY: Print/Type Name / Company Jose Luna / M/T	Signature 	Month/Day/Year 1 / 24 / 17		
21. Material Released to FACT CRRRT By Transporter		RECEIVED BY: Print/Type Name / Company	Signature	Month/Day/Year 1 / 1 / 17		
22. Storage Manager I ACKNOWLEDGE THE RECEIPT OF MATERIAL (Receiving Signature Verifies that Seals are Intact)		RECEIVED BY: Print/Type Name / Company	Signature	Month/Day/Year 1 / 1 / 17		
23. Material Released CRRRT to new CRRRT (if needed)		RECEIVED BY: Print/Type Name Steve CADkin	Signature 	Month/Day/Year 1 / 30 / 17		
24. Current CRRRT I ACKNOWLEDGE THE RECEIPT OF MATERIAL		RECEIVED BY: Print/Type Name	Signature DEMIL METALS, INC	Month/Day/Year 1 / 1 / 17		
Demilitarization / Destruction Certification: "I CERTIFY THAT EACH ITEM OR ITEMS LISTED HEREON WERE DEMILITARIZED / DESTROYED, SO AS TO NO LONGER RESEMBLE AEDA / ORDNANCE, BEYOND THE REQUIREMENTS LISTED IN DoD 4160.21-M-1."						
25. Qualified Recycling Manager		Print/Type Name Mike Schaffer	Signature 	Month/Day/Year 1 / 31 / 17		
26. List Discrepancy Indication Here						

**INERT / DEMILITARIZATION / CHAIN OF CUSTODY CERTIFICATION
FOR NON-HAZARDOUS AEDA / RANGE RESIDUE SCRAP**

Trailer Load No.

6

GENERAL

1. Releasing Generators (RG) Name and Mailing Address KEMRON Environmental Services 4522 Joe Lloyd Way, Monterey, CA 93944		1a. RG's Phone No. 831.905.9960	2. RG's Site Manager Bradley J. Olson
3. Releasing Generators (RG) Project Name and Location KEMRON - Fort Ord MEC Removal and Soil Remediation 4522 Joe Lloyd Way, Monterey, CA 93944		3a. RG Project Phone No. 831-824-2311	4. RG's SUXOS Bradley J. Olson
5. Transporter Name and Mailing Address Magna Transport Solutions - Jakub Benbenek 2704 W. Armitage Ave., Chicago, IL 60647, Suite 1		5a. Transporter Phone No. 312-724-5874	6. Dispatcher Name Jakub Benbenek

RELEASING GENERATOR

7. Processor / Recycler / Demilitarization - Qualified Recycler Demil Metals, Inc. 601 N. Skokie Blvd., #207, Northbrook, IL 60062		7a. QR Phone 847-929-9650	8. QRC's Manager Mike Schaffer		
9. Trailer No. 1JV532W27L973536	10. Seal No.'s		11. Gross Weight	12. Tare Weight	13. Net Weight 40,690 LBS.
	#162148	N/A			
	N/A	N/A			
14. Description 22 Gaylord Boxes containing mixed steel.		15. Material Type Munitions Debris, Inert - Mixed steel. (Expended)		16. Units (Wt., Volume) 40,690 LBS.	

Inert Certification: "I CERTIFY AND VERIFY THAT THE AEDA RESIDUE, RANGE RESIDUE AND/OR EXPLOSIVE CONTAMINATED PROPERTY LISTED HAS BEEN 100 PERCENT INSPECTED BY ME AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, ARE INERT AND/OR FREE OF EXPLOSIVES OR OTHER DANGEROUS MATERIALS"

17. Inspector / Certifier Project UXO/QC	
Print/Type Name Bruce McClain	Signature <i>Bruce McClain</i>
Month/Day/Year 12/20/2016	
18. Inspector / Certifier Site, Senior UXO Supervisor (SUXOS)	
Print/Type Name Bradley J. Olson	Signature <i>Bradley J. Olson</i>
Month/Day/Year 12/20/2016	
19. Material Released to the Transporter By RG's Site Manager	
RELEASED BY: Print/Type Name Bradley J. Olson	Signature <i>Bradley J. Olson</i>
Month/Day/Year 12/20/2016	

TRANSPORTEER

20. Transporter: I ACKNOWLEDGE THE RECEIPT OF MATERIAL (Receiving Signature Verifies that Seals are Intact)	
RECEIVED BY: Print/Type Name / Company TERRY DUNLAP / mtr	Signature <i>Terry Dunlap</i>
Month/Day/Year 12 / 21 / 16	
21. Material Released to FACT CRRRT By Transporter	
RELEASED BY: Print/Type Name / Company	Signature
Month/Day/Year 1 / 1	

RECEIVING PROCESSOR - RECYCLER

22. Storage Manager: I ACKNOWLEDGE THE RECEIPT OF MATERIAL (Receiving Signature Verifies that Seals are Intact)	
RECEIVED BY: Print/Type Name / Company	Signature
Month/Day/Year 1 / 1	
23. Material Released CRRRT to new CRRRT (if needed)	
RELEASED BY: Print/Type Name Jason Spears	Signature <i>Jason Spears</i>
Month/Day/Year 1, 2, 17	
24. Current CRRRT: I ACKNOWLEDGE THE RECEIPT OF MATERIAL	
RECEIVED BY: Print/Type Name	Signature
Month/Day/Year 1 / 1	

Demilitarization / Destruction Certification: "I CERTIFY THAT EACH ITEM OR ITEMS LISTED HEREON WERE DEMILITARIZED / DESTROYED, SO AS TO NO LONGER RESEMBLE AEDA / ORDNANCE, BEYOND THE REQUIREMENTS LISTED IN DoD 4160.21-M-1.

25. Qualified Recycling Manager	
Print/Type Name Mike Schaffer	Signature <i>Mike Schaffer</i>
Month/Day/Year 1, 9, 17	

26. List Discrepancy Indication Here

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

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	1. TOTAL PRICE		2. SHIP FROM		3. SHIP TO	
C O O D E D													QUANTITY		SUPPLEMENTARY ADDRESS		SIGNATURE		PROJECT		REQUIREMENTS		ADVANCE		UNIT PRICE		DOLLARS		CTS		KEMRON; Fort Ord 4522 Joe Lloyd Way Monterey, CA 93944		Demil Metal, Inc. 601 N. Skokie Blvd #207, Northbrook, IL, 60062																						
EA 00001													SERIAL		DIS-TRIBU-TION		PRO-JECT		P R I		R E Q U I R E M E N T S		R I		D O C U M E N T		DOLLARS		CTS		4. MARK FOR																								
24. DOCUMENT NUMBER & SUFFIX (30-44)													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																						
25. NATIONAL STOCK NO. & ADD (8-22)													16. FREIGHT CLASSIFICATION NOMENCLATURE																																										
26. RIC (4-6) UL (23-24) QTY (25-26) CON CODE (71) DST (55-56) UP (74-80)													17. ITEM NOMENCLATURE Munitions Debris Inert -Mixed Steel																																										
27. ADDITIONAL DATA													18. TY CONT		19. NO CONT		20. TOTAL WEIGHT 40.640 lbs MD		21. TOTAL CUBE		22. RECEIVED GLENCOE, IL 60022 DEMIL METALS, INC P.O. BOX 128		23. DATE RECEIVED 12-1-16																																
TRL Vin 1UYVS253X7P224233VS2DX, 53 Ft. Box Body Trailer ; 22 GAYLORD Boxes; USACE/Fort Ord, CA/KEMRON/00024 Seal # 162138																																																							

This certifies that the material listed has been 100 percent properly inspected and, to the best of our knowledge and belief, is free of explosive hazards, engine fluids, illuminating dials and other visible liquid hazardous, toxic, and radioactive waste materials.

Certified By: Brad Olson

Senior UXO Supervisor - KEMRON
MEC Removal and Soil Remediation Project
Fort Ord, CA Phone 831-905-9960

Verified By: Shawn Meek

OESS
USACE - Sacramento
Fort Ord, CA Phone 831-824-2324

PREVIOUS EDITION MAY BE USED

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

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	1. TOTAL PRICE		2. SHIP FROM		3. SHIP TO	
EA00001														UNIT PRICE		DOLLARS		CTS		KEMRON, Fort Ord 4522 Joe Lloyd Way Monterey, CA 93944		Demil Metal, Inc. 601 N Skokie Blvd #207, Northbrook, IL 60062																																	
24. DOCUMENT NUMBER & SUFFIX (30-44)		26. NATIONAL STOCK NO. & ADD. (8-22)		26. RIC (4-6) LIJ (23-24) QTY (25-26) CON CODE (71) DIST (65-68) LUP (74-80)		5. DOC DATE		6. NMFC		7. FRT RATE		8. TYPE CARGO		9. PS																																									
27. ADDITIONAL DATA		TRL Vin 1GRAP0621GJ654847, 53 Ft. Box Body Trailer ; 22 GAYLORD Boxes; USACE/Fort Ord, CA/KEMRON/00023 Seal # 162132				10. QTY. RECD		11. UP		12. UNIT WEIGHT		13. UNIT CUBE		14. UFC		15. SL																																							
16. FREIGHT CLASSIFICATION NOMENCLATURE																17. ITEM NOMENCLATURE Munitions Debris Inert -Mixed Steel																																							
18. TY CONT				19. NO CONT				20. TOTAL WEIGHT 40.640 lbs MD				21. TOTAL CUBE																																											
22. RECEIVED BY <i>Demil Metals, Inc</i> P.O. BOX 126 GLENCOE, IL 60022												23. DATE RECEIVED 8/11/16																																											

PREVIOUS EDITION MAY BE USED

This certifies that the material listed has been 100 percent properly inspected and, to the best of our knowledge and belief, is free of explosive hazards, engine fluids, illuminating dials and other visible liquid hazardous, toxic, and radioactive waste materials.

Certified By: *Bradley J. Olson*
Brad Olson
Senior UXO Supervisor - KEMRON
MEC Removal and Soil Remediation Project
Fort Ord, CA Phone 831-905-9960

Verified By: *Shawn Meek*
Shawn Meek
OESS
USACE - Sacramento

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	1. TOTAL PRICE	2. SHIP FROM	3. SHIP TO
QUANTITY													SUPPLEMENTARY ADDRESS													UNIT PRICE		DOLLARS		CTS		KEMRON, Fort Ord 4522 Joe Lloyd Way Monterey, CA 93944		Demil Metal, Inc. 601 N. Skokie Blvd #207, Northbrook, IL 60062																		
EA00001																										DOLLARS		CTS						4. MARK FOR:																		
																										5. DOC DATE		6. NMFC		7. FRT RATE		8. TYPE CARGO		9. PS																		
																										10. QTY. RECD		11. UP		12. UNIT WEIGHT		13. UNIT CUBE		14. UFC		15. SL																
																										16. FREIGHT CLASSIFICATION NOMENCLATURE																										
																										17. ITEM NOMENCLATURE Munitions Debris Inert -Mixed Aluminum																										
																										18. TY CONT		19. NO CONT		20. TOTAL WEIGHT		21. TOTAL CUBE																				
																												DEMIL METALS, INC																								
																										22. RECEIVED BY		P.O. BOX 126		23. DATE RECEIVED																						
																												GLENCOE, IL 60022		1-24-17																						

PREVIOUS EDITION MAY BE USED

24. DOCUMENT NUMBER & SUFFIX (30-44):
25. NATIONAL STOCK NO. & ADD (16-22):
26. RIC (4-6):
27. UIC (3-24):
28. QTY (25-29):
29. CON CODE (71):
30. DIST (55-56):
31. UP (74-80):

TRI, Vin IGRAP0623GJ654624, 53 Ft Box Body Trailer ; 13 GAYLORD Boxes; USACE/Fort Ord, CA/KEMRON/00026
Seal # 162144

This certifies that the material listed has been 100 percent properly inspected and, to the best of our knowledge and belief, is free of explosive hazards, engine fluids, illuminating dials and other visible liquid hazardous, toxic, and radioactive waste materials."

Certified By: *Bradley J. Olson*
Brad Olson
Senior UXO Supervisor - KEMRON
MEC Removal and Soil Remediation Project
Fort Ord, CA Phone 831-905-9960

Verified By: *James Britt*
James Britt
OESS
USACE - Sacramento
Fort Ord, CA Phone 831-824-2324

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

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	1. TOTAL PRICE	2. SHIP FROM	3. SHIP TO
UNIT PRICE							DOLLARS							CTS							KEMRON, Fort Ord 4522 Joe Lloyd Way Monterey, CA 93944							Demil Metal, Inc. 601 N. Skokie Blvd #207, Northbrook, IL 60062																								
DOLLARS							CTS							4 MARK FOR																																						
EA00001							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							Misc. Small Arms Ammunition																															
18. TY CONT							19. NO CONT							20. TOTAL WEIGHT							21. TOTAL CUBE																															
22. RECEIVED BY							jose lora							580 lbs MD DEMIL METALS, INC P.O. BOX 125 GLENCOE, IL 60022							23. DATE RECEIVED							12/24/97																								
24. DOCUMENT NUMBER & SUFFIX (30-44)							25. NATIONAL STOCK NO & ADD (8-22)							26. PIC (4-6) LI (23-24) QTY (25-26) CON CODE (71) DIST (55-56) UP (74-80)							27. ADDITIONAL DATA																															
							TRI, Vin IGRAP0623GJ654624, 53 Ft Box Body Trailer, No NSN, 55 Gal Drum #0001, USACE/Fort Ord, CA/KEMRON/0001							Seal #: 162115																																						
This certifies and verifies that the material listed has been 100 percent inspected and to the best of our knowledge and belief, contains only miscellaneous small arms ammunition 50 caliber and below related materials.							Certified By: <i>Bradley Olson</i> Senior UXO Supervisor - KEMRON MEC Removal and Soil Remediation Project Fort Ord, CA Phone 831-824-2311							Verified By: <i>James Britt</i> OESS USACE - Sacramento Phone 831-824-2324																																						

PREVIOUS EDITION MAY BE USED

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	1. TOTAL PRICE	2. SHIP FROM	3. SHIP TO																											
UNIT PRICE							DOLLARS							CTS							KEMRON: Fort Ord 4522 Joe Lloyd Way Monterey, CA 93944							Demil Metal, Inc. 601 N Skokie Blvd #207, Northbrook, IL 60062																																																			
DOLLARS							CTS							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 Misc. Small Arms Ammunition																																																																															
18. TY CONT							19. NO CONT							20. TOTAL WEIGHT 560 lbs MD							21. TOTAL CUBE																																																										
22. RECEIVED BY																																																																															
<p>24. DOCUMENT NUMBER & SUFFIX (30-44)</p> <p>25. NATIONAL STOCK NO. & ADD (8-22)</p> <p>26. RIC (4-6) UI (23-24) QTY (25-29) CON CODE (71) DIST (55-56) UP (74-80)</p> <p>TRI. Vin 1GRAP0623GJ654624, 53 Ft. Box Body, No NSN, 55 Gal Drum #0002; USACE/Fort Ord, CA/KEMRON/0002 Seal #: 162118</p> <p>27. ADDITIONAL DATA</p>																																																																															

PREVIOUS EDITION MAY BE USED

DEMIL METALS, INC
P.O. BOX 126-24-17
GLENCOE, IL 60022

This certifies and verifies that the material listed has been 100 percent inspected and to the best of our knowledge and belief, contains only miscellaneous small arms ammunition 50 caliber and below related materials.

Certified By: *Bradley J. Olson*
Bradley Olson
Senior UXO Supervisor - KEMRON
MEC Removal and Soil Remediation Project
Fort Ord, CA Phone 831-824-2311

Verified By: *James C. Britt*
James Britt
OESS
USACE - Sacramento
Phone 831-824-2324

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

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																		
EA00001														1. TOTAL PRICE														2. SHIP FROM KEMRON, Fort Ord 4522 Joe Lloyd Way Monterey, CA 93944														3. SHIP TO Demil Metal, Inc 601 N. Skokie Blvd #207, Northbrook, IL 60062																																									
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 Misc. Small Arms Ammunition																																																																																			
18. TY CONT														19. NO CONT														20. TOTAL WEIGHT 575 lbs SAA														21. TOTAL CUBE																																									
22. DATE RECEIVED														23. DATE RECEIVED 1-24-17																																																																					
26. RIC (4-6) U (28-34) QTY (26-29) CON CODE (71) DIST (95-98) UPI (74-80) 27. ADDITIONAL DATA TRL Vin 1GRAP0623GJ654624 .53 Fl. Box Body, No NSN, 55 Gal Drum #0003. USACE/Fort Ord, CA/KEMRON/0003 Seal # 162114 This certifies and verifies that the material listed has been 100 percent inspected and to the best of our knowledge and belief, contains only miscellaneous small arms ammunition 50 caliber and below related materials Certified By: <i>Bradley J. Olson</i> Senior UXO Supervisor - KEMRON MEC Removal and Soil Remediation Project Fort Ord, CA Phone 831-824-2311 Verified By: <i>James Britt</i> OESS USACE - Sacramento Phone 831-824-2324																																																																																			

DEMIL METALS, INC
 P.O. BOX 125
 MONROE, IL 60022

PREVIOUS EDITION MAY BE USED

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	1. TOTAL PRICE		2. SHIP FROM		3. SHIP TO	
DOC	RI	M	U	QUANTITY																					UNIT PRICE		DOLLARS		CTS		KEMRON; Fort Ord		Demil Metal, Inc.																						
FROM	S	I	N																						DOLLARS	CTS			4522 Joe Lloyd Way		601 N. Skokie Blvd																								
																													Monterey, CA 93944		#207, Northbrook, IL 60062																								
EA 00001																																												5. DOC DATE		6. NMFC		7. FRT RATE		8. TYPE CARGO		9. PS			
24. DOCUMENT NUMBER & SUFFIX (30-44)										10. QTY. REC'D		11. UP		12. UNIT WEIGHT		13. UNIT CUBE		14. UFC		15. SL																																			
25. NATIONAL STOCK NO. & ADD (8-22)										16. FREIGHT CLASSIFICATION NOMENCLATURE																																													
26. RIC (4-6) UI (23-24) QTY (25-29) CON CODE (71) DIST (55-56) UP (74-80)										17. ITEM NOMENCLATURE Munitions Debris Inert -Mixed Steel																																													
27. ADDITIONAL DATA										18. TY CONT		19. NO CONT		20. TOTAL WEIGHT		21. TOTAL CUBE																																							
														40,690 lbs MD																																									
										22. RECEIVED BY <i>Bradley J. Olson</i> DEMIL METALS, INC P.O. BOX 125 GLENCOE, IL 60022												23. DATE RECEIVED 12/21/18																																	
TRL Vin IJV532W27L973536, 53 Ft. Box Body Trailer ; 22 GAYLORD Boxes, USACE/Fort Ord, CA/KEMRON/00025 Seal # 162148																																																							

PREVIOUS EDITION MAY BE USED

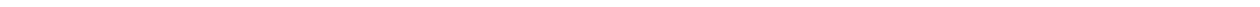
This certifies that the material listed has been 100 percent properly inspected and, to the best of our knowledge and belief, is free of explosive hazards, engine fluids, illuminating dials and other visible liquid hazardous, toxic, and radioactive waste materials."

Certified By: *Bradley J. Olson*
 Senior UXO Supervisor - KEMRON
 MEC Removal and Soil Remediation Project
 Fort Ord, CA Phone 831-905-9960

Verified By: *James C. Britt*
 James C. Britt
 OESS
 USACE - Sacramento
 Fort Ord, CA Phone 831-824-2324

Appendix C

Examples of DGM Data Forms



Grid Block Processing Report

Grid Block ID: Grids Collected: Date of Survey: Survey Instrument: Re-Survey?: Start Time: Team ID: QC Survey?: End Time: Unit ID: Percent Covered in QC Survey:

Processing Information

Processing Date: Processing Operator: Processed with Oasis montaj Geosoft Database Name: Lag Correction Performed? Lag Correction Value: Drift Correction Performed? Drift Correct Method: De-Spiking Performed? De-Spiking Info: Line Breaking Performed? Line Breaking Info: Data Coordinates Translated? Data Projection:

Processing Comments:

Sections of data without GPS RTK fix are DGPS and the positional data is useable. Numerous isolated responses found in data. Small areas of high response present. Numerous gaps found in data. Eastern gap runs along the boundary of dataset and is due to a gully and trees. Western gap runs along the boundary of dataset and is due to steep slopes and a trees. Tree and steep slope gaps found throughout data.

Data Package Files:

Header Added to Processed File?

B3G6A0.gdb, B3G6A0.map, B3G6A0.pdf, B3G6A0.ply, B3G6A0.tif, B3G6A0_AOI.ply, B3G6A0_Ch_Sum.grd, B3G6A0_Processed.XYZ, Gaps_B3G6A0.cpg, Gaps_B3G6A0.dbf, Gaps_B3G6A0.prj, Gaps_B3G6A0.shp, Gaps_B3G6A0.shp.GeosoftMeta, Gaps_B3G6A0.shx, B3G6A7.gdb, B3G6A7.map, B3G6A7.pdf, B3G6A7.ply, B3G6A7.tif, B3G6A7_AOI.ply, B3G6A7_Ch_Sum.grd, B3G6A7_Processed.XYZ, Gaps_B3G6A7.cpg, Gaps_B3G6A7.dbf, Gaps_B3G6A7.prj, Gaps_B3G6A7.shp, Gaps_B3G6A7.shp.GeosoftMeta, Gaps_B3G6A7.shx, B3G6A8.gdb, B3G6A8.map, B3G6A8.pdf, B3G6A8.ply, B3G6A8.tif, B3G6A8_AOI.ply, B3G6A8_Ch_Sum.grd, B3G6A8_Processed.XYZ, Gaps_B3G6A8.cpg, Gaps_B3G6A8.dbf, Gaps_B3G6A8.prj, Gaps_B3G6A8.shp, Gaps_B3G6A8.shp.GeosoftMeta, Gaps_B3G6A8.shx, B3G6A9.gdb, B3G6A9.map, B3G6A9.pdf, B3G6A9.ply, B3G6A9.tif, B3G6A9_AOI.ply, B3G6A9_Ch_Sum.grd, B3G6A9_Processed.XYZ, Gaps_B3G6A9.cpg, Gaps_B3G6A9.dbf, Gaps_B3G6A9.prj, Gaps_B3G6A9.shp, Gaps_B3G6A9.shp.GeosoftMeta, Gaps_B3G6A9.shx, B3G6B0.gdb, B3G6B0.map, B3G6B0.pdf, B3G6B0.ply, B3G6B0.tif, B3G6B0_AOI.ply, B3G6B0_Ch_Sum.grd, B3G6B0_Processed.XYZ, Gaps_B3G6B0.cpg, Gaps_B3G6B0.dbf, Gaps_B3G6B0.prj, Gaps_B3G6B0.shp, Gaps_B3G6B0.shp.GeosoftMeta, Gaps_B3G6B0.shx, B3G6B8.gdb, B3G6B8.map, B3G6B8.pdf, B3G6B8.ply, B3G6B8.tif, B3G6B8_AOI.ply, B3G6B8_Ch_Sum.grd, B3G6B8_Processed.XYZ, Gaps_B3G6B8.cpg, Gaps_B3G6B8.dbf, Gaps_B3G6B8.prj, Gaps_B3G6B8.shp, Gaps_B3G6B8.shp.GeosoftMeta, Gaps_B3G6B8.shx, B3G6B9.gdb, B3G6B9.map, B3G6B9.pdf, B3G6B9.ply, B3G6B9.tif, B3G6B9_AOI.ply, B3G6B9_Ch_Sum.grd, B3G6B9_Processed.XYZ, Gaps_B3G6B9.cpg, Gaps_B3G6B9.dbf, Gaps_B3G6B9.prj, Gaps_B3G6B9.shp, Gaps_B3G6B9.shp.GeosoftMeta, Gaps_B3G6B9.shx, B3G6C0.gdb, B3G6C0.map, B3G6C0.pdf, B3G6C0.ply, B3G6C0.tif, B3G6C0_AOI.ply, B3G6C0_Ch_Sum.grd, B3G6C0_Processed.XYZ, B3G6C8.gdb, B3G6C8.map, B3G6C8.pdf, B3G6C8.ply, B3G6C8.tif, B3G6C8_AOI.ply, B3G6C8_Ch_Sum.grd, B3G6C8_Processed.XYZ, Gaps_B3G6C8.cpg, Gaps_B3G6C8.dbf, Gaps_B3G6C8.prj, Gaps_B3G6C8.shp, Gaps_B3G6C8.shp.GeosoftMeta, Gaps_B3G6C8.shx, B3G6C9.gdb, B3G6C9.map, B3G6C9.pdf, B3G6C9.ply, B3G6C9.tif, B3G6C9_AOI.ply, B3G6C9_Ch_Sum.grd, B3G6C9_Processed.XYZ, Gaps_B3G6C9.cpg, Gaps_B3G6C9.dbf, Gaps_B3G6C9.prj, Gaps_B3G6C9.shp, Gaps_B3G6C9.shp.GeosoftMeta, Gaps_B3G6C9.shx, B3G7A1.gdb, B3G7A1.map, B3G7A1.pdf, B3G7A1.ply, B3G7A1.tif, B3G7A1_AOI.ply, B3G7A1_Ch_Sum.grd, B3G7A1_Processed.XYZ, Gaps_B3G7A1.cpg, Gaps_B3G7A1.dbf, Gaps_B3G7A1.prj, Gaps_B3G7A1.shp, Gaps_B3G7A1.shp.GeosoftMeta, Gaps_B3G7A1.shx, B3G7A2.gdb, B3G7A2.map, B3G7A2.pdf, B3G7A2.ply, B3G7A2.tif, B3G7A2_AOI.ply, B3G7A2_Ch_Sum.grd, B3G7A2_Processed.XYZ, Gaps_B3G7A2.cpg, Gaps_B3G7A2.dbf, Gaps_B3G7A2.prj, Gaps_B3G7A2.shp, Gaps_B3G7A2.shp.GeosoftMeta, Gaps_B3G7A2.shx, B3G7B1.gdb, B3G7B1.map, B3G7B1.pdf, B3G7B1.ply, B3G7B1.tif, B3G7B1_AOI.ply, B3G7B1_Ch_Sum.grd, B3G7B1_Processed.XYZ, Gaps_B3G7B1.cpg, Gaps_B3G7B1.dbf, Gaps_B3G7B1.prj, Gaps_B3G7B1.shp, Gaps_B3G7B1.shp.GeosoftMeta, Gaps_B3G7B1.shx,

B3G7B2.gdb, B3G7B2.map, B3G7B2.pdf, B3G7B2.ply, B3G7B2.tif, B3G7B2_AOI.ply, B3G7B2_Ch_Sum.grd, B3G7B2_Processed.XYZ, Gaps_B3G7B2.cpg, Gaps_B3G7B2.dbf, Gaps_B3G7B2.prj, Gaps_B3G7B2.shp, Gaps_B3G7B2.shp.GeosoftMeta, Gaps_B3G7B2.shx, B3G7B3.gdb, B3G7B3.map, B3G7B3.pdf, B3G7B3.ply, B3G7B3.tif, B3G7B3_AOI.ply, B3G7B3_Ch_Sum.grd, B3G7B3_Processed.XYZ, Gaps_B3G7B3.cpg, Gaps_B3G7B3.dbf, Gaps_B3G7B3.prj, Gaps_B3G7B3.shp, Gaps_B3G7B3.shp.GeosoftMeta, Gaps_B3G7B3.shx, B3G7C1.gdb, B3G7C1.map, B3G7C1.pdf, B3G7C1.ply, B3G7C1.tif, B3G7C1_AOI.ply, B3G7C1_Ch_Sum.grd, B3G7C1_Processed.XYZ, B3G7C2.gdb, B3G7C2.map, B3G7C2.pdf, B3G7C2.ply, B3G7C2.tif, B3G7C2_AOI.ply, B3G7C2_Ch_Sum.grd, B3G7C2_Processed.XYZ, Gaps_B3G7C2.cpg, Gaps_B3G7C2.dbf, Gaps_B3G7C2.prj, Gaps_B3G7C2.shp, Gaps_B3G7C2.shp.GeosoftMeta, Gaps_B3G7C2.shx, B3G7C3.gdb, B3G7C3.map, B3G7C3.pdf, B3G7C3.ply, B3G7C3.tif, B3G7C3_AOI.ply, B3G7C3_Ch_Sum.grd, B3G7C3_Processed.XYZ, Gaps_B3G7C3.cpg, Gaps_B3G7C3.dbf, Gaps_B3G7C3.prj, Gaps_B3G7C3.shp, Gaps_B3G7C3.shp.GeosoftMeta, Gaps_B3G7C3.shx

Measurement Performance Criteria

Coverage: Category:	Cat B TA									
Lane Spacing (ft):	3	Requirement (%)	98	% at Lane Spacing:	99.88	Status: Pass				
Design Spacing (ft)	2	Requirement (%)	95	% at Project Design Spacing:	97.76	Status: Pass				
Along Track Sampling:	98	% <=	0.65	ft	Mean :	0.17	ft	% within Tolerance:	100	Status: Pass
Velocity:	95	% not to exceed	4	mph	Mean:	2.02	mph	% within Tolerance:	99.99	Status: Pass
GPS Quality:	Percent RTK Fix:	99.95								Status: Pass
Repeat Lines:	Line Numbers:	None								Status: Pass

Daily Measurement Performance Criteria

Static	98	% of background readings within +/-	2	mV for ALL channels
	98	% of spike readings within +/-	10	% of expected baseline mV for ALL channels
Cable Shake	98	% of readings within +/-	2	mV for ALL channels
Personnel	98	% of readings within +/-	2	mV for ALL channels
Towed Vehicle	98	% of readings within +/-	2	mV for ALL channels
IVS	98	% of background readings within +/-	3	mV for ALL channels
		Item response within +/-	25	% of expected value for ALL channels
		Item position within	0.8202	ft of actual location
GPS Check		GPS measurement within	0.25	ft of control point location

DateCollected: 2/14/2017 Team ID: GEO_1 Survey Instrument: Array 2 Instrument Warm-up Time: 15
 Weather: sunny Static Tests File Name: 0214171QC1
 IVS Test File Name: 0214171IVS1 IVS Location: Unit 28 IVS GPS Check File Name: 0214171GPS
 QC Survey Notes: 12.6/12.7/12.6

QC Tests

	Response (mV)				Percent in Tolerance				Status					
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4		
Sensor ID: 1														
Static Pre-Line ID:	0	-0.31	-0.11	0.02	0	100	100	100	100					
Static Spike-Line ID:	1	1189.68	853.62	522.43	257.89	100	100	100	100					
Static Post-Line ID:	2	-0.84	-0.46	-0.08	-0.18	100	100	100	100					
Comments:											Pass	Pass	Pass	Pass
Sensor ID: 2														
Static Pre-Line ID:	0.1	-0.35	-0.12	-0.07	-0.03	100	100	100	100					
Static Spike-Line ID:	1.1	1164.06	837.75	513.11	255.39	100	100	100	100					
Static Post-Line ID:	2.1	-0.65	-0.44	-0.1	0	100	100	100	100					
Comments:											Pass	Pass	Pass	Pass
Sensor ID: 3														
Static Pre-Line ID:	0.2	-0.75	-0.14	0.15	0.14	100	100	100	100					
Static Spike-Line ID:	1.2	1201.86	859.95	525.88	260.15	100	100	100	100					
Static Post-Line ID:	2.2	-2.88	-0.8	0.08	0.12	100	100	100	100					
Comments:											Pass	Pass	Pass	Pass
Sensor ID: 1														
Cable Shake Line ID:	3	-0.94	-0.48	-0.04	-0.1	100	100	100	100					
Comments:											Pass	Pass	Pass	Pass
Sensor ID: 2														
Cable Shake Line ID:	3.1	-0.43	-0.43	-0.16	-0.07	100	100	100	100					
Comments:											Pass	Pass	Pass	Pass
Sensor ID: 3														
Cable Shake Line ID:	3.2	-3.17	-0.82	0.12	0.15	100	100	100	100					
Comments:											Pass	Pass	Pass	Pass

Sensor ID: 1

Tow Vehicle Line ID:	4	-2	-1.19	-0.38	-0.24	100	100	100	100
Comments:									

Pass Pass Pass Pass

Sensor ID: 2

Tow Vehicle Line ID:	4.1	0.04	-0.33	-0.12	-0.06	100	100	100	100
Comments:									

Pass Pass Pass Pass

Sensor ID: 3

Tow Vehicle Line ID:	4.2	-2.57	-0.52	0.11	0.04	100	100	100	100
Comments:									

Pass Pass Pass Pass

IVS Tests

	Response (mV)								Percent in Tolerance				Status			
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4				
	Sensor ID: 1															
Background Line ID:	1	1.22	0.69	0.53	0.41	100	100	100	100	Pass	Pass	Pass	Pass			
Comments:																
Sensor ID: 2																
Background Line ID:	1.1	1.1	0.63	0.34	0.28	98.56	100	100	100	Pass	Pass	Pass	Pass			
Comments:																
Sensor ID: 3																
Background Line ID:	1.2	0.93	0.45	0.27	0.3	100	100	100	100	Pass	Pass	Pass	Pass			
Comments:																

	Item Response (mV)				Delta Response (%)				Item Pos Offset	Status					
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4		Ch1	Ch2	Ch3	Ch4	Pos	
Sensor ID: 1															
Test Item: IVS49	Line ID: 0	176.19	127.33	75.31	38.49	-1.97	-1.68	-0.97	-0.39	0.12	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS52	Line ID: 0	153.20	111.36	66.32	33.03	-3.63	-2.89	-0.84	-2.21	0.12	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS55	Line ID: 0	39.39	29.09	19.82	11.33	3.72	-3.86	-2.47	-0.07	0.12	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS58	Line ID: 0	44.71	27.36	14.02	5.45	5.68	0.59	2.11	3.75	0.14	Pass	Pass	Pass	Pass	Pass
Comments:															
Sensor ID: 2															
Test Item: IVS51	Line ID: 0.1	155.52	110.59	65.09	32.64	0.34	-0.44	-0.38	0.31	0.05	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS54	Line ID: 0.1	126.46	92.09	56.21	28.54	-6.26	-4.62	-1.48	0.15	0.12	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS57	Line ID: 0.1	32.94	25.19	17.89	10.45	4.07	-1.69	-0.67	-1.50	0.21	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS60	Line ID: 0.1	44.00	24.88	11.22	3.38	15.06	7.57	8.08	1.41	0.18	Pass	Pass	Pass	Pass	Pass
Comments:															
Sensor ID: 3															
Test Item: IVS50	Line ID: 0.2	142.32	101.42	59.08	29.68	1.83	1.08	2.08	1.05	0.05	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS53	Line ID: 0.2	138.71	100.38	59.64	31.01	-1.27	0.08	1.86	3.25	0.10	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS56	Line ID: 0.2	27.41	22.32	16.16	9.86	-7.60	-8.45	-6.21	-5.04	0.12	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS59	Line ID: 0.2	34.46	20.15	9.12	2.93	12.51	5.88	3.93	-1.48	0.16	Pass	Pass	Pass	Pass	Pass
Comments:															

GPS Function Check

Point Location ID:	Unit 28 IVS	Total Offset (ft):	0.01844	Status:	Pass
Comments:					

Date Collected: 2/14/2017 Team ID: GEO_1 Survey Instrument: Array 2 Instrument Warm-up Time: 15

Weather: sunny

Static Tests File Name: 0214171QC2

IVS Test File Name: 0214171IVS2

IVS Location: Unit 28 IVS

GPS Check File Name:

QC Survey Notes: 12.1/12.3/12.0

QC Tests

	Response (mV)				Percent in Tolerance				Status				
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	
Sensor ID: 1													
Static Pre-Line ID:	0	0.48	0.07	-0.03	-0.03	100	100	100	100				
Static Spike-Line ID:	1	1121.05	802.86	491.08	241.51	100	100	100	100				
Static Post-Line ID:	2	1.36	0.35	0.08	-0.02	100	100	100	100				
Comments:										Pass	Pass	Pass	Pass
Sensor ID: 2													
Static Pre-Line ID:	0.1	0.16	0.02	-0.01	-0.04	100	100	100	100				
Static Spike-Line ID:	1.1	1087.82	782.71	479.8	238.32	100	100	100	100				
Static Post-Line ID:	2.1	0.56	0.07	0.01	-0.07	100	100	100	100				
Comments:										Pass	Pass	Pass	Pass
Sensor ID: 3													
Static Pre-Line ID:	0.2	0.1	0.02	-0.01	-0.02	100	100	100	100				
Static Spike-Line ID:	1.2	1116.11	799.4	489.58	242.42	100	100	100	100				
Static Post-Line ID:	2.2	0.82	0.09	0.01	-0.05	100	100	100	100				
Comments:										Pass	Pass	Pass	Pass

IVS Tests

	Response (mV)								Percent in Tolerance				Status			
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4				
	Sensor ID: 1															
Background Line ID:	1	1.58	0.82	0.41	0.25	99.05	100	100	100	Pass	Pass	Pass	Pass			
Comments:																

Sensor ID: 2													
Background Line ID:	1.1	1.18	0.76	0.37	0.2	100	100	100	100	Pass	Pass	Pass	Pass
Comments:													

Sensor ID: 3													
Background Line ID:	1.2	1.18	0.5	0.4	0.26	100	100	100	100	Pass	Pass	Pass	Pass
Comments:													

	Item Response (mV)				Delta Response (%)				Item Pos Offset	Status					
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4		Ch1	Ch2	Ch3	Ch4	Pos	
Sensor ID: 1															
Test Item: IVS49 Line ID:	0	164.51	117.80	70.55	35.94	-8.47	-9.04	-7.22	-7.00	0.04	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS52 Line ID:	0	140.93	100.75	60.03	30.56	-11.35	-12.15	-10.24	-9.51	0.10	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS55 Line ID:	0	31.74	26.29	18.30	10.80	-16.42	-13.12	-9.92	-4.76	0.09	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS58 Line ID:	0	38.25	24.81	12.63	4.94	-9.59	-8.76	-8.01	-6.03	0.04	Pass	Pass	Pass	Pass	Pass
Comments:															

Sensor ID: 2															
Test Item: IVS51 Line ID:	0.1	137.39	99.35	58.75	29.55	-11.36	-10.56	-10.07	-9.20	0.11	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS54 Line ID:	0.1	117.51	84.14	50.05	25.18	-12.90	-12.85	-12.28	-11.64	0.04	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS57 Line ID:	0.1	26.68	22.64	16.12	9.69	-15.73	-11.64	-10.52	-8.73	0.08	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS60 Line ID:	0.1	33.17	20.52	9.32	3.20	-13.25	-11.28	-10.26	-4.02	0.05	Pass	Pass	Pass	Pass	Pass
Comments:															

Sensor ID: 3															
Test Item: IVS50 Line ID:	0.2	129.97	93.66	55.57	27.54	-7.00	-6.66	-3.98	-6.25	0.06	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS53 Line ID:	0.2	131.39	94.37	55.71	28.45	-6.49	-5.91	-4.85	-5.28	0.08	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS56 Line ID:	0.2	27.87	22.21	16.02	9.64	-6.04	-8.92	-6.98	-7.13	0.03	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS59 Line ID:	0.2	29.10	17.41	7.94	2.24	-4.99	-8.48	-9.52	-24.71	0.06	Pass	Pass	Pass	Pass	Pass
Comments:															

DateCollected: 2/15/2017 Team ID: GEO_1 Survey Instrument: Array 2 Instrument Warm-up Time: 15

Weather: sunny

Static Tests File Name: 0215171QC1

IVS Test File Name: 0215171IVS1

IVS Location: Unit 28 IVS

GPS Check File Name: 0215171GPS

QC Survey Notes: 12.6/12.7/12.4

QC Tests

	Response (mV)				Percent in Tolerance				Status			
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4

Sensor ID: 1

Static Pre-Line ID: 0	-1.1	-0.28	0.04	0.09	100	100	100	100
Static Spike-Line ID: 1	1174.19	845.2	519.09	257.54	100	100	100	100
Static Post-Line ID: 2	-3.53	-0.43	0.01	-0.15	100	100	100	100

Comments:

Pass Pass Pass Pass

Sensor ID: 2

Static Pre-Line ID: 0.1	0.33	0.11	0.09	0.14	100	100	100	100
Static Spike-Line ID: 1.1	1162.83	838.7	515.66	258.42	100	100	100	100
Static Post-Line ID: 2.1	-0.17	-0.38	-0.04	0.15	100	100	100	100

Comments:

Pass Pass Pass Pass

Sensor ID: 3

Static Pre-Line ID: 0.2	-1.6	-0.57	-0.27	-0.16	100	100	100	100
Static Spike-Line ID: 1.2	1194.37	857	526.65	262.5	100	100	100	100
Static Post-Line ID: 2.2	-7.64	-2.32	-0.15	0.32	100	100	100	100

Comments:

Pass Pass Pass Pass

Sensor ID: 1

Cable Shake Line ID: 3	-4.13	-0.38	-0.06	-0.24	99.93	100	100	100
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Comments:

Pass Pass Pass Pass

Sensor ID: 2

Cable Shake Line ID: 3.1	-1.73	-0.99	-0.19	0.15	100	100	100	100
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Comments:

Pass Pass Pass Pass

Sensor ID: 3

Cable Shake Line ID: 3.2	-9.54	-2.86	-0.28	0.26	100	100	100	100
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Comments:

Pass Pass Pass Pass

Sensor ID: 1

Tow Vehicle Line ID: 4	-4.13	-0.18	-0.09	-0.37	100	100	100	100
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Comments:

Pass Pass Pass Pass

Sensor ID: 2

Tow Vehicle Line ID: 4.1	-1.13	-0.9	-0.23	0.08	100	100	100	100
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Comments:

Pass Pass Pass Pass

Sensor ID: 3

Tow Vehicle Line ID: 4.2	-12.06	-3.63	-0.42	0.11	100	100	100	100
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Comments:

Pass Pass Pass Pass

IVS Tests

	Response (mV)								Percent in Tolerance				Status			
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4				
	Sensor ID: 1															
Background Line ID:	1	1.31	0.65	0.49	0.3	100	100	100	100	Pass	Pass	Pass	Pass			
Comments:																

Sensor ID: 2													
Background Line ID:	1.1	0.98	0.56	0.34	0.31	100	100	100	100	Pass	Pass	Pass	Pass
Comments:													

Sensor ID: 3													
Background Line ID:	1.2	0.78	0.48	0.32	0.29	100	100	100	100	Pass	Pass	Pass	Pass
Comments:													

	Item Response (mV)				Delta Response (%)				Item Pos Offset	Status				
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4		Ch1	Ch2	Ch3	Ch4	Pos

Sensor ID: 1																
Test Item: IVS49	Line ID:	0	182.34	128.98	75.45	38.24	1.45	-0.41	-0.78	-1.04	0.05	Pass	Pass	Pass	Pass	Pass
Comments:																
Test Item: IVS52	Line ID:	0	148.98	105.07	60.56	30.84	-6.28	-8.38	-9.46	-8.68	0.11	Pass	Pass	Pass	Pass	Pass
Comments:																
Test Item: IVS55	Line ID:	0	39.41	28.97	18.36	10.07	3.78	-4.23	-9.63	-11.12	0.11	Pass	Pass	Pass	Pass	Pass
Comments:																
Test Item: IVS58	Line ID:	0	47.30	29.65	14.63	6.04	11.82	9.01	6.59	14.86	0.12	Pass	Pass	Pass	Pass	Pass
Comments:																

Sensor ID: 2																
Test Item: IVS51	Line ID:	0.1	140.28	98.28	59.31	29.89	-9.49	-11.52	-9.21	-8.14	0.11	Pass	Pass	Pass	Pass	Pass
Comments:																
Test Item: IVS54	Line ID:	0.1	120.10	85.40	50.34	25.53	-10.98	-11.55	-11.78	-10.39	0.12	Pass	Pass	Pass	Pass	Pass
Comments:																
Test Item: IVS57	Line ID:	0.1	27.02	21.76	15.76	9.57	-14.64	-15.08	-12.51	-9.81	0.19	Pass	Pass	Pass	Pass	Pass
Comments:																
Test Item: IVS60	Line ID:	0.1	32.68	20.70	9.56	2.94	-14.54	-10.48	-7.90	-11.84	0.09	Pass	Pass	Pass	Pass	Pass
Comments:																

Sensor ID: 3																
Test Item: IVS50	Line ID:	0.2	147.41	104.26	61.07	30.55	5.47	3.90	5.53	4.01	0.09	Pass	Pass	Pass	Pass	Pass
Comments:																
Test Item: IVS53	Line ID:	0.2	136.75	96.35	55.79	28.61	-2.67	-3.94	-4.72	-4.76	0.11	Pass	Pass	Pass	Pass	Pass
Comments:																
Test Item: IVS56	Line ID:	0.2	29.39	23.86	16.32	10.25	-0.92	-2.12	-5.25	-1.29	0.16	Pass	Pass	Pass	Pass	Pass
Comments:																
Test Item: IVS59	Line ID:	0.2	28.41	17.80	7.75	2.80	-7.24	-6.45	-11.71	-6.01	0.10	Pass	Pass	Pass	Pass	Pass
Comments:																

GPS Function Check

Point Location ID:	Unit 28 IVS	Total Offset (ft):	0.01005	Status:	Pass
Comments:					

DateCollected: 2/15/2017 Team ID: GEO_1 Survey Instrument: Array 2 Instrument Warm-up Time: 15

Weather: sunny

Static Tests File Name: 0215171QC2

IVS Test File Name: 0215171IVS2

IVS Location: Unit 28 IVS

GPS Check File Name:

QC Survey Notes: 12.0/12.1/12.0

QC Tests

	Response (mV)				Percent in Tolerance				Status				
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	
Sensor ID: 1													
Static Pre-Line ID:	0	-0.05	0.02	0.04	-0.04	100	100	100	100				
Static Spike-Line ID:	1	1110.34	797.16	488.12	240.36	100	100	100	100				
Static Post-Line ID:	2	-1.69	0.28	0.38	-0.02	100	100	100	100				
Comments:										Pass	Pass	Pass	Pass
Sensor ID: 2													
Static Pre-Line ID:	0.1	-0.16	-0.04	0.05	-0.02	100	100	100	100				
Static Spike-Line ID:	1.1	1086.92	783.76	480.53	238.86	100	100	100	100				
Static Post-Line ID:	2.1	-1.25	0.24	0.18	-0.07	100	100	100	100				
Comments:										Pass	Pass	Pass	Pass
Sensor ID: 3													
Static Pre-Line ID:	0.2	0.07	0.19	0.06	-0.03	100	100	100	100				
Static Spike-Line ID:	1.2	1123.58	805.38	492.48	243.64	100	100	100	100				
Static Post-Line ID:	2.2	-0.94	1.18	0.19	-0.02	100	100	100	100				
Comments:										Pass	Pass	Pass	Pass

IVS Tests

	Response (mV)								Percent in Tolerance				Status				
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4	
	Sensor ID: 1																
Background Line ID:	1	0.97	0.55	0.4	0.35	98.57	100	100	100	Pass	Pass	Pass	Pass				
Comments:																	

Sensor ID: 2																	
Background Line ID:	1.1	1.13	0.52	0.33	0.25	100	100	100	100	Pass	Pass	Pass	Pass				
Comments:																	

Sensor ID: 3																	
Background Line ID:	1.2	0.89	0.58	0.37	0.31	100	100	100	100	Pass	Pass	Pass	Pass				
Comments:																	

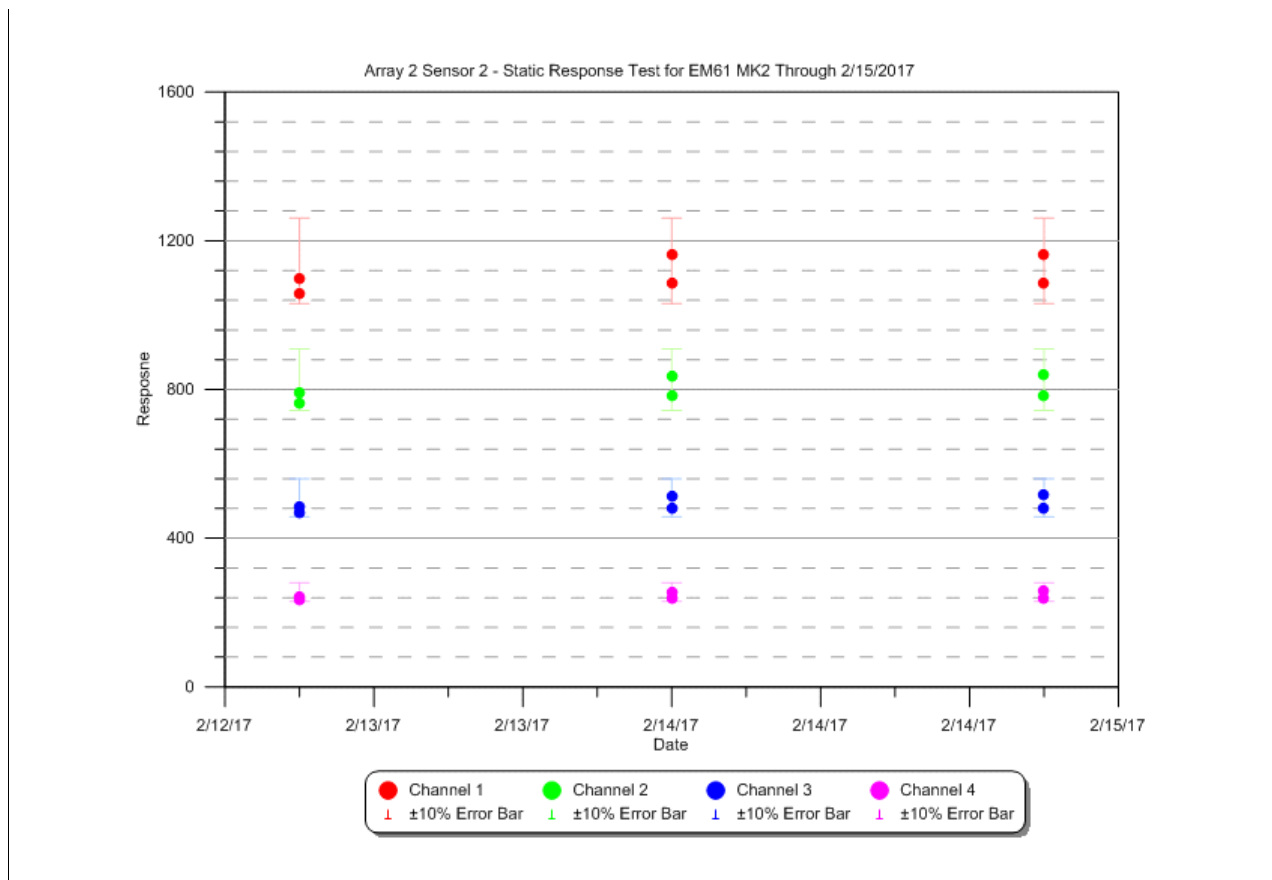
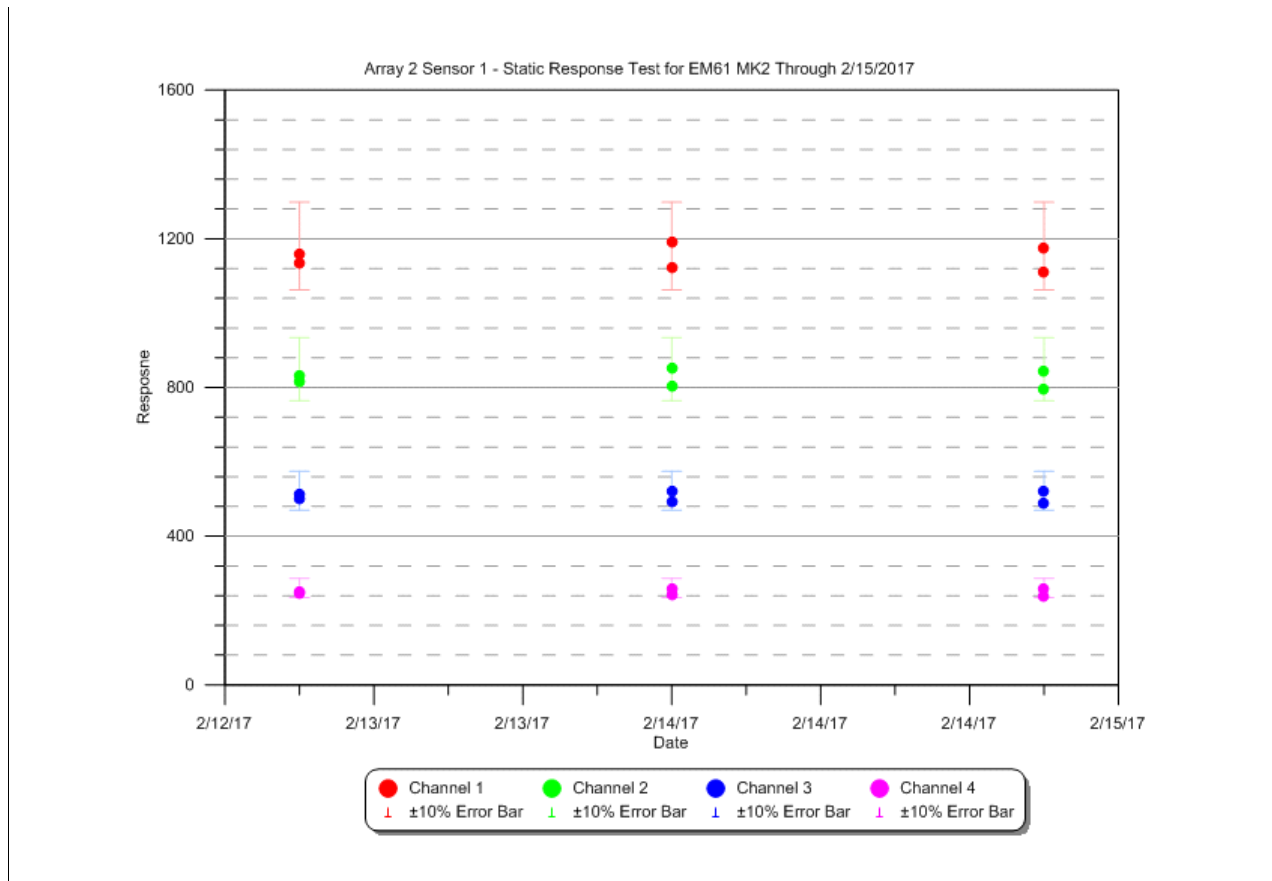
	Item Response (mV)				Delta Response (%)				Item Pos Offset	Status				
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4		Ch1	Ch2	Ch3	Ch4	Pos

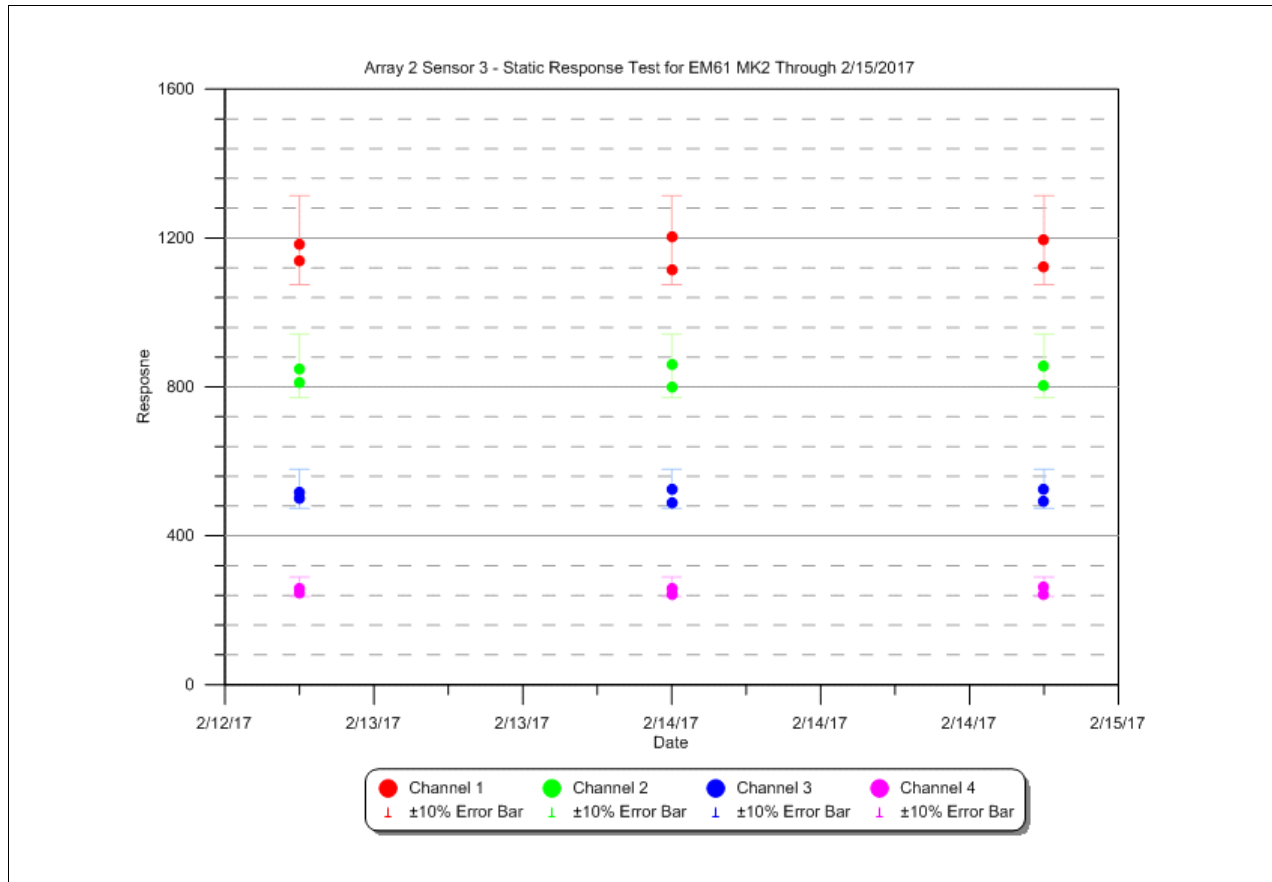
Sensor ID: 1															
Test Item: IVS49	Line ID: 0	163.17	117.96	69.84	35.74	-9.21	-8.92	-8.17	-7.50	0.09	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS52	Line ID: 0	138.29	99.99	59.08	30.22	-13.01	-12.80	-11.66	-10.54	0.11	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS55	Line ID: 0	30.67	25.37	17.58	10.18	-19.23	-16.14	-13.50	-10.16	0.02	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS58	Line ID: 0	39.43	25.57	12.99	5.04	-6.80	-5.96	-5.37	-4.07	0.09	Pass	Pass	Pass	Pass	Pass
Comments:															

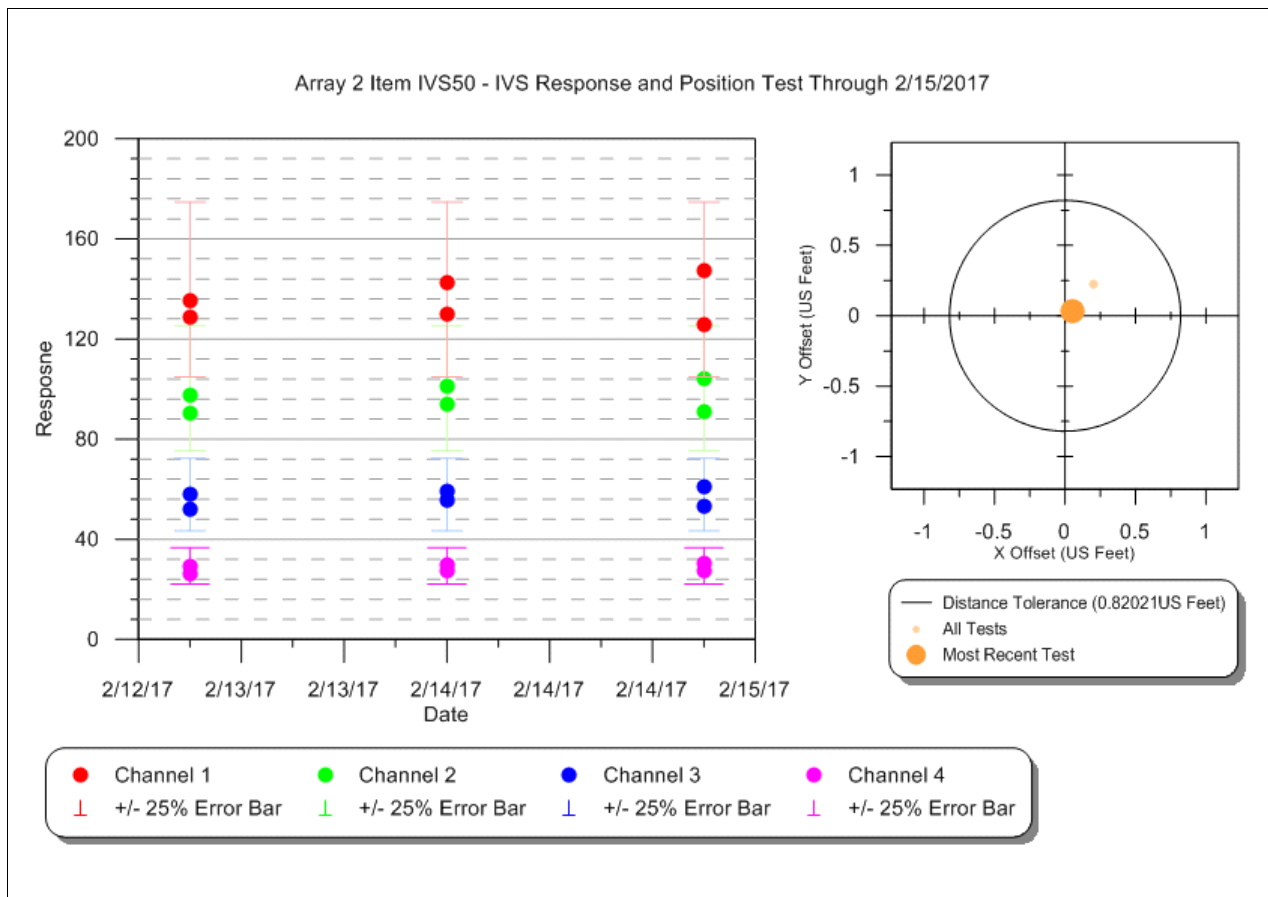
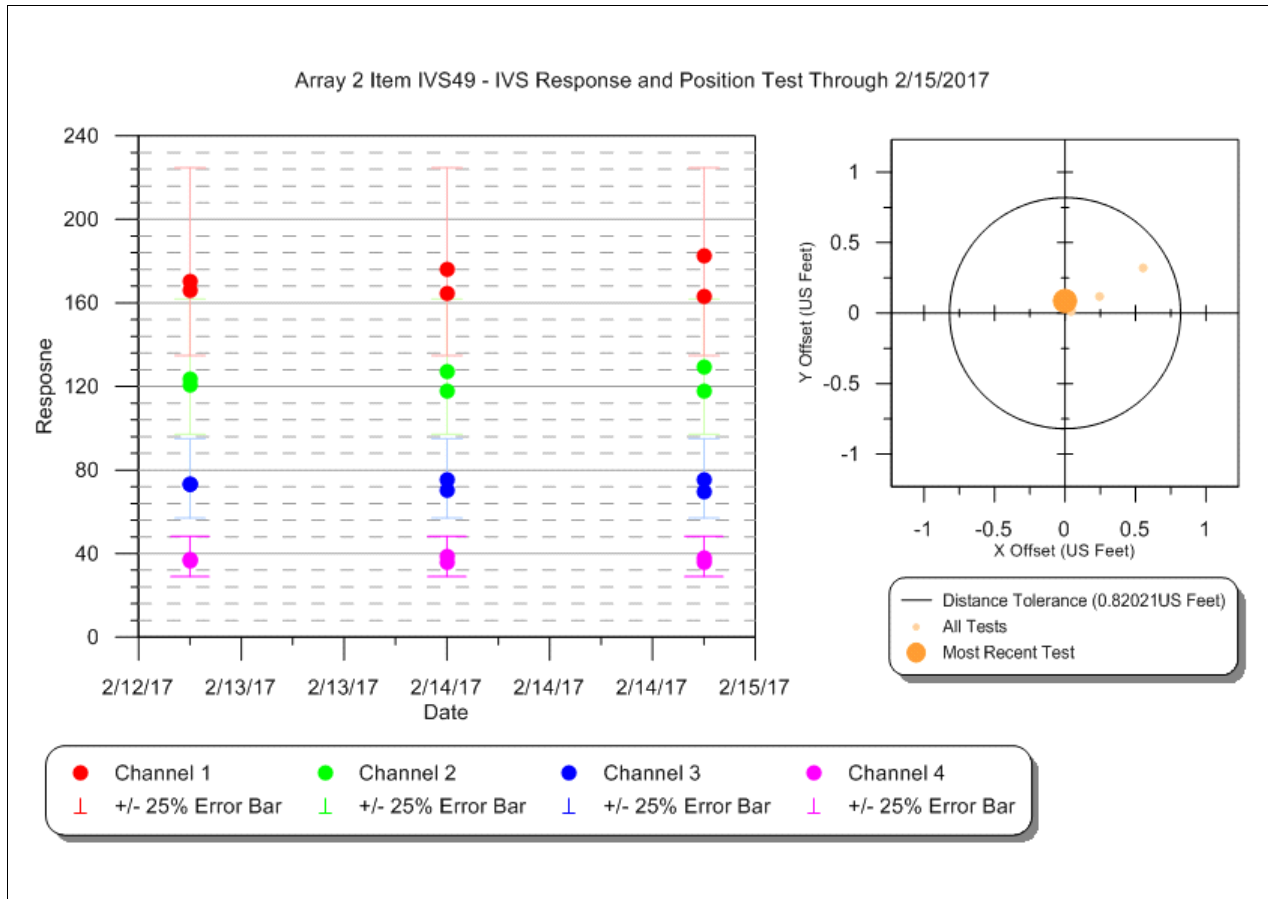
Sensor ID: 2															
Test Item: IVS51	Line ID: 0.1	132.97	95.62	56.39	28.12	-14.21	-13.92	-13.68	-13.60	0.03	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS54	Line ID: 0.1	115.64	83.37	49.09	24.80	-14.28	-13.65	-13.97	-12.96	0.04	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS57	Line ID: 0.1	28.10	22.66	16.16	9.30	-11.24	-11.55	-10.24	-12.39	0.09	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS60	Line ID: 0.1	34.31	20.56	9.03	2.55	-10.27	-11.11	-13.05	-23.48	0.28	Pass	Pass	Pass	Pass	Pass
Comments:															

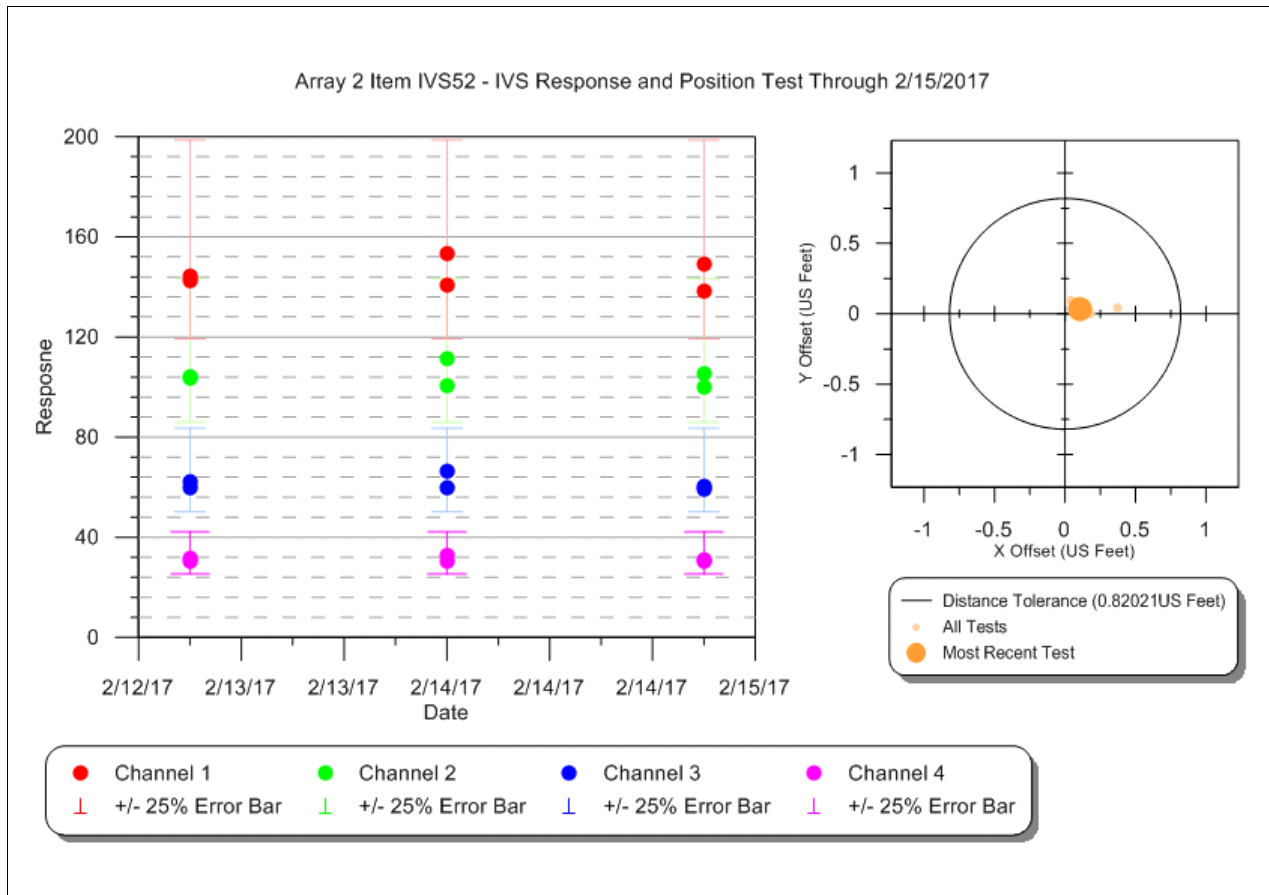
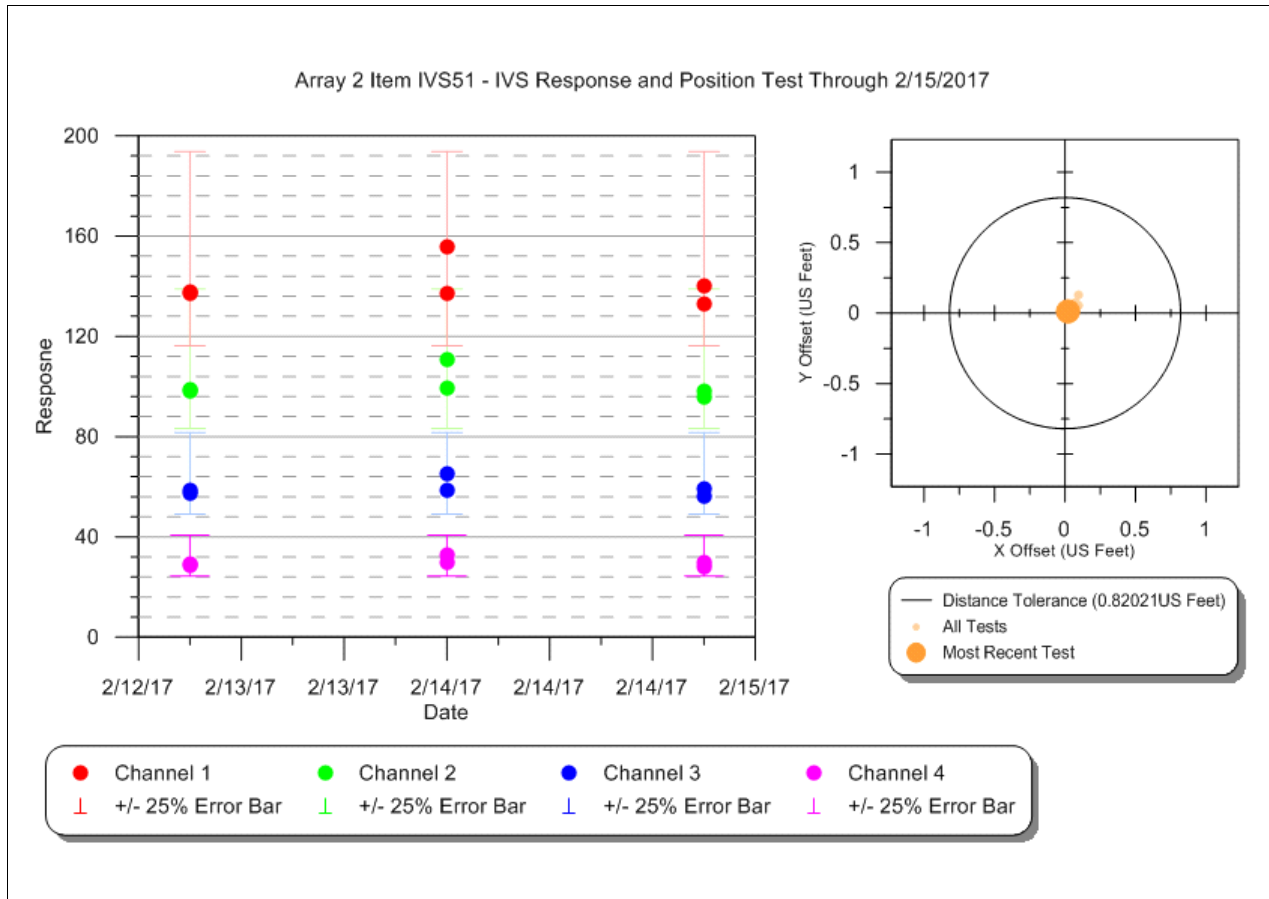
Sensor ID: 3															
Test Item: IVS50	Line ID: 0.2	126.04	91.15	53.26	27.16	-9.82	-9.16	-7.97	-7.54	0.06	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS53	Line ID: 0.2	126.99	92.35	53.07	27.16	-9.62	-7.93	-9.37	-9.59	0.04	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS56	Line ID: 0.2	25.86	22.02	15.85	9.96	-12.81	-9.70	-8.01	-4.10	0.12	Pass	Pass	Pass	Pass	Pass
Comments:															
Test Item: IVS59	Line ID: 0.2	27.48	16.83	7.43	2.32	-10.28	-11.56	-15.31	-22.20	0.10	Pass	Pass	Pass	Pass	Pass
Comments:															

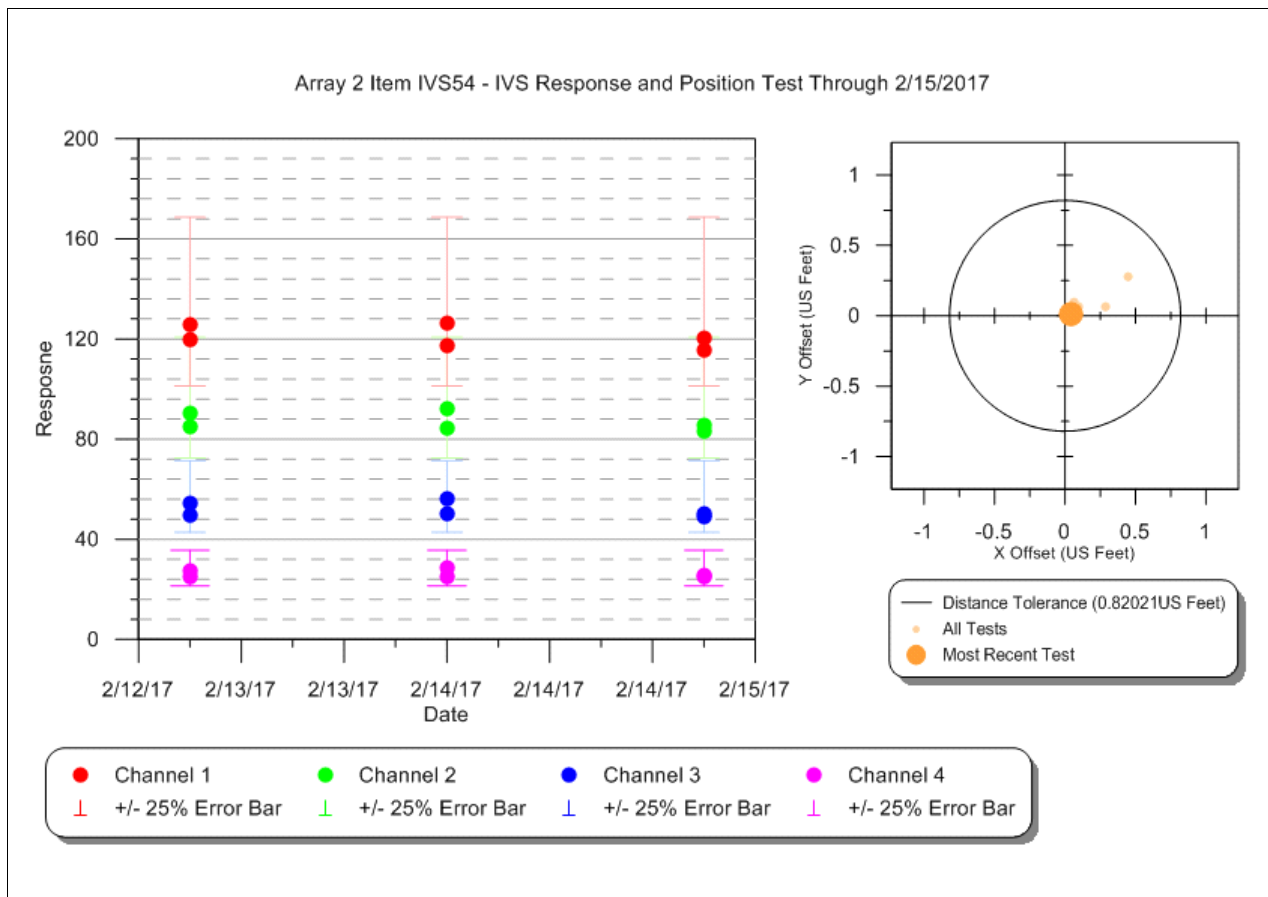
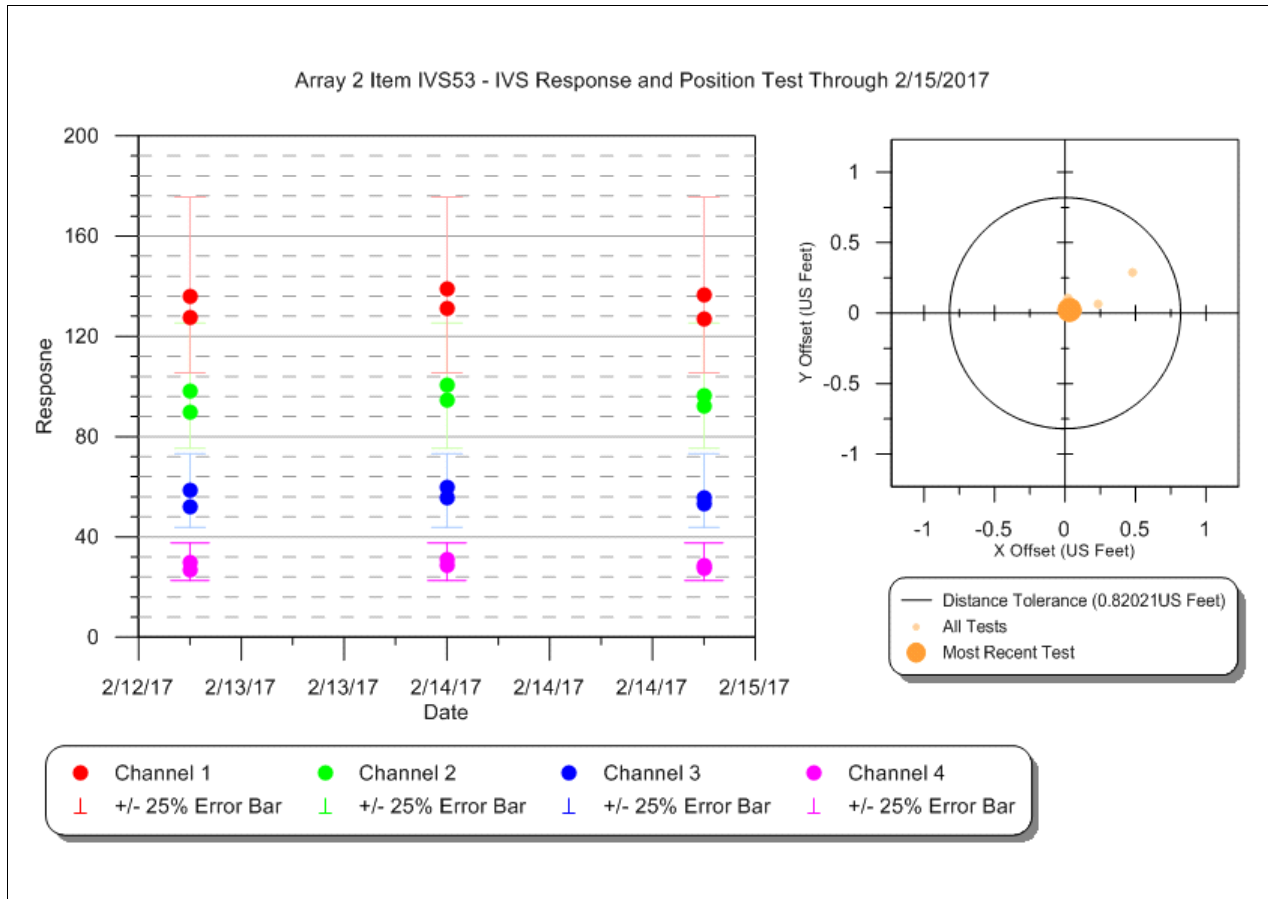
Cumulative Daily Measurement Performance Criteria

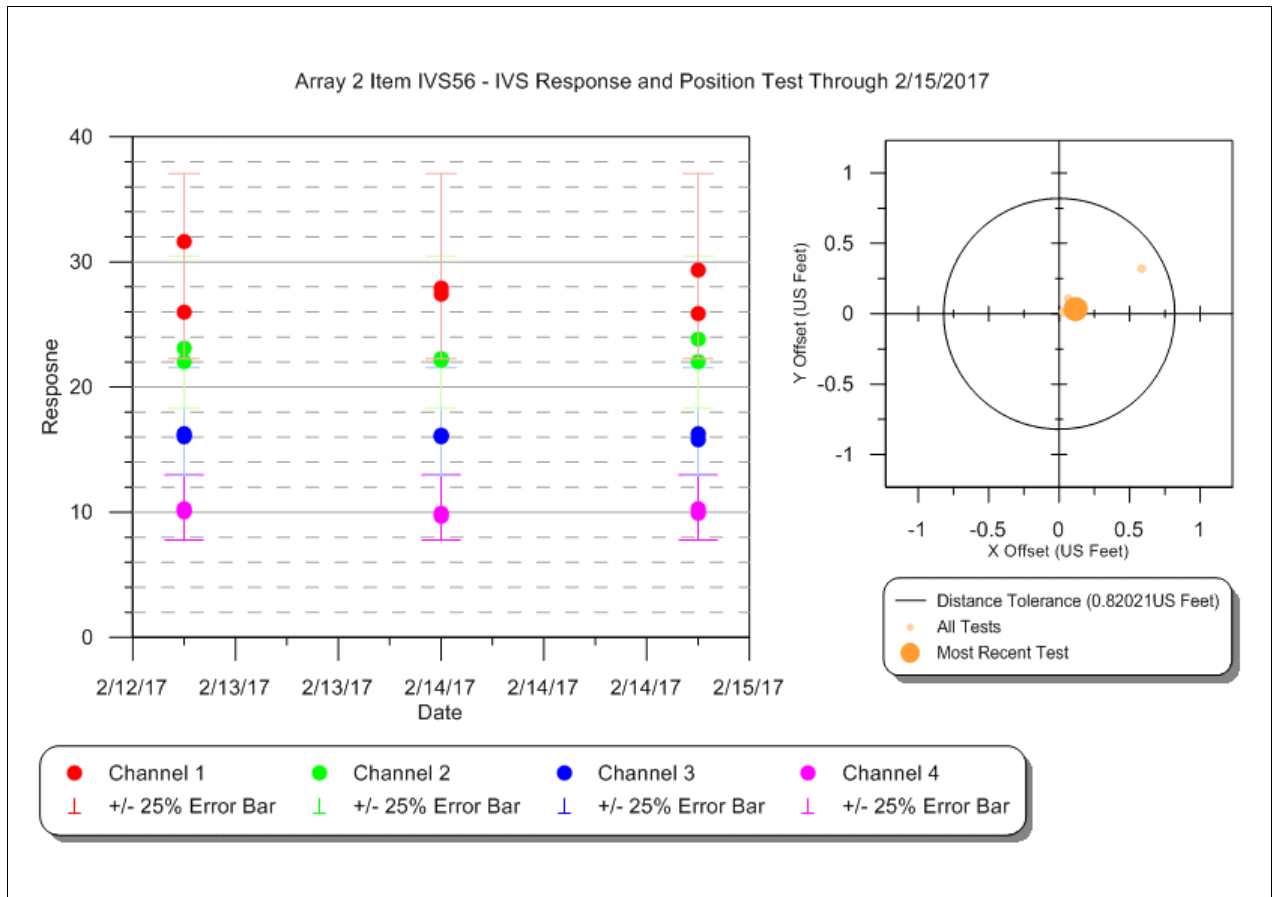
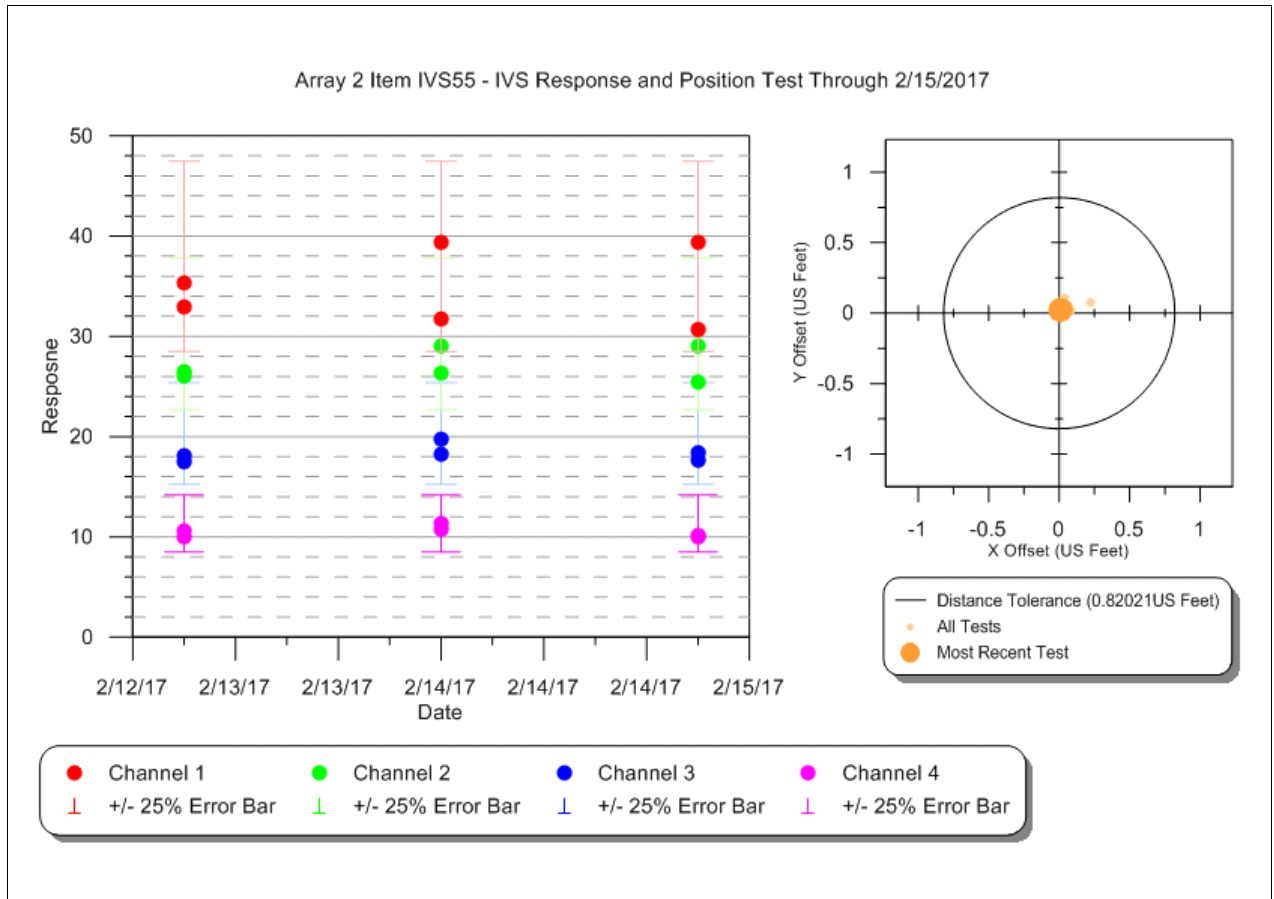


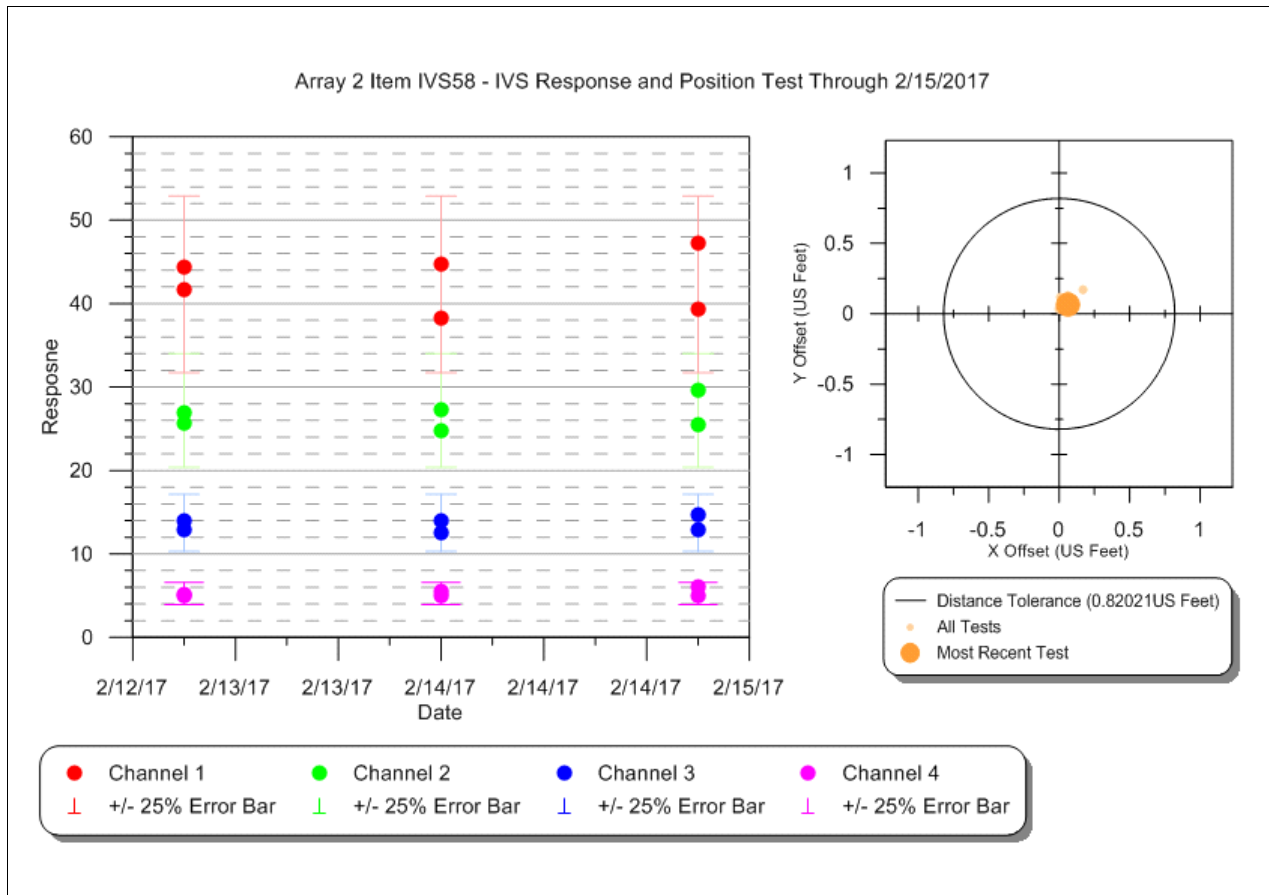
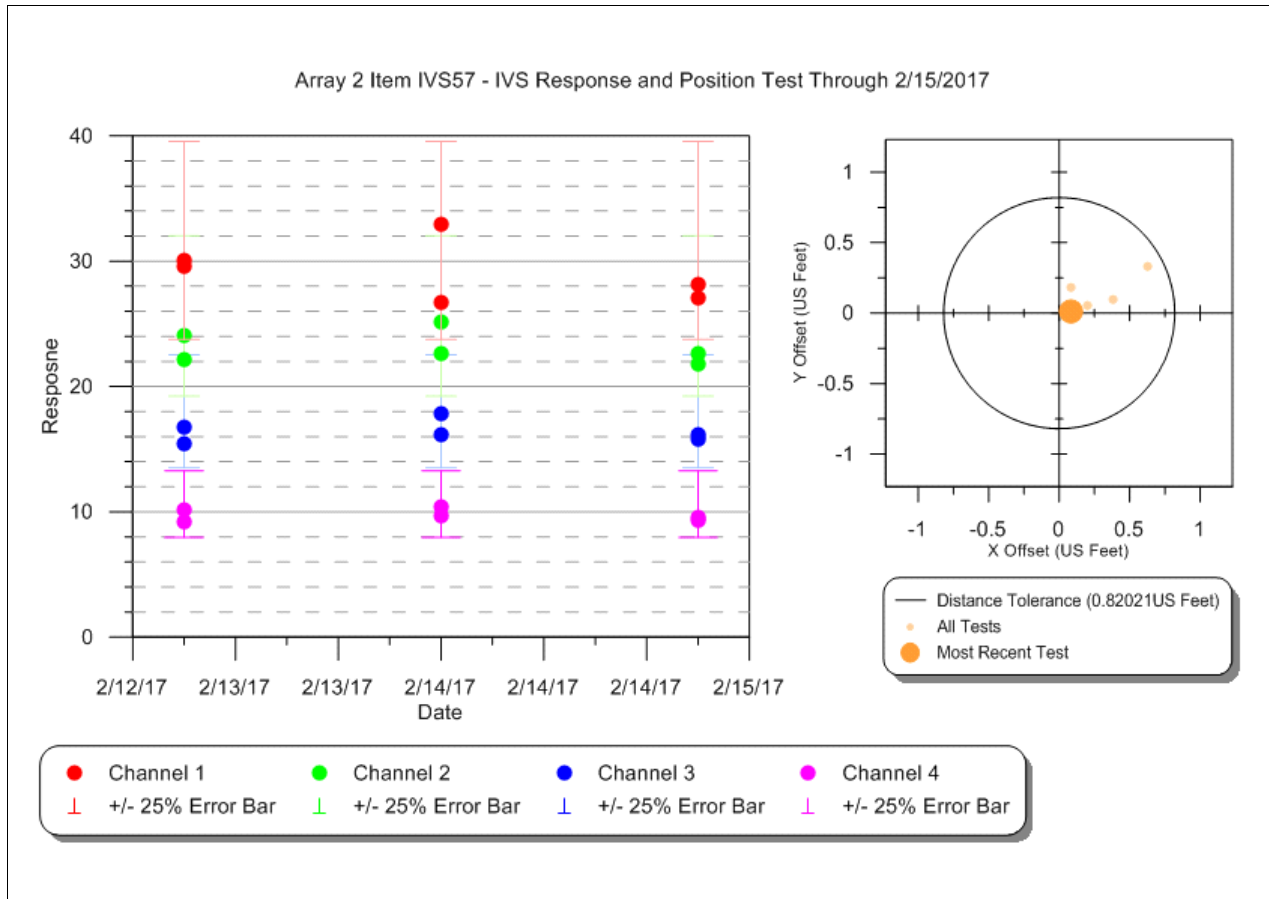


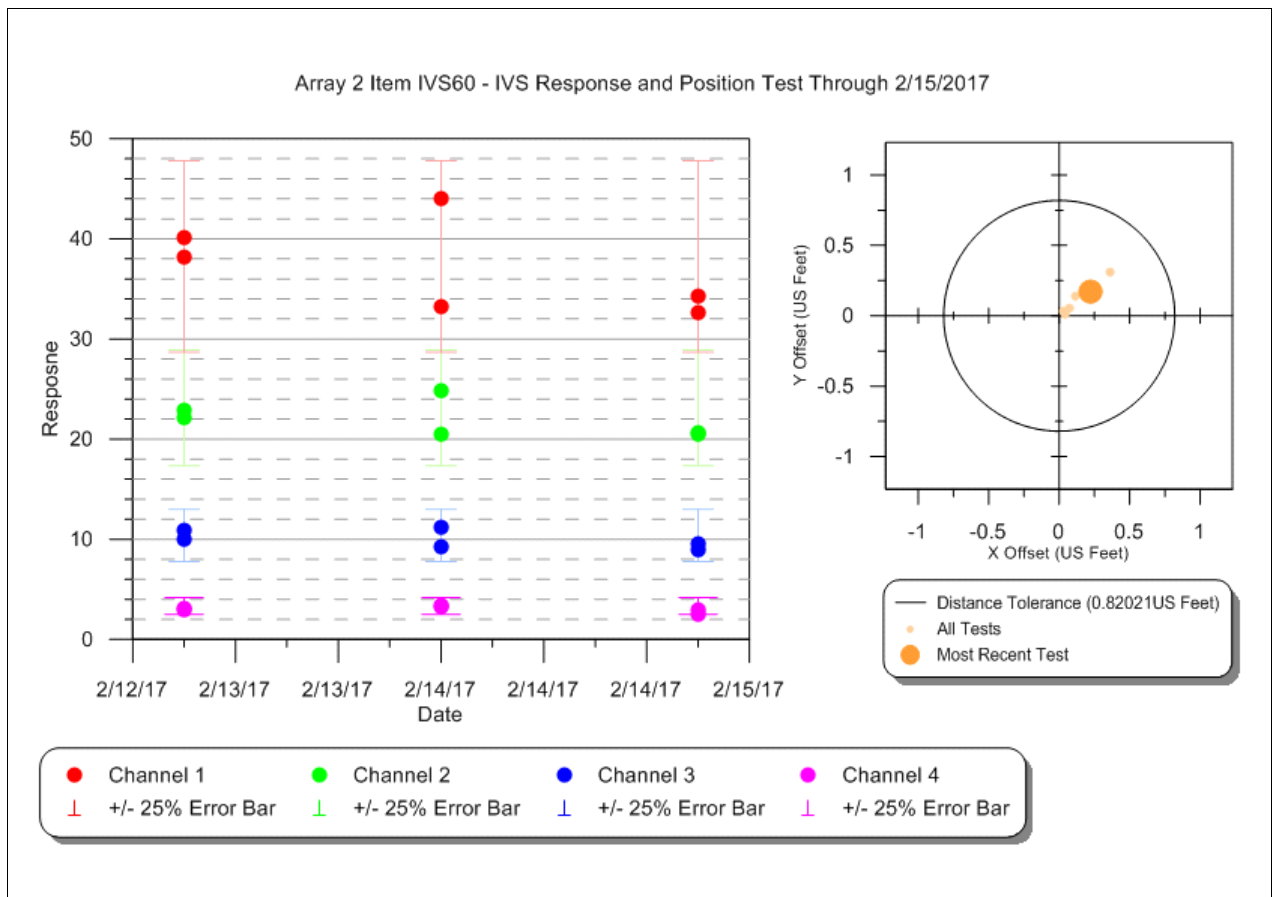
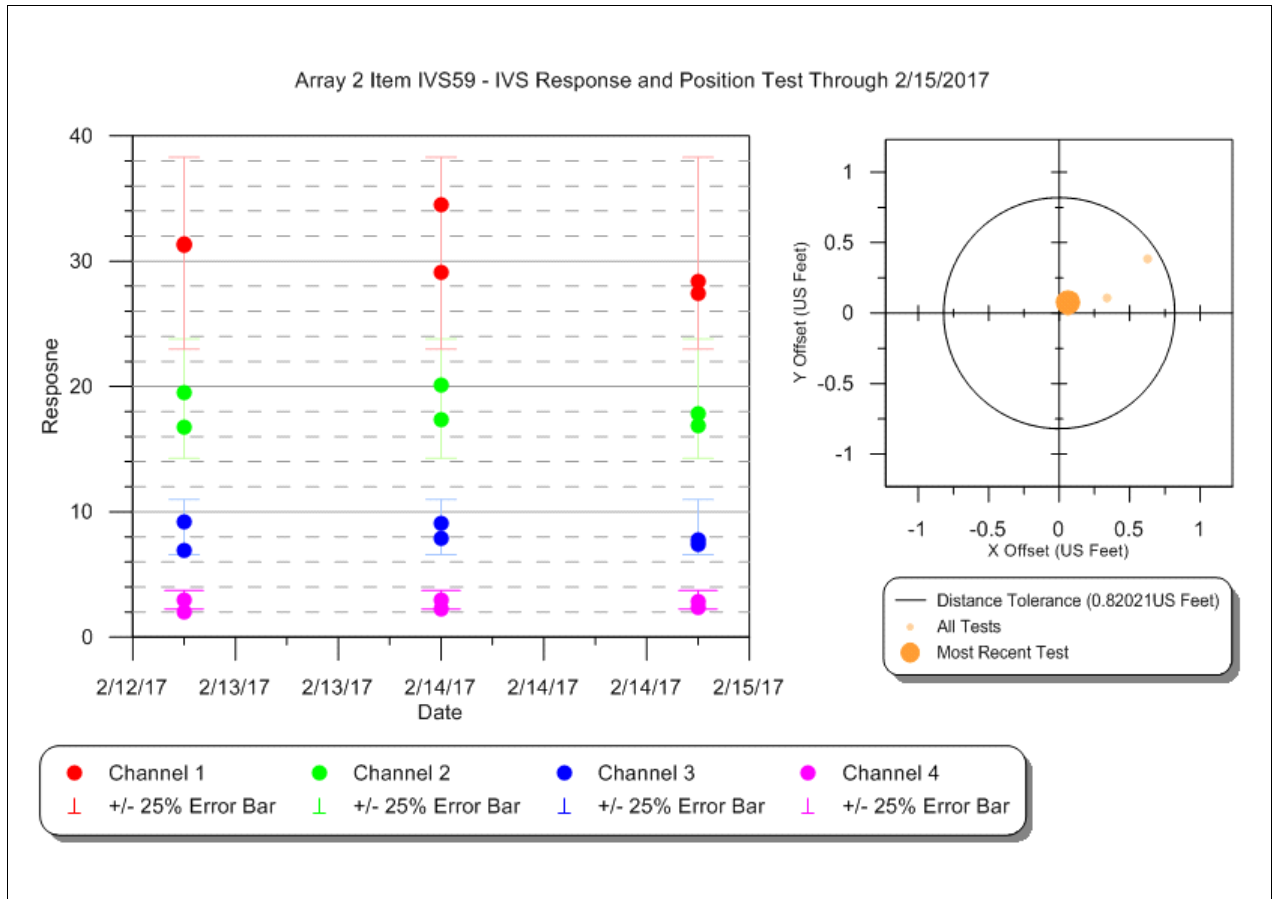












Appendix D

USACE Surface Removal

Quality Assurance

Documentation

USACE Surface Removal Quality Assurance Documentation

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Containment Line	B3C5A0	10/7/2015
28	Containment Line	B3C5B0	10/7/2015
28	Containment Line	B3C5C0	10/7/2015
28	Containment Line	B3C5C9	10/7/2015
28	Containment Line	B3C5D0	10/7/2015
28	Containment Line	B3C5D9	10/7/2015
28	Containment Line	B3C5E0	10/7/2015
28	Containment Line	B3C5E9	10/7/2015
28	Containment Line	B3C5F0	10/7/2015
28	Containment Line	B3C5F8	10/7/2015
28	Containment Line	B3C5F9	10/7/2015
28	Containment Line	B3C5G0	10/7/2015
28	Interior	B3C5G0	5/18/2017
28	Containment Line	B3C5G7	10/7/2015
28	Containment Line	B3C5G8	10/7/2015
28	Containment Line	B3C5G9	10/7/2015
28	Containment Line	B3C5H0	10/7/2015
28	Interior	B3C5H0	5/18/2017
28	Containment Line	B3C5H6	10/7/2015
28	Containment Line	B3C5H7	10/7/2015
28	Containment Line	B3C5H8	10/7/2015
28	Containment Line	B3C5H9	10/7/2015
28	Containment Line	B3C5I0	10/7/2015
28	Interior	B3C5I0	5/18/2017
28	Containment Line	B3C5I6	10/7/2015
28	Containment Line	B3C5I7	10/7/2015
28	Containment Line	B3C5I8	10/7/2015
28	Containment Line	B3C5I9	10/7/2015
28	Interior	B3C5I9	5/18/2017
28	Interior	B3C5J0	5/18/2017
28	Containment Line	B3C5J6	10/7/2015
28	Interior	B3C5J6	5/18/2017
28	Containment Line	B3C5J7	10/7/2015
28	Interior	B3C5J7	5/18/2017
28	Containment Line	B3C5J8	10/7/2015
28	Interior	B3C5J8	5/18/2017
28	Containment Line	B3C5J9	10/7/2015
28	Interior	B3C5J9	5/18/2017
28	Containment Line	B3C6A1	10/7/2015
28	Containment Line	B3C6B1	10/7/2015
28	Containment Line	B3C6C1	10/7/2015
28	Containment Line	B3C6D1	10/7/2015
28	Containment Line	B3C6E1	10/7/2015
28	Containment Line	B3C6F1	10/7/2015
28	Containment Line	B3C6G1	10/7/2015
28	Interior	B3C6G1	5/18/2017

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3C6H1	5/18/2017
28	Interior	B3C6J1	5/18/2017
28	Interior	B3D5A0	5/18/2017
28	Interior	B3D5A6	3/23/2017
28	Interior	B3D5A7	3/23/2017
28	Interior	B3D5A8	3/23/2017
28	Interior	B3D5A9	5/18/2017
28	Interior	B3D5B0	4/25/2017
28	Interior	B3D5B6	3/23/2017
28	Interior	B3D5B7	3/23/2017
28	Interior	B3D5B8	3/23/2017
28	Interior	B3D5B9	4/25/2017
28	Interior	B3D5C0	4/25/2017
28	Interior	B3D5C5	3/23/2017
28	Interior	B3D5C6	3/23/2017
28	Interior	B3D5C7	3/23/2017
28	Interior	B3D5C8	3/23/2017
28	Interior	B3D5C9	4/25/2017
28	Interior	B3D5D0	4/25/2017
28	Interior	B3D5D5	3/23/2017
28	Interior	B3D5D6	3/23/2017
28	Interior	B3D5D7	3/23/2017
28	Interior	B3D5D8	4/25/2017
28	Interior	B3D5D9	4/25/2017
28	Interior	B3D5E0	4/25/2017
28	Interior	B3D5E5	3/23/2017
28	Interior	B3D5E6	3/23/2017
28	Interior	B3D5E7	3/23/2017
28	Interior	B3D5E8	3/23/2017
28	Interior	B3D5E9	4/25/2017
28	Interior	B3D5F0	3/1/2017
28	Interior	B3D5F5	3/1/2017
28	Interior	B3D5F6	3/1/2017
28	Interior	B3D5F7	3/1/2017
28	Interior	B3D5F8	3/1/2017
28	Interior	B3D5F9	3/1/2017
28	Interior	B3D5G0	3/1/2017
28	Interior	B3D5G6	3/1/2017
28	Interior	B3D5G7	3/1/2017
28	Interior	B3D5G8	3/1/2017
28	Interior	B3D5G9	3/1/2017
28	Interior	B3D5H0	4/25/2017
28	Interior	B3D5H7	3/9/2017
28	Interior	B3D5H8	3/9/2017
28	Interior	B3D5H9	3/9/2017
28	Interior	B3D5I0	3/9/2017

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3D5I7	3/9/2017
28	Interior	B3D5I8	3/9/2017
28	Interior	B3D5I9	3/9/2017
28	Interior	B3D5J0	3/9/2017
28	Interior	B3D5J8	3/9/2017
28	Interior	B3D5J9	3/9/2017
28	Interior	B3D6A1	5/18/2017
28	Interior	B3D6B1	4/25/2017
28	Interior	B3D6C1	4/25/2017
28	Interior	B3D6D1	4/25/2017
28	Interior	B3D6E1	4/25/2017
28	Interior	B3D6F1	3/1/2017
28	Interior	B3D6F2	3/1/2017
28	Interior	B3D6G1	3/1/2017
28	Interior	B3D6G2	3/1/2017
28	Interior	B3D6H1	3/9/2017
28	Interior	B3D6H2	3/9/2017
28	Interior	B3D6H3	3/9/2017
28	Interior	B3D6I1	3/9/2017
28	Interior	B3D6I2	3/9/2017
28	Interior	B3D6I3	3/9/2017
28	Interior	B3D6J1	3/9/2017
28	Interior	B3D6J2	3/9/2017
28	Interior	B3D6J3	3/9/2017
28	Interior	B3D6J4	3/9/2017
28	Interior	B3E5A0	1/26/2017
28	Interior	B3E5A9	1/26/2017
28	Interior	B3E5B0	1/26/2017
28	Interior	B3E5C0	12/29/2016
28	Interior	B3E6A1	1/26/2017
28	Interior	B3E6A2	1/26/2017
28	Interior	B3E6A3	1/26/2017
28	Interior	B3E6A4	1/26/2017
28	Interior	B3E6A5	1/26/2017
28	Interior	B3E6B1	1/26/2017
28	Interior	B3E6B2	1/26/2017
28	Interior	B3E6B3	1/26/2017
28	Interior	B3E6B4	1/26/2017
28	Interior	B3E6B5	1/26/2017
28	Interior	B3E6B6	1/26/2017
28	Interior	B3E6C1	12/29/2016
28	Interior	B3E6C2	12/29/2016
28	Interior	B3E6C3	12/29/2016
28	Interior	B3E6C4	12/29/2016
28	Interior	B3E6C5	12/29/2016
28	Interior	B3E6C6	12/29/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3E6C7	12/29/2016
28	Interior	B3E6D1	12/29/2016
28	Interior	B3E6D2	12/29/2016
28	Interior	B3E6D3	12/29/2016
28	Interior	B3E6D4	12/29/2016
28	Interior	B3E6D5	12/29/2016
28	Interior	B3E6D6	12/29/2016
28	Interior	B3E6D7	12/29/2016
28	Interior	B3E6E1	12/29/2016
28	Interior	B3E6E2	12/29/2016
28	Interior	B3E6E3	12/29/2016
28	Interior	B3E6E4	12/29/2016
28	Interior	B3E6E5	12/29/2016
28	Interior	B3E6E6	12/29/2016
28	Interior	B3E6E7	12/29/2016
28	Interior	B3E6E8	12/29/2016
28	Interior	B3E6F1	1/26/2017
28	Interior	B3E6F2	1/26/2017
28	Interior	B3E6F3	1/26/2017
28	Interior	B3E6F4	1/26/2017
28	Interior	B3E6F5	1/26/2017
28	Interior	B3E6F6	1/26/2017
28	Interior	B3E6F7	1/26/2017
28	Interior	B3E6F8	1/26/2017
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28	Interior	B3E6G4	1/26/2017
28	Interior	B3E6G5	1/26/2017
28	Interior	B3E6G6	3/1/2017
28	Interior	B3E6G7	1/26/2017
28	Interior	B3E6G8	1/26/2017
28	Interior	B3E6H2	1/26/2017
28	Interior	B3E6H3	1/26/2017
28	Interior	B3E6H4	1/26/2017
28	Interior	B3E6H5	1/26/2017
28	Interior	B3E6H6	1/26/2017
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28	Interior	B3E6H8	1/26/2017
28	Interior	B3E6H9	1/26/2017
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28	Interior	B3E6I3	12/21/2016
28	Interior	B3E6I4	12/21/2016
28	Interior	B3E6I5	12/21/2016
28	Interior	B3E6I6	12/21/2016
28	Interior	B3E6I7	12/21/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3E6I8	12/21/2016
28	Interior	B3E6I9	12/21/2016
28	Interior	B3E6J3	12/21/2016
28	Interior	B3E6J4	12/21/2016
28	Interior	B3E6J5	12/21/2016
28	Interior	B3E6J6	12/21/2016
28	Interior	B3E6J7	12/21/2016
28	Interior	B3E6J8	12/21/2016
28	Interior	B3E6J9	12/21/2016
28	Interior	B3F6A0	12/20/2016
28	Interior	B3F6A3	12/20/2016
28	Interior	B3F6A4	12/20/2016
28	Interior	B3F6A5	12/20/2016
28	Interior	B3F6A6	12/20/2016
28	Interior	B3F6A7	12/20/2016
28	Interior	B3F6A8	12/20/2016
28	Interior	B3F6A9	12/20/2016
28	Interior	B3F6B0	12/20/2016
28	Interior	B3F6B4	12/20/2016
28	Interior	B3F6B5	12/20/2016
28	Interior	B3F6B6	12/20/2016
28	Interior	B3F6B7	12/20/2016
28	Interior	B3F6B8	12/20/2016
28	Interior	B3F6B9	12/20/2016
28	Interior	B3F6C0	12/12/2016
28	Interior	B3F6C4	7/18/2016
28	Interior	B3F6C5	7/18/2016
28	Interior	B3F6C6	7/18/2016
28	Interior	B3F6C7	7/18/2016
28	Interior	B3F6C8	12/12/2016
28	Interior	B3F6C9	12/12/2016
28	Interior	B3F6D0	12/12/2016
28	Interior	B3F6D5	7/18/2016
28	Interior	B3F6D6	7/18/2016
28	Interior	B3F6D7	7/18/2016
28	Interior	B3F6D8	12/12/2016
28	Interior	B3F6D9	12/12/2016
28	Interior	B3F6E0	12/12/2016
28	Interior	B3F6E5	7/18/2016
28	Interior	B3F6E6	7/18/2016
28	Interior	B3F6E7	7/18/2016
28	Interior	B3F6E8	7/18/2016
28	Interior	B3F6E9	12/12/2016
28	Interior	B3F6F0	12/12/2016
28	Interior	B3F6F6	7/18/2016
28	Interior	B3F6F7	7/18/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3F6F8	7/18/2016
28	Interior	B3F6F9	12/12/2016
28	Interior	B3F6G0	12/12/2016
28	Interior	B3F6G6	7/18/2016
28	Interior	B3F6G7	7/18/2016
28	Interior	B3F6G8	7/18/2016
28	Interior	B3F6G9	12/12/2016
28	Interior	B3F6H0	12/12/2016
28	Interior	B3F6H6	7/18/2016
28	Interior	B3F6H7	7/18/2016
28	Interior	B3F6H8	7/18/2016
28	Interior	B3F6H9	7/18/2016
28	Interior	B3F6I0	12/12/2016
28	Interior	B3F6I7	12/12/2016
28	Interior	B3F6I8	12/12/2016
28	Interior	B3F6I9	12/12/2016
28	Interior	B3F6J0	12/12/2016
28	Interior	B3F6J7	12/12/2016
28	Interior	B3F6J8	12/12/2016
28	Interior	B3F6J9	12/12/2016
28	Interior	B3F7F1	7/18/2016
28	Interior	B3F7G1	7/18/2016
28	Interior	B3F7H1	7/18/2016
28	Interior	B3F7I1	7/18/2016
28	Interior	B3F7I2	7/18/2016
28	Interior	B3F7J1	7/18/2016
28	Interior	B3F7J2	7/18/2016
28	Interior	B3F7J3	7/18/2016
28	Interior	B3G6A0	6/23/2016
28	Interior	B3G6A7	6/23/2016
28	Interior	B3G6A8	6/23/2016
28	Interior	B3G6A9	6/23/2016
28	Interior	B3G6B0	6/23/2016
28	Interior	B3G6B8	6/23/2016
28	Interior	B3G6B9	6/23/2016
28	Interior	B3G6C0	6/23/2016
28	Interior	B3G6C8	6/23/2016
28	Interior	B3G6C9	6/23/2016
28	Interior	B3G6D0	6/6/2016
28	Interior	B3G6D8	6/6/2016
28	Interior	B3G6D9	6/6/2016
28	Interior	B3G6E0	6/6/2016
28	Interior	B3G6E9	6/6/2016
28	Interior	B3G6F0	6/6/2016
28	Interior	B3G6F9	6/6/2016
28	Interior	B3G6G0	5/18/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3G6G9	5/18/2016
28	Interior	B3G6H0	5/18/2016
28	Interior	B3G6H9	5/18/2016
28	Interior	B3G7A1	6/23/2016
28	Interior	B3G7A2	6/23/2016
28	Interior	B3G7A3	6/23/2016
28	Interior	B3G7A4	6/23/2016
28	Interior	B3G7B1	6/23/2016
28	Interior	B3G7B2	6/23/2016
28	Interior	B3G7B3	6/23/2016
28	Interior	B3G7B4	6/23/2016
28	Interior	B3G7B5	6/23/2016
28	Interior	B3G7B6	6/23/2016
28	Interior	B3G7C1	6/23/2016
28	Interior	B3G7C2	6/23/2016
28	Interior	B3G7C3	6/23/2016
28	Interior	B3G7C4	6/23/2016
28	Interior	B3G7C5	6/23/2016
28	Interior	B3G7C6	6/23/2016
28	Interior	B3G7D1	6/6/2016
28	Interior	B3G7D2	6/6/2016
28	Interior	B3G7D3	6/6/2016
28	Interior	B3G7D4	6/23/2016
28	Interior	B3G7D5	6/23/2016
28	Interior	B3G7D6	6/23/2016
28	Interior	B3G7D7	6/23/2016
28	Interior	B3G7E1	6/6/2016
28	Interior	B3G7E2	6/6/2016
28	Interior	B3G7E3	6/6/2016
28	Interior	B3G7E4	6/6/2016
28	Interior	B3G7E5	6/6/2016
28	Interior	B3G7E6	6/6/2016
28	Interior	B3G7E7	6/6/2016
28	Interior	B3G7E8	5/18/2016
28	Interior	B3G7F1	6/6/2016
28	Interior	B3G7F2	6/6/2016
28	Interior	B3G7F3	6/6/2016
28	Interior	B3G7F4	6/6/2016
28	Interior	B3G7F5	6/6/2016
28	Interior	B3G7F6	6/6/2016
28	Interior	B3G7F7	6/6/2016
28	Interior	B3G7F8	5/18/2016
28	Interior	B3G7F9	5/18/2016
28	Interior	B3G7G0	5/18/2016
28	Interior	B3G7G1	5/18/2016
28	Interior	B3G7G2	5/18/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3G7G3	5/18/2016
28	Interior	B3G7G4	5/18/2016
28	Interior	B3G7G5	6/6/2016
28	Interior	B3G7G6	6/6/2016
28	Interior	B3G7G7	6/6/2016
28	Interior	B3G7G8	5/18/2016
28	Interior	B3G7G9	5/18/2016
28	Interior	B3G7H0	5/18/2016
28	Interior	B3G7H1	5/18/2016
28	Interior	B3G7H2	5/18/2016
28	Interior	B3G7H3	5/18/2016
28	Interior	B3G7H4	5/18/2016
28	Interior	B3G7H5	6/6/2016
28	Interior	B3G7H6	6/6/2016
28	Interior	B3G7H7	6/6/2016
28	Interior	B3G7H8	5/18/2016
28	Interior	B3G7H9	6/23/2016
28	Interior	B3G7I0	6/23/2016
28	Interior	B3G7I1	5/18/2016
28	Interior	B3G7I2	5/18/2016
28	Interior	B3G7I3	5/18/2016
28	Interior	B3G7I4	5/18/2016
28	Interior	B3G7I5	5/18/2016
28	Interior	B3G7I6	6/6/2016
28	Interior	B3G7I7	6/6/2016
28	Interior	B3G7I8	5/18/2016
28	Interior	B3G7I9	6/23/2016
28	Interior	B3G7J0	5/18/2016
28	Interior	B3G7J3	5/18/2016
28	Interior	B3G7J4	5/18/2016
28	Interior	B3G7J5	5/18/2016
28	Interior	B3G7J6	6/6/2016
28	Interior	B3G7J7	6/6/2016
28	Interior	B3G7J8	5/18/2016
28	Interior	B3G7J9	5/18/2016
28	Interior	B3G8H1	5/18/2016
28	Interior	B3G8I1	5/18/2016
28	Interior	B3G8I2	5/18/2016
28	Interior	B3G8J1	5/18/2016
28	Interior	B3G8J2	5/18/2016
28	Interior	B3H7A0	6/23/2016
28	Interior	B3H7A5	6/23/2016
28	Interior	B3H7A6	6/23/2016
28	Interior	B3H7A7	6/23/2016
28	Interior	B3H7A8	6/23/2016
28	Interior	B3H7A9	6/23/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3H7B0	6/23/2016
28	Interior	B3H7B6	6/23/2016
28	Interior	B3H7B7	6/23/2016
28	Interior	B3H7B8	6/23/2016
28	Interior	B3H7B9	6/23/2016
28	Interior	B3H7C0	6/23/2016
28	Interior	B3H7C8	6/23/2016
28	Interior	B3H7C9	6/23/2016
28	Interior	B3H7D0	6/23/2016
28	Interior	B3H7E0	6/6/2016
28	Interior	B3H7F0	6/6/2016
28	Interior	B3H7G0	5/9/2016
28	Interior	B3H7H0	5/9/2016
28	Interior	B3H7I0	5/9/2016
28	Interior	B3H8A1	6/23/2016
28	Interior	B3H8A2	6/23/2016
28	Interior	B3H8A3	6/23/2016
28	Interior	B3H8B1	6/23/2016
28	Interior	B3H8B2	6/23/2016
28	Interior	B3H8B3	6/23/2016
28	Interior	B3H8C1	6/23/2016
28	Interior	B3H8C2	6/23/2016
28	Interior	B3H8C3	6/23/2016
28	Interior	B3H8C4	6/23/2016
28	Interior	B3H8D1	6/23/2016
28	Interior	B3H8D2	6/23/2016
28	Interior	B3H8D3	6/23/2016
28	Interior	B3H8D4	6/23/2016
28	Interior	B3H8D5	6/23/2016
28	Interior	B3H8E1	6/6/2016
28	Interior	B3H8E2	6/6/2016
28	Interior	B3H8E3	6/6/2016
28	Interior	B3H8E4	6/6/2016
28	Interior	B3H8E5	6/6/2016
28	Interior	B3H8E6	6/6/2016
28	Interior	B3H8F1	6/6/2016
28	Interior	B3H8F2	6/6/2016
28	Interior	B3H8F3	6/6/2016
28	Interior	B3H8F4	6/6/2016
28	Interior	B3H8F5	6/6/2016
28	Interior	B3H8F6	6/6/2016
28	Interior	B3H8F7	6/6/2016
28	Interior	B3H8G1	5/9/2016
28	Interior	B3H8G2	5/9/2016
28	Interior	B3H8G3	5/9/2016
28	Interior	B3H8G4	5/9/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3H8G5	5/9/2016
28	Interior	B3H8G6	5/18/2016
28	Interior	B3H8G7	5/18/2016
28	Interior	B3H8G8	5/18/2016
28	Interior	B3H8H1	5/9/2016
28	Interior	B3H8H2	5/9/2016
28	Interior	B3H8H3	5/9/2016
28	Interior	B3H8H4	5/9/2016
28	Interior	B3H8H5	5/9/2016
28	Interior	B3H8H6	5/18/2016
28	Interior	B3H8H7	5/18/2016
28	Interior	B3H8H8	5/18/2016
28	Interior	B3H8I1	5/9/2016
28	Interior	B3H8I2	5/9/2016
28	Interior	B3H8I3	5/9/2016
28	Interior	B3H8I4	5/9/2016
28	Interior	B3H8I5	5/9/2016
28	Interior	B3H8I6	6/27/2016
28	Interior	B3H8I7	5/18/2016
28	Interior	B3H8I8	5/18/2016
28	Interior	B3H8I9	6/27/2016
28	Interior	B3H8J0	5/18/2016
28	Interior	B3H8J1	4/28/2016
28	Interior	B3H8J2	4/28/2016
28	Interior	B3H8J3	4/28/2016
28	Interior	B3H8J4	4/28/2016
28	Interior	B3H8J5	4/28/2016
28	Interior	B3H8J6	6/27/2016
28	Interior	B3H8J7	6/27/2016
28	Interior	B3H8J8	5/18/2016
28	Interior	B3H8J9	5/18/2016
28	Interior	B3I0G1	4/20/2016
28	Interior	B3I0H1	4/20/2016
28	Interior	B3I0H2	4/20/2016
28	Interior	B3I0H3	4/20/2016
28	Interior	B3I0I1	4/20/2016
28	Interior	B3I0I2	4/20/2016
28	Interior	B3I0I3	4/20/2016
28	Interior	B3I0I4	4/20/2016
28	Interior	B3I0J1	4/20/2016
28	Interior	B3I0J2	4/20/2016
28	Interior	B3I0J3	4/20/2016
28	Interior	B3I0J4	4/20/2016
28	Interior	B3I0J5	4/27/2016
28	Interior	B3I7B0	4/28/2016
28	Interior	B3I8A0	4/28/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3I8A1	4/28/2016
28	Interior	B3I8A2	4/28/2016
28	Interior	B3I8A3	4/28/2016
28	Interior	B3I8A4	4/28/2016
28	Interior	B3I8A5	4/28/2016
28	Interior	B3I8A6	6/27/2016
28	Interior	B3I8A7	4/28/2016
28	Interior	B3I8A8	4/28/2016
28	Interior	B3I8A9	4/28/2016
28	Interior	B3I8B0	4/28/2016
28	Interior	B3I8B1	4/28/2016
28	Interior	B3I8B2	4/28/2016
28	Interior	B3I8B3	4/28/2016
28	Interior	B3I8B4	4/28/2016
28	Interior	B3I8B5	6/27/2016
28	Interior	B3I8B6	4/28/2016
28	Interior	B3I8B7	4/28/2016
28	Interior	B3I8B8	4/28/2016
28	Interior	B3I8B9	4/28/2016
28	Interior	B3I8C0	6/27/2016
28	Interior	B3I8C2	4/28/2016
28	Interior	B3I8C3	4/28/2016
28	Interior	B3I8C4	4/28/2016
28	Interior	B3I8C5	4/28/2016
28	Interior	B3I8C6	6/27/2016
28	Interior	B3I8C7	4/28/2016
28	Interior	B3I8C8	6/27/2016
28	Interior	B3I8C9	6/27/2016
28	Interior	B3I8D0	6/27/2016
28	Interior	B3I8D5	4/28/2016
28	Interior	B3I8D6	4/28/2016
28	Interior	B3I8D7	4/28/2016
28	Interior	B3I8D8	6/27/2016
28	Interior	B3I8D9	4/28/2016
28	Interior	B3I8E0	4/28/2016
28	Interior	B3I8E7	4/28/2016
28	Interior	B3I8E8	4/28/2016
28	Interior	B3I8E9	4/28/2016
28	Interior	B3I8F0	4/28/2016
28	Interior	B3I8F9	4/28/2016
28	Interior	B3I9B1	4/28/2016
28	Interior	B3I9C1	4/28/2016
28	Interior	B3I9C2	4/28/2016
28	Interior	B3I9D1	6/27/2016
28	Interior	B3I9D2	4/28/2016
28	Interior	B3I9D3	4/28/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3I9E1	4/28/2016
28	Interior	B3I9E2	4/28/2016
28	Interior	B3I9E3	6/27/2016
28	Interior	B3I9E4	4/28/2016
28	Interior	B3I9E5	4/28/2016
28	Interior	B3I9E6	4/28/2016
28	Interior	B3I9E7	4/28/2016
28	Interior	B3I9E8	4/28/2016
28	Interior	B3I9E9	4/28/2016
28	Interior	B3I9F0	4/20/2016
28	Interior	B3I9F1	4/28/2016
28	Interior	B3I9F2	4/28/2016
28	Interior	B3I9F3	4/28/2016
28	Interior	B3I9F4	4/28/2016
28	Interior	B3I9F5	6/27/2016
28	Interior	B3I9F6	6/27/2016
28	Interior	B3I9F7	6/27/2016
28	Interior	B3I9F8	4/28/2016
28	Interior	B3I9F9	4/28/2016
28	Interior	B3I9G0	4/20/2016
28	Interior	B3I9G2	4/28/2016
28	Interior	B3I9G3	4/28/2016
28	Interior	B3I9G4	4/28/2016
28	Interior	B3I9G5	4/28/2016
28	Interior	B3I9G6	4/28/2016
28	Interior	B3I9G7	4/28/2016
28	Interior	B3I9G8	6/27/2016
28	Interior	B3I9G9	6/27/2016
28	Interior	B3I9H0	4/20/2016
28	Interior	B3I9H4	4/28/2016
28	Interior	B3I9H5	4/28/2016
28	Interior	B3I9H6	4/28/2016
28	Interior	B3I9H7	4/28/2016
28	Interior	B3I9H8	4/28/2016
28	Interior	B3I9H9	4/28/2016
28	Interior	B3I9I0	4/20/2016
28	Interior	B3I9I5	4/28/2016
28	Interior	B3I9I6	4/28/2016
28	Interior	B3I9I7	4/28/2016
28	Interior	B3I9I8	4/28/2016
28	Interior	B3I9I9	4/28/2016
28	Interior	B3I9J0	4/20/2016
28	Interior	B3I9J6	4/28/2016
28	Interior	B3I9J7	4/28/2016
28	Interior	B3I9J8	4/28/2016
28	Interior	B3I9J9	4/28/2016

Unit ID	Grid Type	Grid ID	Date Analog Surface Op QA Complete
28	Interior	B3J0A1	4/18/2016
28	Interior	B3J0A2	4/18/2016
28	Interior	B3J0A3	4/20/2016
28	Interior	B3J0A4	4/20/2016
28	Interior	B3J0A5	4/27/2016
28	Interior	B3J0A6	4/27/2016
28	Interior	B3J0A7	4/27/2016
28	Interior	B3J0A8	4/27/2016
28	Interior	B3J0B1	4/18/2016
28	Interior	B3J0B2	4/18/2016
28	Interior	B3J0B3	4/18/2016
28	Interior	B3J0B4	4/18/2016
28	Interior	B3J0B5	4/18/2016
28	Interior	B3J0B6	4/27/2016
28	Interior	B3J0B7	4/27/2016
28	Interior	B3J0B8	4/27/2016
28	Interior	B3J0B9	4/27/2016
28	Interior	B3J0C0	4/27/2016
28	Interior	B3J0C2	4/18/2016
28	Interior	B3J0C3	4/18/2016
28	Interior	B3J0C4	4/18/2016
28	Interior	B3J0C5	4/18/2016
28	Interior	B3J0C6	4/18/2016
28	Interior	B3J0C7	4/27/2016
28	Interior	B3J0C8	4/27/2016
28	Interior	B3J0C9	4/27/2016
28	Interior	B3J0D7	4/18/2016
28	Interior	B3J0D8	4/27/2016
28	Interior	B3J0D9	4/27/2016
28	Interior	B3J9A0	4/18/2016
28	Interior	B3J9A8	4/18/2016
28	Interior	B3J9A9	4/18/2016
28	Interior	B3J9B0	4/18/2016



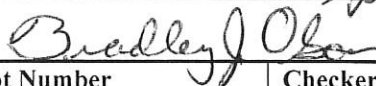
Appendix E

Explosives Accountability

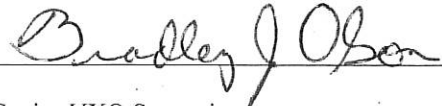
Form M-6

Team Number: UXO-3 Date: October 1, 2015

Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	6 Each	12MA12X1	305
Nonel (2,500 ft.)	4 Roll	27JY15W1	305
Det Cord – 100gr	110 Feet	07MY14B1	305
Det Cord – 50gr	650 Feet	16MY14B1	305
19 g Perforators	40 Each	#6	305
19 g Perforators	112 Each	17AUG15C1	305
EXPLOSIVES EXPENDED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	6 Each	12MA12X1	300
Nonel (2,500 ft.)	4 Roll	27JY15W1	300
Det Cord – 100gr	110 Feet	07MY14B1	300
Det Cord – 50gr	650 Feet	16MY14B1	300
19 g Perforators	40 Each	#6	300
19 g Perforators	112 Each	17AUG15C1	300
EXPLOSIVES RETURNED			
Signature of SUXOS: 			
Item	Quantity	Lot Number	Checker's Initials
None			

I certify the explosives listed above were used for their intended purpose.


 Senior UXO Supervisor

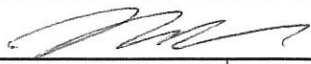
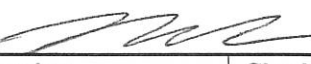
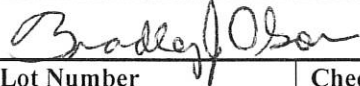
Date: October 1, 2015

10/15-0001

Form M-6


Team Number: UXO-3 Date: October 14, 2015

Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 Each	12MA12X1	325
Nonel (2,500 ft.)	2 Roll	27JY15W1	325
Det Cord - 100gr	60 Feet	07MY14B1	325
Det Cord - 50gr	140 Feet	16MY14B1	325
19 g Perforators	88 Each	17AUG15C1	325
19 g Perforators	15 Each	26AUG15C1	325
EXPLOSIVES EXPENDED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 Each	12MA12X1	325
Nonel (2,500 ft.)	2 Roll	27JY15W1	325
Det Cord - 100gr	60 Feet	07MY14B1	325
Det Cord - 50gr	140 Feet	16MY14B1	325
19 g Perforators	88 Each	17AUG15C1	325
19 g Perforators	15 Each	26AUG15C1	325
EXPLOSIVES RETURNED			
Signature of SUXOS: 			
Item	Quantity	Lot Number	Checker's Initials
None			

n

I certify the explosives listed above were used for their intended purpose.





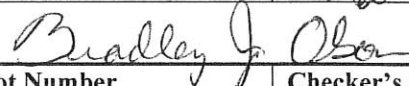
Date: October 14, 2015

Senior UXO Supervisor

Form M-6

Team Number: UXO-3 Date: June 22, 2016

Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	1 ea.	16MA15X1	300
Caps (Detonators)	1 ea.	12MA12X1	300
Nonel (2,500 ft.)	2 roll	27JY15W1	300
Det Cord – 100gr	310 feet	07MY14B1	300
Det Cord – 50gr	70 ft.	16MY14B1	300
19 g Perforators	1 ea.	26AUG15C1	300
EXPLOSIVES EXPENDED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	1 ea.	16MA15X1	300
Caps (Detonators)	1 ea.	12MA12X1	300
Nonel (2,500 ft.)	2 roll	27JY15W1	300
Det Cord – 100gr	310 feet	07MY14B1	300
Det Cord – 50gr	70 ft.	16MY14B1	300
19 g Perforators	1 ea.	26AUG15C1	300
EXPLOSIVES RETURNED			
			Signature of SUXOS: 
Item	Quantity	Lot Number	Checker's Initials
<i>None</i>			
 			
 			
 			

I certify the explosives listed above were used for their intended purpose.



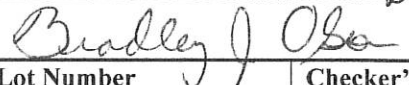

 Senior UXO Supervisor

Date: June 22, 2016

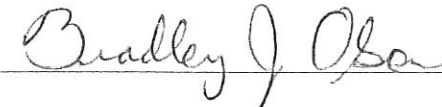
Form M-6

Team Number: UXO-3 Date: October 12, 2016

Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	4 ea.	16MA15X1	30
Nonel (2,500 ft.)	2 roll	27JY15W1	30
Det Cord – 100gr	300 feet	15MY15B2	30
Det Cord – 50gr	440 ft.	16MY14B1	30
19 g Perforators	179 ea.	26AUG15C1	30
EXPLOSIVES EXPENDED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	4 ea.	16MA15X1	30
Nonel (2,500 ft.)	2 roll	27JY15W1	30
Det Cord – 100gr	300 feet	15MY15B2	30
Det Cord – 50gr	440 ft.	16MY14B1	30
19 g Perforators	179 ea.	26AUG15C1	30
EXPLOSIVES RETURNED			
			Signature of SUXOS: 
Item	Quantity	Lot Number	Checker's Initials
<i>None</i>			

I certify the explosives listed above were used for their intended purpose.


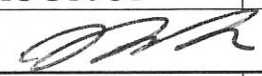
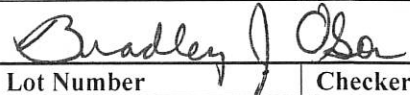

 Senior UXO Supervisor

Date: October 12, 2016

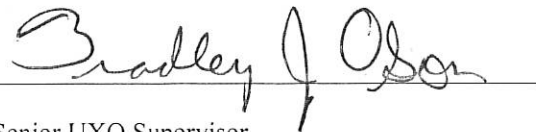
Form M-6

Team Number: UXO-3 Date: November 30, 2016

Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	120 ft.	15MY15B2	NS
Det Cord – 50gr	380 ft.	16MY14B1	NS
19 g Perforators	136 ea.	24AUG16C1	NS
EXPLOSIVES EXPENDED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	120 ft.	15MY15B2	NS
Det Cord – 50gr	380 ft.	16MY14B1	NS
19 g Perforators	136 ea.	24AUG16C1	NS
EXPLOSIVES RETURNED			
			Signature of SUXOS: 
Item	Quantity	Lot Number	Checker's Initials
<i>None</i>			

I certify the explosives listed above were used for their intended purpose.



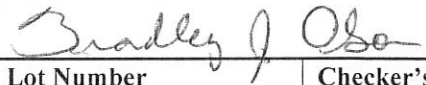


Senior UXO Supervisor

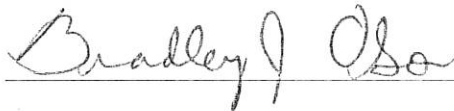
Date: November 30, 2016

Form M-6

Team Number: UXO-3 Date: December 13, 2016Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	100 ft.	15MY15B2	NS
Det Cord – 50gr	150 ft.	16MY14B1	NS
19 g Perforators	174 ea.	24AUG16C1	NS
EXPLOSIVES EXPENDED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	100 ft.	15MY15B2	NS
Det Cord – 50gr	150 ft.	16MY14B1	NS
19 g Perforators	174 ea.	24AUG16C1	NS
EXPLOSIVES RETURNED			
Signature of SUXOS: 			
Item	Quantity	Lot Number	Checker's Initials
None			

I certify the explosives listed above were used for their intended purpose.





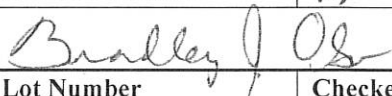
Senior UXO Supervisor

Date: December 13, 2016

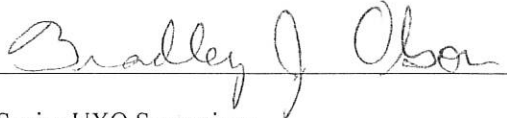
Form M-6

Team Number: UXO-3 Date: December 21, 2016

Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	4 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	40 ft.	15MY15B2	NS
Det Cord – 50gr	110 ft.	16MY14B1	NS
19 g Perforators	34 ea.	24AUG16C1	NS
EXPLOSIVES EXPENDED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	4 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	40 ft.	15MY15B2	NS
Det Cord – 50gr	110 ft.	16MY14B1	NS
19 g Perforators	34 ea.	24AUG16C1	NS
EXPLOSIVES RETURNED			
			Signature of SUXOS: 
Item	Quantity	Lot Number	Checker's Initials
<i>None</i>			



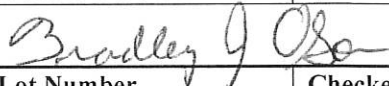
I certify the explosives listed above were used for their intended purpose.


 Senior UXO Supervisor

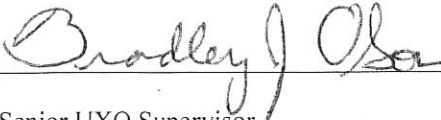
Date: December 21, 2016

Form M-6

Team Number: UXO-3 Date: February 8, 2017Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	8 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	70 ft.	15MY15B2	NS
Det Cord – 50gr	190 ft.	16MY14B1	NS
19 g Perforators	23 ea.	30NOV16C1	NS
19 g Perforators	17 ea.	24AUG16C1	NS
EXPLOSIVES EXPENDED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	8 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	70 ft.	15MY15B2	NS
Det Cord – 50gr	190 ft.	16MY14B1	NS
19 g Perforators	23 ea.	30NOV16C1	NS
19 g Perforators	17 ea.	24AUG16C1	NS
EXPLOSIVES RETURNED			
			Signature of SUXOS: 
Item	Quantity	Lot Number	Checker's Initials
<i>None</i>			



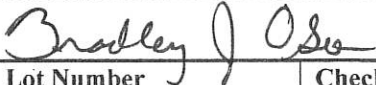
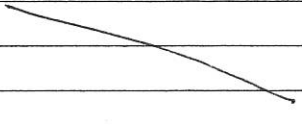
I certify the explosives listed above were used for their intended purpose.


 Senior UXO Supervisor

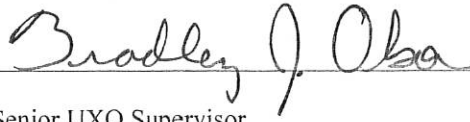
Date: February 08, 2017

Form M-6

Team Number: UXO-3 Date: February 22, 2017Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	90 ft.	15MY15B2	NS
Det Cord – 50gr	180 ft.	16MY14B1	NS
19 g Perforators	110 ea.	30NOV16C1	NS
EXPLOSIVES EXPENDED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	90 ft.	15MY15B2	NS
Det Cord – 50gr	180 ft.	16MY14B1	NS
19 g Perforators	110 ea.	30NOV16C1	NS
EXPLOSIVES RETURNED			
			Signature of SUXOS: 
Item	Quantity	Lot Number	Checker's Initials
	None		

I certify the explosives listed above were used for their intended purpose.



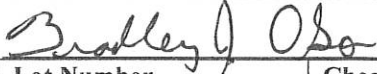

 Senior UXO Supervisor

Date: February 22, 2017

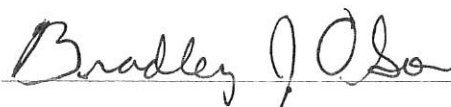
Form M-6

Team Number: UXO-3 Date: February 23, 2017

Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	100 ft.	15MY15B2	NS
Det Cord – 50gr	180 ft.	16MY14B1	NS
19 g Perforators	115 ea.	30NOV16C1	NS
EXPLOSIVES EXPENDED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	100 ft.	15MY15B2	NS
Det Cord – 50gr	180 ft.	16MY14B1	NS
19 g Perforators	115 ea.	30NOV16C1	NS
EXPLOSIVES RETURNED			
			Signature of SUXOS: 
Item	Quantity	Lot Number	Checker's Initials
None			



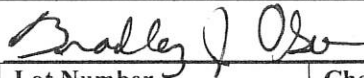
I certify the explosives listed above were used for their intended purpose.


Senior UXO Supervisor

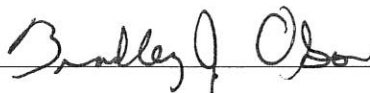
Date: February 23, 2017

Form M-6

Team Number: UXO-3 Date: March 28, 2017Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	4 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	30 ft.	15MY15B2	NS
Det Cord – 50gr	60 ft.	16MY14B1	NS
Det Cord – 50gr	5 ft.	11JL16B1	NS
19 g Perforators	9 ea.	30NOV16C1	NS
EXPLOSIVES EXPENDED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	4 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	30 ft.	15MY15B2	NS
Det Cord – 50gr	60 ft.	16MY14B1	NS
Det Cord – 50gr	5 ft.	11JL16B1	NS
19 g Perforators	9 ea.	30NOV16C1	NS
EXPLOSIVES RETURNED			
Signature of SUXOS: 			
Item	Quantity	Lot Number	Checker's Initials
<i>None</i>			

I certify the explosives listed above were used for their intended purpose.



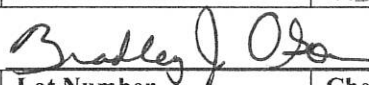


Senior UXO Supervisor

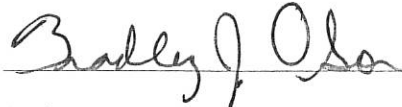
Date: March 28, 2017

Form M-6

Team Number: UXO-3 Date: March 29, 2017Team Leader: Sarabia Project: Fort Ord MMRP



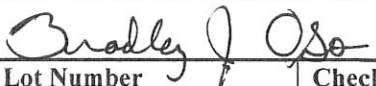
EXPLOSIVES ISSUED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	100 ft.	15MY15B2	NS
Det Cord – 50gr	100 ft.	11JL16B1	NS
19 g Perforators	72 ea.	30NOV16C1	NS
EXPLOSIVES EXPENDED			
			Signature of Team Leader: 
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	16MA15X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	100 ft.	15MY15B2	NS
Det Cord – 50gr	100 ft.	11JL16B1	NS
19 g Perforators	72 ea.	30NOV16C1	NS
EXPLOSIVES RETURNED			
			Signature of SUXOS: 
Item	Quantity	Lot Number	Checker's Initials
<i>None</i>			

I certify the explosives listed above were used for their intended purpose.

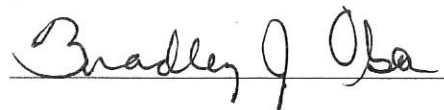

 Senior UXO Supervisor
Date: March 29, 2017

Form M-6

Team Number: UXO-3 Date: May 03, 2017Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	26SE16X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	10 ft.	15MY15B2	NS
19 g Perforators	14 ea.	30NOV16C1	NS
EXPLOSIVES EXPENDED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	26SE16X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	10 ft.	15MY15B2	NS
19 g Perforators	14 ea.	30NOV16C1	NS
EXPLOSIVES RETURNED			
Signature of SUXOS: 			
Item	Quantity	Lot Number	Checker's Initials
None			

I certify the explosives listed above were used for their intended purpose.



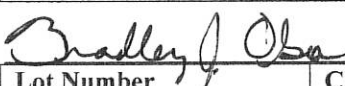


Date: May 03, 2017

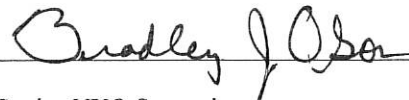
Senior UXO Supervisor

Form M-6

Team Number: UXO-3 Date: May 08, 2017Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	26SE16X1	NS
Nonel (2,500 ft.)	1 roll	07DE16G1	NS
Det Cord – 100gr	5 ft.	15MY15B2	NS
19 g Perforators	1 ea.	30NOV16C1	NS
EXPLOSIVES EXPENDED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	26SE16X1	NS
Nonel (2,500 ft.)	1 roll	07DE16G1	NS
Det Cord – 100gr	5 ft.	15MY15B2	NS
19 g Perforators	1 ea.	30NOV16C1	NS
EXPLOSIVES RETURNED			
Signature of SUXOS: 			
Item	Quantity	Lot Number	Checker's Initials
<i>None</i>			



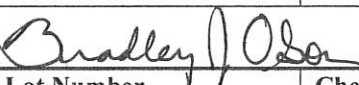
I certify the explosives listed above were used for their intended purpose.


 Senior UXO Supervisor

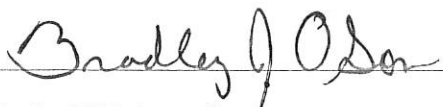
Date: May 08, 2017

Form M-6

Team Number: UXO-3 Date: May 17, 2017Team Leader: Sarabia Project: Fort Ord MMRP

EXPLOSIVES ISSUED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	26SE16X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	150 ft.	15MY15B2	NS
Det Cord – 50gr	120 ft.	11JY16B1	NS
19 g Perforators	66 ea.	30NOV16C1	NS
EXPLOSIVES EXPENDED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
Caps (Detonators)	2 ea.	26SE16X1	NS
Nonel (2,500 ft.)	2 roll	07DE16G1	NS
Det Cord – 100gr	150 ft.	15MY15B2	NS
Det Cord – 50gr	120 ft.	11JY16B1	NS
19 g Perforators	66 ea.	30NOV16C1	NS
EXPLOSIVES RETURNED			
Signature of SUXOS: 			
Item	Quantity	Lot Number	Checker's Initials
None			

I certify the explosives listed above were used for their intended purpose.


 Senior UXO Supervisor

Date: May 17, 2017

Appendix F

MRS-BLM Unit 28 MEC

Remedial Action

Technical Memorandum

MRS-BLM Unit 28 MEC Remedial Action Technical Memorandum Former Fort Ord, California

Prepared for:

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November 2017

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Unit 28 MEC Remedial Action Technical Memorandum

1.0 Introduction

This Technical Memorandum (TM) describes the munitions and explosives of concern (MEC) remedial action (RA) that was performed by KEMRON Environmental Services (KEMRON) with Gilbane as a subcontractor within Munitions Response Site (MRS) - Bureau of Land Management (BLM) Unit 28 (Figure 1). Field work at the site was initiated in July 2015 (vegetation mastication) and was completed in June 2017 (digital geophysical mapping [DGM]). This TM summarizes the work applicable to Unit 28 that was conducted in accordance with the *Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, California* (Final SSWP; KEMRON, 2016) and Field Work Variance (FWV) 010, which is described further in Section 3.0. Work completed in the southern portion of Unit 28 to support planned prescribed burns was conducted in accordance with the *Final Site-Specific Work Plan, Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 23 and in Support of Units 11 and 12 Prescribed Burns (includes portions of Units 5A, 9, 25, 28 and 31, Former Fort Ord, California* (Final Unit 23 SSWP; KEMRON, 2015). In this TM, the "project area" does not include the permanent fuel breaks surrounding the units nor the footprint of the Military Operations in Urban Terrain (MOUT) Site 100-foot buffer. Subsurface MEC removal within the MOUT Site 100-foot buffer was previously reported in the *Draft Final Technical Information Paper (TIP), MOUT Site Buffer, MEC Remedial Action, Former Fort Ord, California* (ITSI-Gilbane, 2014).

1.1 Site Location

Unit 28 is approximately 107 acres and is located in the northeastern portion of the MRA, within the MRS-BLM. Unit 28 lies to the east of Riso Ridge Road, west of Impossible Canyon Road, north of Hawkeye Road, and ends to the north at Tongue Ridge. Figure 1 provides a location map of Unit 28.

1.2 Purpose

The *Final Work Plan, Remedial Design/Remedial Action (RD/RA), Track 3 Impact Area MRA, former Fort Ord, California* (U.S. Army Corps of Engineers [USACE], 2009) specifies that the U.S. Department of the Army (Army) will prepare a TM for the U.S. Environmental Protection Agency (EPA) and California Department of Toxic Substances Control (DTSC) to present a review of the results of both the surface remediation and the DGM data.

The TM is to evaluate surface remediation and DGM information to determine if additional subsurface remediation is required, based on information gathered following completion of the Final SSWP (KEMRON, 2016), or as requested by the future property recipient and identified in coordination with the Army. This TM provides the following information:

- Scope of Work ([Section 2.0](#)) for Unit 28;
- Remedial work completed at Unit 28, and reasons for remedial work modifications for Unit 28, if any;
- Summary of MEC and munitions debris (MD) ([Section 4.0](#)) removed from Unit 28 during technology-aided surface MEC removal activities;
- Observation of evidence of potential soil contamination for evaluation under the Site 39/Basewide Range Assessment (BRA) Program ([Section 5.0](#));
- Detail regarding any recommendations for subsurface MEC remediation within Unit 28, either specific to portions of the site or as a whole;
- Conclusions/Summary of Recommendations ([Section 7.0](#)) for Unit 28, either specific to portions of the site or as a whole.

2.0 *Scope of Work*

The scope of work for the project addressed in this TM included vegetation clearance, technology-aided surface MEC removal, and DGM survey across Unit 28. Unit 28 totals approximately 107 acres. The “project area” discussed in this TM constitutes 102 acres where surface removal and DGM were conducted. The MOUT Site 100-foot Buffer is not addressed in this TM.

[Figure 1](#) provides a general site layout of Unit 28.

2.1 *Vegetation Clearance*

Vegetation clearance in the southern portion of Unit 28 to support planned prescribed burns began in July 2015 and was completed in August 2015. Vegetation clearance in the remainder of Unit 28 was completed in January 2016. Mechanical mastication was performed in all accessible areas, approximately 61 acres. In areas where mechanical mastication could not be performed, manual vegetation removal was performed in accessible areas, approximately 25 acres. Due to extreme terrain, approximately 15 acres did not receive vegetation removal ([See Figure 1 of FWV 010](#)). Approximately one acre within Unit 28 did not require vegetation clearance due to a lack of vegetation.

2.2 *Technology-Aided Surface Munitions and Explosives of Concern Removal*

Technology-aided surface MEC removal in the southern portion of Unit 28 to support planned prescribed burns began in September 2015 and was completed in October 2015. Technology-aided surface MEC removal in the remainder of Unit 28 restarted April 2016 and was completed in May 2017. Lanes approximately five feet in width were placed across grids and Schonstedt magnetometers were used by unexploded ordnance (UXO) personnel to conduct surface MEC removal. Prior to the RA, seven MEC (UXO) items were recovered from Unit 28 and are shown in [Table 1](#) and [Figure 2](#). During the vegetation clearance and technology-aided surface MEC removal, 212 MEC items were recovered and are shown in [Tables 2](#) and [4](#) and [Figure 5](#). Cumulative results for the Unit 28 RA are shown in [Tables 3](#) and [5](#). Quality control/quality assurance (QC/QA) processes were implemented in accordance with the Final SSWP (KEMRON, 2016). The planned surface MEC removal grids are shown in [Figure 2](#).

Approximately 12 acres of Unit 28 has been determined by UXO safety personnel to be inaccessible to surface MEC removal due to extreme terrain (See [Figure 2 of FWV 010](#)).

2.3 Digital Geophysical Mapping Survey

The DGM survey was conducted with vehicle-towed EM61-MK2A arrays in November 2015 (southern portion of Unit 28 in support of prescribed burns) and was completed in June 2017 (remainder of Unit 28). [Figure 3](#) depicts the DGM data collected at Unit 28. Cumulative results for the Unit 28 RA are shown in [Tables 3](#) and [5](#). Measurement quality objectives were met and QC/QA processes were implemented in accordance with the Final SSWP (KEMRON, 2016). [Appendix C](#) includes the USACE DGM QA Approval and Discussion for Unit 28.

Due to extreme terrain within Unit 28, approximately 39 acres were inaccessible to DGM survey. These areas are visible on [Figure 3](#). These areas were documented in FWV 010 discussed in [Section 3.0](#) and included in [Appendix A](#) of this document.

3.0 *Approved Changes During Field Work*

Unit 28 work was performed in accordance with the Final Unit 23 SSWP (KEMRON, 2015) and Final SSWP (KEMRON, 2016), with the following exceptions documented by the FWV included in [Appendix A](#) and outlined below:

- 010 (AR# OE-0859b.2) Noted areas where vegetation removal, surface MEC removal and DGM survey were and were not completed. Approximately 12 acres of Unit 28 was determined by UXO safety personnel to be inaccessible to surface MEC removal due to extreme terrain. Approximately 39 acres of Unit 28 was determined by UXO safety personnel to be inaccessible to DGM survey due to extreme terrain. Recommended an evaluation in the TM based on the results of the surface MEC removal and DGM data to determine the likelihood of surface MEC remaining in the 12 acres.

4.0 *Summary of MEC/MD Removed*

Seven MEC (UXO) items were encountered and removed from Unit 28 as part of activities which occurred prior to the activities described in this TM. These items are also shown in [Table 1](#) and [Figure 2](#).

Two hundred and twelve MEC items were encountered and removed as part of MEC remediation activities described in this TM. All MEC items removed as part of MEC remediation activities described in this TM are shown in [Tables 2](#) and [4](#). These MEC items are shown in [Figure 5](#).

The MD removed from Unit 28 as part of MEC remediation activities described in this TM was recorded based on weight per 100-foot by 100-foot grid. An estimated 24,583 pounds of MD were removed. Density of MD weights by grid are shown on [Figure 4](#).

Targets and target debris remaining within Unit 28 were removed and recycled to allow surface MEC removal and DGM to be conducted. No latrine pits were documented as part of this RA. Range-Related Debris (RRD) and Other Debris (OD) removed as part of MEC remediation activities described in this TM was recorded based on weight per 100-foot by 100-foot grid. An estimated 34,780 pounds of RRD and OD were removed as part of MEC remediation activities.

5.0 Observations of Evidence of Potential Soil Contamination

During field operations, UXO field personnel noted the presence of any features or items that might indicate small arms training, including, but not limited to, mounds and berms, structures, and concentrations of bullets, machine gun links and other munitions-related items. This information has been provided to BRA personnel and is being used as part of the BRA program. Reconnaissance and identification of potential sampling locations is complete. Development of a sampling plan is in progress.

6.0 *Recommendations for Additional Subsurface MEC Remediation*

The Track 3 Record of Decision (ROD) identifies the types of areas where additional work (e.g., subsurface MEC removal) would be conducted. Other than the network of fuel break roads and 100-foot buffers, subsurface MEC removals can be conducted in areas to address specific risk and/or land use needs, such as BLM restoration sites. These areas are to be identified in the TM and evaluated.

Factors that will be considered when determining whether additional actions are necessary include, but are not limited to: (1) explosive hazards associated with MEC recovered; (2) the proximity to potential receptors; (3) the density of MEC recovered; and (4) consistency with Applicable or Relevant and Appropriate Requirements (e.g., Habitat Management Plan and Biological Opinions).

Based on the Final SSWP (KEMRON, 2016), sensitive fuze type munitions were expected in Unit 28. During the MR described in this TM, 119 MEC items with sensitive fuzes were encountered and removed. MEC items with sensitive fuzes and historic target locations are shown in [Table 6](#) and [Figure 6](#). All MEC items with sensitive fuzes removed in Unit 28 were located in the southern third of the unit, southeast of the intersection of Chinook Road and Riso Ridge. This southern third of the unit is identified as an area of concern in Unit 28 with regard to the potential for MEC items with sensitive fuzes to remain in the shallow subsurface. This area also coincides with a relatively higher density of recovered MD ([Figure 4](#)), recovered RRD and OD. It also coincides with a relatively higher density of subsurface metal as shown on [Figure 3](#).

The Army is currently conducting a field study designed to provide more information about how areas/grids where MEC of the type containing sensitive fuzes were recovered during surface removal could be addressed in the future. A recommendation on this issue will be deferred until after the completion of the field study and the short term recommendations for the southern third of Unit 28 are as follows:

- Areas where MEC with sensitive fuzes were located will be monitored with enhanced procedures during annual surface area monitoring,

- All future MEC removal actions be monitored for indications of subsurface MEC with sensitive fuzes,
- Authorized personnel entering this unit will initially receive updated MEC safety and recognition training.

A joint Army-BLM inspection summary is provided in [Appendix B](#). This summary describes areas such as erosion features and a reroute where planned reuse by the BLM may require additional subsurface MEC removal. Figures detailing these areas are included as part of [Appendix B](#).

No additional subsurface MEC removal beyond that discussed in the joint Army-BLM inspection summary is recommended for Unit 28.

Approximately 12 acres of Unit 28 did not receive surface MEC removal. Based on the results of the surface MEC removal performed in adjacent areas and the DGM data collected in these same area, the likelihood of MEC remaining in this acreage is considered low. The inaccessible areas are marked by extreme terrain that is highly eroded. Munitions items that may have impacted these areas during training activities most likely ended up at the bottom of the slopes. Any items remaining on the surface at the bottom of the slope would have been removed during surface MEC removal activities ([Figure 5](#)).

7.0 *Conclusions/Summary of Recommendations*

Technology-aided surface MEC removal has been completed in all accessible grids within Unit 28. Areas where technology-aided surface MEC removal was and was not completed are shown on [Figure 5](#). Technology-aided surface MEC removal and DGM survey in Unit 28 occurred as intended within the scope of work. Areas where DGM survey was not performed are shown on [Figure 3](#). A summary of survey and removal methods completed by total grids for the Unit 28 RA is shown in [Table 5](#).

RA objectives have been met for this unit. No additional subsurface MEC remediation beyond that discussed in the joint Army-BLM inspection summary is recommended for Unit 28. Based on the results of the surface MEC removal performed in Unit 28, the likelihood of MEC remaining in the 12 acre area where surface MEC removal was not performed is considered low. No additional surface MEC remediation is recommended for Unit 28.

8.0 *References*

Gilbane, 2015, *Draft Final Impact Area MRA 100-foot Buffer, MEC Remedial Action, Technical Information Paper, Former Fort Ord, California.* (AR OE-0854A)

ITSI-Gilbane, 2014, *Draft Final Technical Information Paper, MOUT Site Buffer, MEC Remedial Action, Former Fort Ord, CA* (OE-0801A)

KEMRON, 2015, *Final Site-Specific Work Plan, Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 23 and in Support of Units 11 and 12 Prescribed Burns (includes portions of Units 5A, 9, 25, 28 and 31, Former Fort Ord, California* (OE-0862B)

KEMRON, 2016, *Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, California* (AR OE-0859B)

U.S. Army Corps of Engineers (USACE), 2009, *Final Work Plan, Remedial Design/Remedial Action, Track 3 Impact Area Munitions Response Area, Former Fort Ord, California.* (AR OE-0660K)

Tables

Table 1
MEC Items Encountered and Removed Prior to Operations Covered in TM

Date Found	Grid	Depth (in)	Qty	Unit	Item Type	Risk Code	Description
8/25/1993	LB3-MI08-SB10	0	1	28	UXO	3	Grenade, hand, fragmentation, M67
11/18/2003	LB3-MI09-SG10	0	1	28	UXO	999	Ash, Pyrotechnic
11/18/2003	LB3-MI09-SF08	0	1	28	UXO	1	Grenade, hand, practice, M69
9/26/2012	HA041	0	4	28	UXO	3	Projectile, 81mm, mortar, high explosive, M43 series

Table 2
MEC Items Encountered and Removed During Operations Covered in TM

Date Found	Item Number	Item Type	Qty	Description	Operation	Easting SP	Northing SP
6/2/2016	1467001	UXO	1	Fuze, grenade, igniting, M201	Surface Removal	5753565	2120312
5/11/2016	1467125	UXO	1	Fuze, grenade, igniting, M201	Surface Removal	5752545	2119515
4/11/2016	1467489	UXO	1	Fuze, grenade, igniting, M201	Surface Removal	5753802	2120430
6/8/2016	1467190	UXO	1	Fuze, grenade, hand, M206 series	Surface Removal	5752985	2120105
4/26/2016	1467274	DMM	1	Grenade, hand, fragmentation, M67	Surface Removal	5752620	2118930
5/23/2016	1467328	DMM	1	Grenade, hand, fragmentation, M67	Surface Removal	5752490	2119415
5/2/2016	1467076	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752522	2119636
5/2/2016	1467098	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752580	2119670
5/2/2016	1467123	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752515	2119610
5/11/2016	1467256	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752515	2119545
5/2/2016	1467298	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752520	2119630
5/31/2016	1467335	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752215	2119145
5/11/2016	1467392	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752540	2119560
5/11/2016	1467469	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752520	2119540
5/11/2016	1467510	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752530	2119555
4/26/2016	1467553	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752770	2119765
5/2/2016	1467583	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752547	2119626
5/2/2016	1467590	DMM	1	Grenade, hand, fragmentation, MK II	Surface Removal	5752510	2119635
1/17/2017	1470996	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1	Surface Removal	5750585	2115590
2/9/2017	1472247	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1	Surface Removal	5750410	2115710
4/6/2017	1474419	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1	Surface Removal	5750415	2115165
4/26/2017	1474837	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1	Surface Removal	5750450	2114945
4/27/2017	1474997	UXO	1	Grenade, rifle, smoke, white phosphorous, M19A1	Surface Removal	5750455	2114945
4/19/2017	1474666	UXO	1	Grenade, rifle, smoke, M22 series	Surface Removal	5750375	2115017
1/23/2017	1470871	UXO	1	Projectile, 4.2inch, mortar, high explosive, M3 series	Surface Removal	5750280	2115440
12/8/2016	1470136	UXO	1	Projectile, 4.2inch, mortar, high explosive, M329 series	Surface Removal	5750202	2115540
12/5/2016	1470006	UXO	1	Projectile, 37mm, high explosive, MK II	Surface Removal	5751285	2117040
9/18/2015	1464724	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750378	2114315
9/18/2015	1465053	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750450	2114330
9/16/2015	1465106	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750450	2114160
9/23/2015	1465390	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750353	2114512
11/16/2016	1470225	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750850	2116930
1/9/2017	1470321	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750179	2115090
1/9/2017	1470336	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750150	2115055
12/15/2016	1470491	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750342	2115514
1/12/2017	1470829	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750760	2116070
1/31/2017	1471691	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750428	2115605
2/6/2017	1471752	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750690	2115755
3/21/2017	1474023	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750390	2115305
4/26/2017	1474805	UXO	1	Projectile, 37mm, low explosive, MK I	Surface Removal	5750448	2114935
9/21/2015	1464744	UXO	9	Projectile, 40mm, high explosive, M381	Surface Removal	5750435	2114470
9/21/2015	1464878	UXO	1	Projectile, 40mm, high explosive, M381	Surface Removal	5750435	2114465
9/28/2015	1465172	UXO	13	Projectile, 40mm, high explosive, M381	Surface Removal	5750330	2114683
9/23/2015	1465245	UXO	1	Projectile, 40mm, high explosive, M381	Surface Removal	5750350	2114550
12/27/2016	1470040	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750115	2115115
12/21/2016	1470050	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5751030	2116650
12/6/2016	1470065	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750080	2115240
12/13/2016	1470085	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750130	2115615
12/5/2016	1470117	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750140	2115599
12/22/2016	1470210	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750070	2115175
12/5/2016	1470236	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750150	2115590
12/13/2016	1470520	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750180	2115612
12/27/2016	1470538	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750095	2115185
11/22/2016	1470563	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750635	2116740
1/19/2017	1470633	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750015	2115440
1/25/2017	1470726	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750170	2115450
5/3/2017	1474963	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750370	2114898
9/15/2015	1464910	UXO	1	Projectile, 40mm, parachute, star, M662	Surface Removal	5750512	2114120
10/1/2015	1465168	UXO	1	Projectile, 57mm, high explosive, M306 series	Surface Removal	5750335	2114742
9/22/2015	1465256	UXO	1	Projectile, 57mm, high explosive, M306 series	Surface Removal	5750135	2114845
9/30/2015	1465309	UXO	1	Projectile, 57mm, high explosive, M306 series	Surface Removal	5750214	2114785
10/1/2015	1465339	UXO	1	Projectile, 57mm, high explosive, M306 series	Surface Removal	5750362	2114741
10/1/2015	1465455	UXO	1	Projectile, 57mm, high explosive, M306 series	Surface Removal	5750425	2114715
10/1/2015	1465520	UXO	1	Projectile, 57mm, high explosive, M306 series	Surface Removal	5750425	2114730
9/30/2015	1465585	UXO	1	Projectile, 57mm, high explosive, M306 series	Surface Removal	5750247	2114723
2/28/2017	1473337	UXO	1	Projectile, 57mm, high explosive, M306 series	Surface Removal	5750640	2115825

Table 2
MEC Items Encountered and Removed During Operations Covered in TM

Date Found	Item Number	Item Type	Qty	Description	Operation	Easting SP	Northing SP
10/2/2015	1465411	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750212	2114907
9/22/2015	1465605	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750150	2114845
4/21/2016	1467347	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5752515	2119890
12/14/2016	1470013	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750175	2115290
12/28/2016	1470417	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750255	2115185
12/6/2016	1470492	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750050	2115541
1/24/2017	1471239	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750115	2115360
3/8/2017	1472838	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750320	2115420
3/6/2017	1473007	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750430	2115425
3/6/2017	1473167	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750430	2115445
3/28/2017	1473374	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750220	2115340
3/20/2017	1473388	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750350	2115365
3/27/2017	1473402	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750240	2115370
3/21/2017	1473526	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750330	2115310
3/27/2017	1473677	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750260	2115370
3/23/2017	1473906	UXO	1	Projectile, 60mm, mortar, high explosive, M49 series	Surface Removal	5750290	2115390
10/1/2015	1465114	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	Surface Removal	5750316	2114749
10/1/2015	1465197	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	Surface Removal	5750384	2114735
10/2/2015	1465493	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	Surface Removal	5750242	2114875
10/2/2015	1465564	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	Surface Removal	5750275	2114810
10/1/2015	1465636	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	Surface Removal	5750366	2114712
12/28/2016	1470510	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	Surface Removal	5750150	2115190
5/3/2017	1475191	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	Surface Removal	5750305	2114820
5/3/2017	1475272	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	Surface Removal	5750310	2114805
5/8/2017	1475401	UXO	1	Projectile, 81mm, mortar, high explosive, M43 series	Surface Removal	5750285	2114990
5/31/2016	1467021	UXO	1	Rocket, 2.36inch, high explosive antitank, M6	Surface Removal	5752450	2119195
6/13/2016	1467102	UXO	1	Rocket, 2.36inch, high explosive antitank, M6	Surface Removal	5751270	2118090
4/26/2016	1467116	UXO	1	Rocket, 2.36inch, high explosive antitank, M6	Surface Removal	5752975	2119770
6/13/2016	1467243	UXO	1	Rocket, 2.36inch, high explosive antitank, M6	Surface Removal	5751240	2118085
6/1/2016	1467472	UXO	1	Rocket, 2.36inch, high explosive antitank, M6	Surface Removal	5751710	2118280
6/13/2016	1467506	UXO	1	Rocket, 2.36inch, high explosive antitank, M6	Surface Removal	5751235	2118075
5/23/2016	1467508	UXO	1	Rocket, 2.36inch, high explosive antitank, M6	Surface Removal	5751480	2118570
6/21/2016	1468214	UXO	1	Rocket, 2.36inch, high explosive antitank, M6	Surface Removal	5751260	2117655
10/31/2016	1469795	UXO	1	Rocket, 2.36inch, high explosive antitank, M6	Surface Removal	5751220	2117935
5/24/2016	1467135	DMM	1	Rocket, 2.36inch, practice, M7	Surface Removal	5751540	2118460
9/21/2015	1464952	UXO	1	Rocket, 3.5inch, high explosive antitank, M28 series	Surface Removal	5750090	2114950
9/22/2015	1465189	UXO	1	Rocket, 3.5inch, high explosive antitank, M28 series	Surface Removal	5750160	2114830
10/2/2015	1465395	UXO	1	Rocket, 3.5inch, high explosive antitank, M28 series	Surface Removal	5750320	2114820
5/10/2016	1467209	UXO	1	Simulator, launching, antitank guided missile and rocket, M22	Surface Removal	5751385	2118520
1/11/2017	1470037	UXO	1	Projectile, 75mm, high explosive, MK I	Surface Removal	5750845	2116535
1/31/2017	1471356	UXO	1	Projectile, 90mm, high explosive antitank, M371A1	Surface Removal	5750490	2115660
11/22/2016	1469994	UXO	12	Projectile, 40mm, high explosive, M406	Surface Removal	5750735	2116740
11/22/2016	1470266	UXO	1	Projectile, 40mm, high explosive, M406	Surface Removal	5750710	2116710
11/22/2016	1470287	UXO	1	Projectile, 40mm, high explosive, M406	Surface Removal	5750705	2116706
11/22/2016	1470302	UXO	5	Projectile, 40mm, high explosive, M406	Surface Removal	5750703	2116707
11/22/2016	1470406	UXO	6	Projectile, 40mm, high explosive, M406	Surface Removal	5750730	2116730
11/22/2016	1470475	UXO	2	Projectile, 40mm, high explosive, M406	Surface Removal	5750707	2116710
12/8/2016	1470513	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750840	2116370
1/17/2017	1470603	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470615	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/18/2017	1470637	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750406	2115215
1/17/2017	1470686	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470695	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/18/2017	1470714	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2115215
1/18/2017	1470771	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2115215
1/19/2017	1470772	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750090	2115450
1/17/2017	1470808	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470810	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470811	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/25/2017	1470882	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750170	2115450
1/17/2017	1470896	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470899	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470908	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470941	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/19/2017	1470942	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750090	2115450
1/17/2017	1470945	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530

Table 2
MEC Items Encountered and Removed During Operations Covered in TM

Date Found	Item Number	Item Type	Qty	Description	Operation	Easting SP	Northing SP
1/17/2017	1470954	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/25/2017	1470991	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750160	2115470
1/18/2017	1471012	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2115230
1/18/2017	1471070	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750403	2115216
1/17/2017	1471098	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1471180	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1471190	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1471227	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1471245	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/18/2017	1471254	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750406	2115215
1/17/2017	1471270	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/30/2017	1471905	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750460	2115595
2/9/2017	1472296	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750410	2115710
3/7/2017	1473161	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750335	2115450
3/7/2017	1473254	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750335	2115450
3/7/2017	1473315	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750325	2115455
3/23/2017	1473387	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750290	2115390
3/23/2017	1473518	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750260	2115385
3/23/2017	1473762	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750275	2115390
3/23/2017	1473879	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750290	2115380
3/23/2017	1473887	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750290	2115380
5/3/2017	1474776	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1474801	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1474834	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1474850	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1474972	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475022	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475077	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475139	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475151	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475212	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475258	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475324	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475331	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475350	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
1/12/2017	1470609	UXO	1	Blocks, demo, C4	Surface Removal	5750845	2116040
5/26/2016	1467072	UXO	1	Grenade, hand, fragmentation, M26 Series	Surface Removal	5752485	2119240
5/11/2016	1467342	UXO	1	Grenade, hand, fragmentation, M26 Series	Surface Removal	5752535	2119515
5/17/2016	1467373	UXO	1	Grenade, hand, fragmentation, M26 Series	Surface Removal	5752705	2119405

Table 3
Cumulative Results

Parameter	Unit 28 Totals
Surface removal acreage	90
Analog subsurface removal acreage	0
Digital Subsurface removal acreage	0
DGM survey acreage	62
MEC items	212
Total Estimated MD Weight (lbs)	24,583
Total Estimated RRD and OD (lbs)	34,780

DGM - Digital Geophysical Mapping

MEC - Munitions and Explosives of Concern

MD - Munitions Debris

RRD - Range Related Debris

OD - Other Debris

Table 4
MEC Recovery Information

Description	Unit 28 Totals
Fuze, grenade, igniting, M201	3
Fuze, grenade, hand, M206 series	1
Grenade, hand, fragmentation, M67	2
Grenade, hand, fragmentation, MK II	12
Grenade, rifle, smoke, white phosphorous, M19A1	5
Grenade, rifle, smoke, M22 series	1
Projectile, 4.2inch, mortar, high explosive, M3 series	1
Projectile, 4.2inch, mortar, high explosive, M329 series	1
Projectile, 37mm, high explosive, MK II	1
Projectile, 37mm, low explosive, MK I	13
Projectile, 40mm, high explosive, M381	24
Projectile, 40mm, high explosive, M383	13
Projectile, 40mm, parachute, star, M662	1
Projectile, 57mm, high explosive, M306 series	8
Projectile, 60mm, mortar, high explosive, M49 series	16
Projectile, 81mm, mortar, high explosive, M43 series	9
Rocket, 2.36inch, high explosive antitank, M6	9
Rocket, 2.36inch, practice, M7	1
Rocket, 3.5inch, high explosive antitank, M28 series	3
Simulator, launching, antitank guided missile and rocket, M22	1
Projectile, 75mm, high explosive, MK I	1
Projectile, 90mm, high explosive antitank, M371A1	1
Projectile, 40mm, high explosive, M406	27
Cartridge, 40mm, high explosive, M383	54
Blocks, demo, C4	1
Grenade, hand, fragmentation, M26 Series	3

Table 5
Summary of Survey and Removal

Activity	Unit 28 Grids
Surface Removal	585
Analog Subsurface Removal	0
Digital Subsurface Removal	0
DGM Survey	515

DGM - Digital Geophysical Mapping

Table 6
Sensitive Fuze MEC Items Encountered and Removed During Operations Covered in TM

Date Found	Item Number	Item Type	Qty	Description	Operation	Easting SP	Northing SP
9/21/2015	1464744	UXO	9	Projectile, 40mm, high explosive, M381	Surface Removal	5750435	2114470
9/21/2015	1464878	UXO	1	Projectile, 40mm, high explosive, M381	Surface Removal	5750435	2114465
9/28/2015	1465172	UXO	13	Projectile, 40mm, high explosive, M381	Surface Removal	5750330	2114683
9/23/2015	1465245	UXO	1	Projectile, 40mm, high explosive, M381	Surface Removal	5750350	2114550
12/27/2016	1470040	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750115	2115115
12/21/2016	1470050	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5751030	2116650
12/6/2016	1470065	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750080	2115240
12/13/2016	1470085	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750130	2115615
12/5/2016	1470117	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750140	2115599
12/22/2016	1470210	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750070	2115175
12/5/2016	1470236	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750150	2115590
12/13/2016	1470520	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750180	2115612
12/27/2016	1470538	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750095	2115185
11/22/2016	1470563	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750635	2116740
1/19/2017	1470633	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750015	2115440
1/25/2017	1470726	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750170	2115450
5/3/2017	1474963	UXO	1	Projectile, 40mm, high explosive, M383	Surface Removal	5750370	2114898
1/31/2017	1471356	UXO	1	Projectile, 90mm, high explosive antitank, M371A1	Surface Removal	5750490	2115660
11/22/2016	1469994	UXO	12	Projectile, 40mm, high explosive, M406	Surface Removal	5750735	2116740
11/22/2016	1470266	UXO	1	Projectile, 40mm, high explosive, M406	Surface Removal	5750710	2116710
11/22/2016	1470287	UXO	1	Projectile, 40mm, high explosive, M406	Surface Removal	5750705	2116706
11/22/2016	1470302	UXO	5	Projectile, 40mm, high explosive, M406	Surface Removal	5750703	2116707
11/22/2016	1470406	UXO	6	Projectile, 40mm, high explosive, M406	Surface Removal	5750730	2116730
11/22/2016	1470475	UXO	2	Projectile, 40mm, high explosive, M406	Surface Removal	5750707	2116710
12/8/2016	1470513	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750840	2116370
1/17/2017	1470603	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470615	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/18/2017	1470637	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750406	2115215
1/17/2017	1470686	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470695	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/18/2017	1470714	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2115215
1/18/2017	1470771	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2115215
1/19/2017	1470772	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750090	2115450
1/17/2017	1470808	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470810	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470811	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/25/2017	1470882	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750170	2115450
1/17/2017	1470896	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470899	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470908	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470941	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/19/2017	1470942	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750090	2115450
1/17/2017	1470945	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1470954	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/25/2017	1470991	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750160	2115470
1/18/2017	1471012	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2115230
1/18/2017	1471070	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750403	2115216
1/17/2017	1471098	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1471180	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1471190	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/17/2017	1471227	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530

Table 6
Sensitive Fuze MEC Items Encountered and Removed During Operations Covered in TM

1/17/2017	1471245	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/18/2017	1471254	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750406	2115215
1/17/2017	1471270	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750530	2115530
1/30/2017	1471905	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750460	2115595
2/9/2017	1472296	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750410	2115710
3/7/2017	1473161	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750335	2115450
3/7/2017	1473254	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750335	2115450
3/7/2017	1473315	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750325	2115455
3/23/2017	1473387	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750290	2115390
3/23/2017	1473518	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750260	2115385
3/23/2017	1473762	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750275	2115390
3/23/2017	1473879	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750290	2115380
3/23/2017	1473887	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750290	2115380
5/3/2017	1474776	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1474801	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1474834	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1474850	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1474972	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475022	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475077	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475139	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475151	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475212	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475258	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475324	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475331	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998
5/3/2017	1475350	UXO	1	Cartridge, 40mm, high explosive, M383	Surface Removal	5750405	2114998

Note: An unarmed fuze poses a relatively lower hazard than an armed fuze.

Figures



MRS-BLM Unit 28 MEC Remedial Action
 Technical Memorandum
 Munitions and Explosives of Concern
 Former Fort Ord, California

Figure 1
 Unit 28
 Location Map



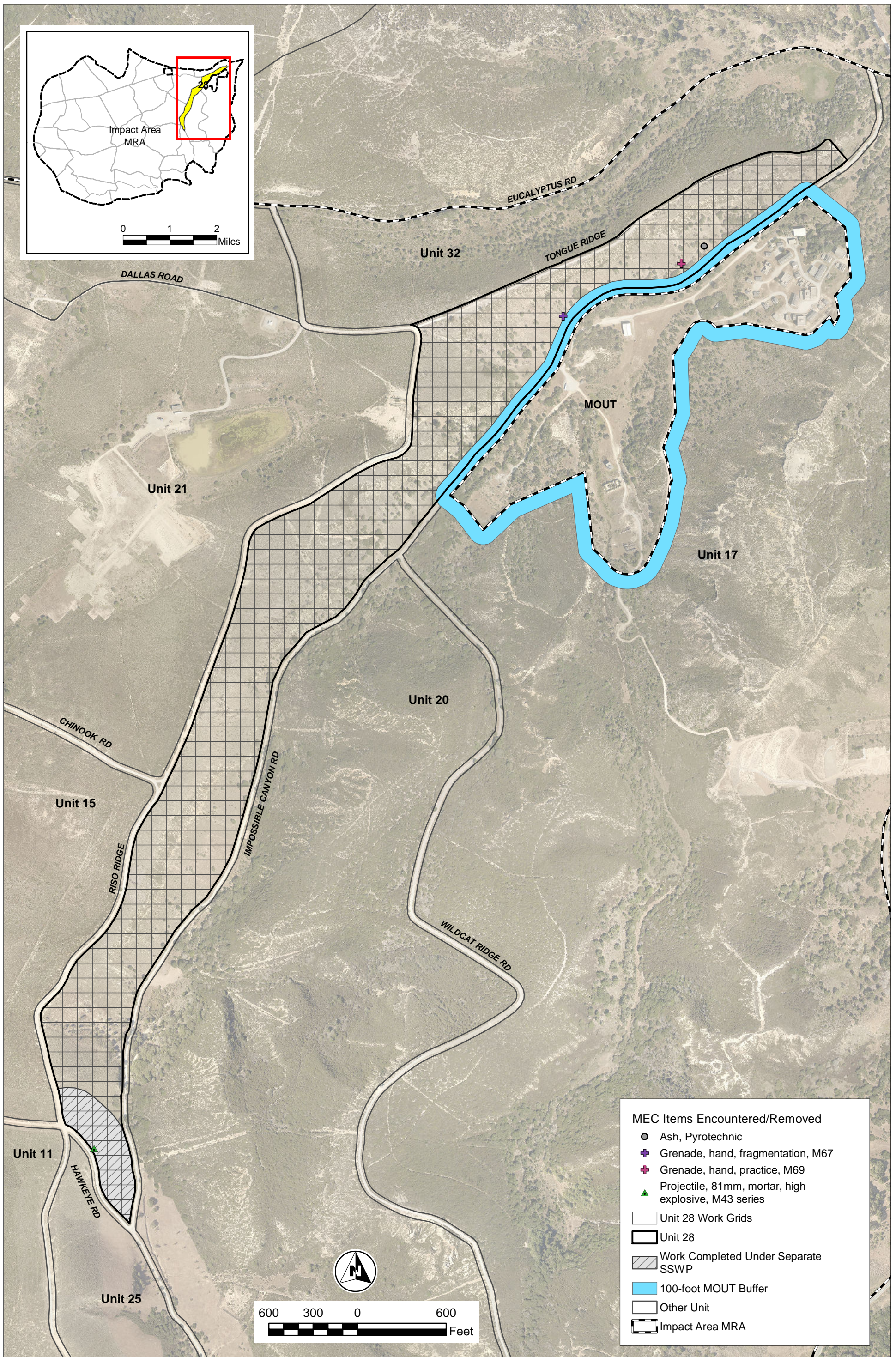


Figure 2

MEC Finds Prior to Remedial Action
Unit 28



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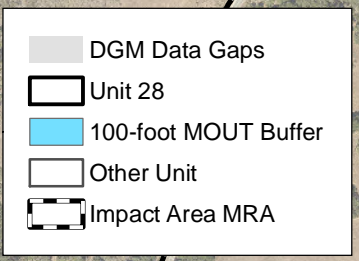
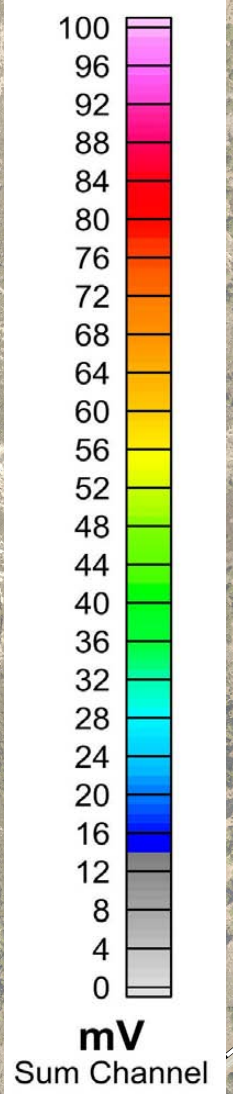
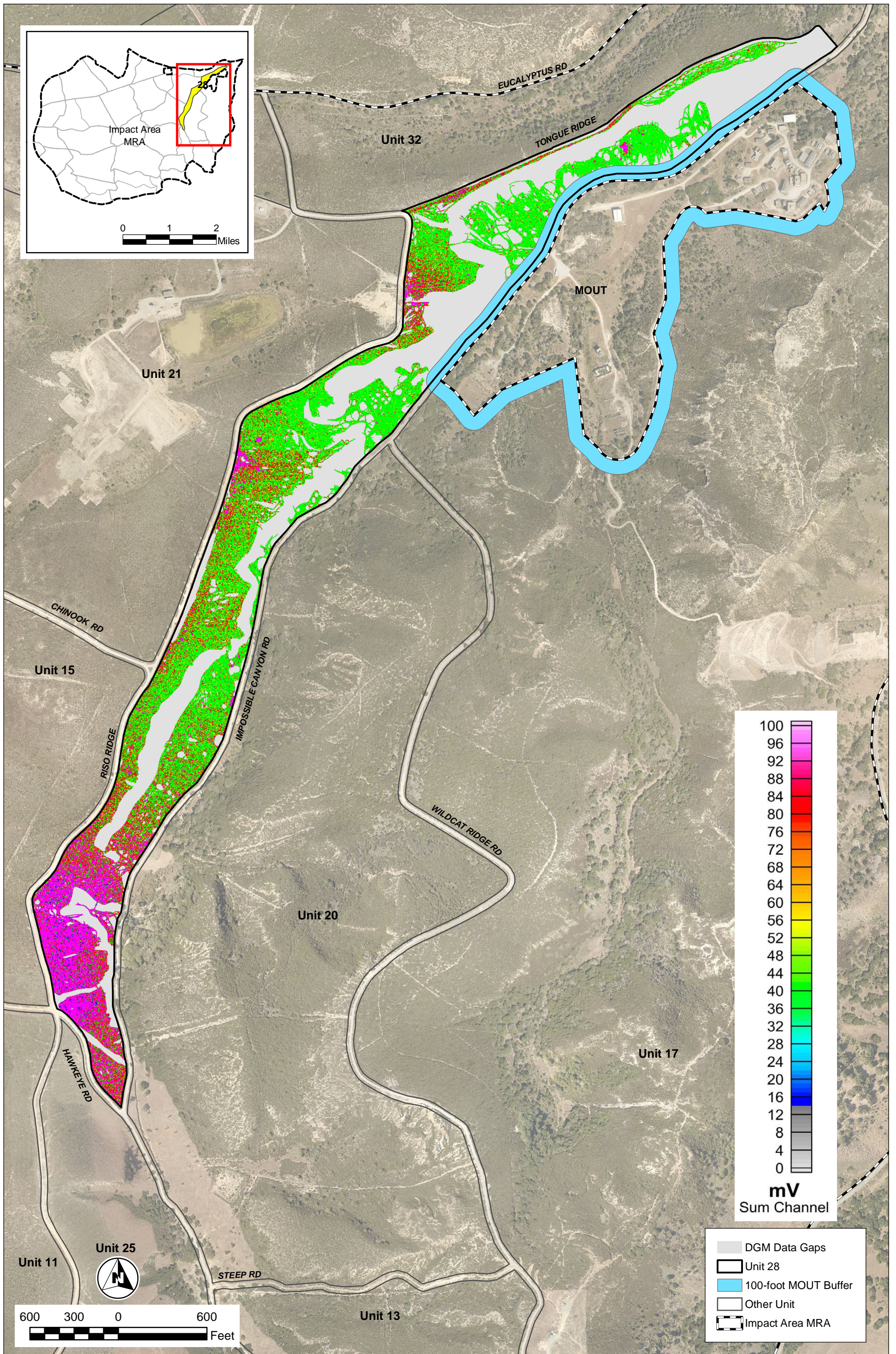
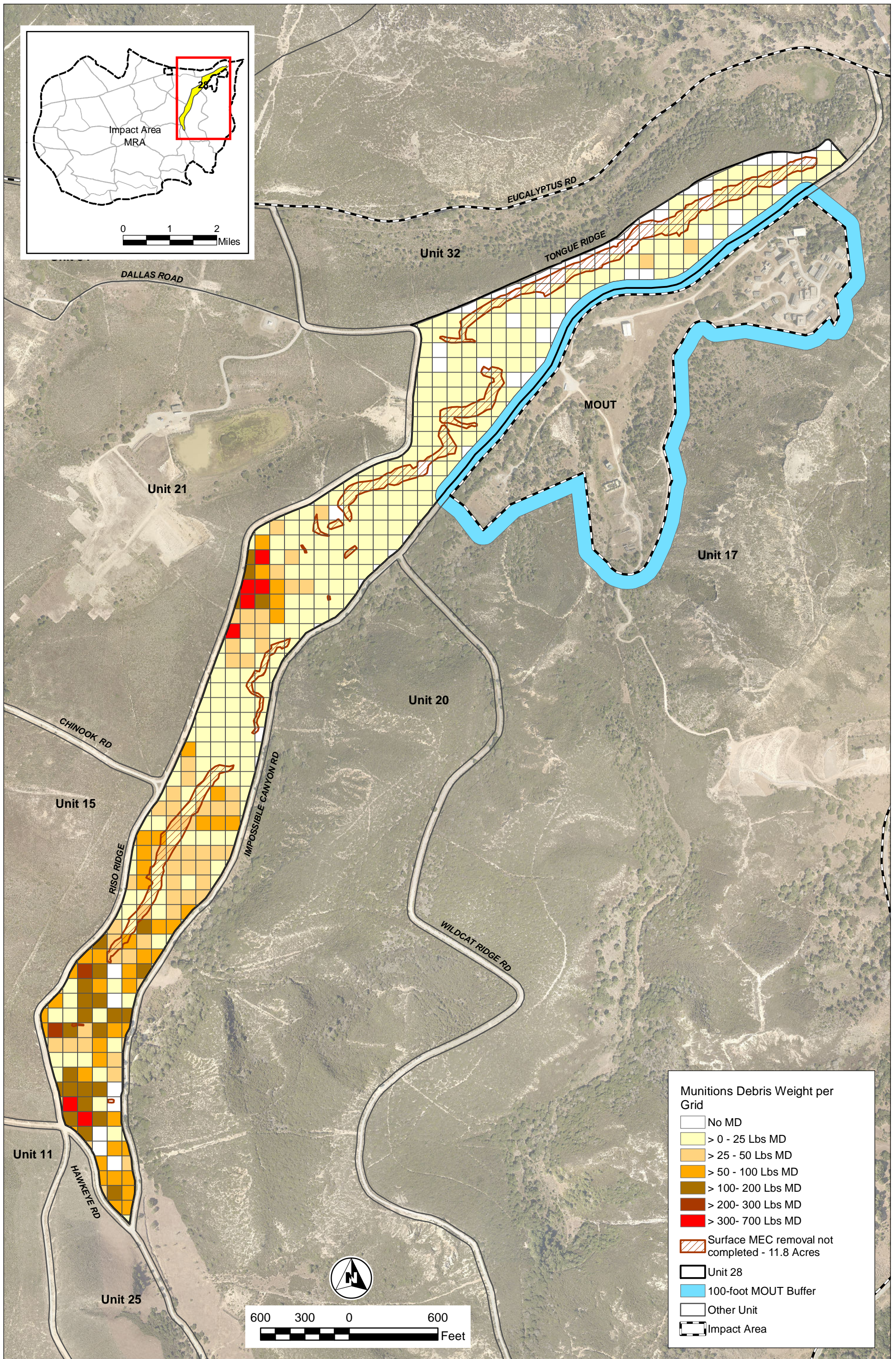


Figure 3
DGM
Unit 28

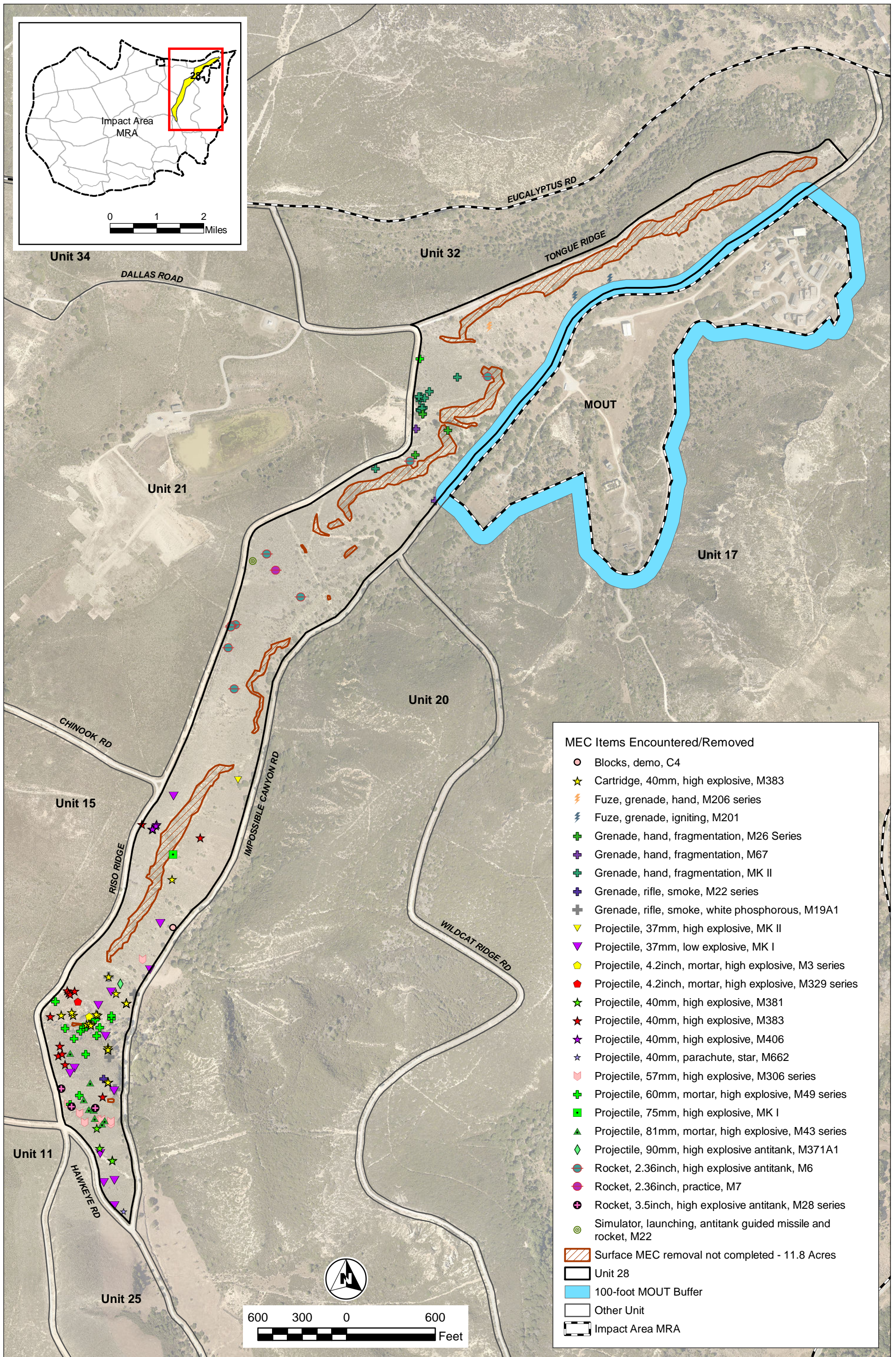


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 Munitions and Explosives of Concern
 Former Fort Ord, California

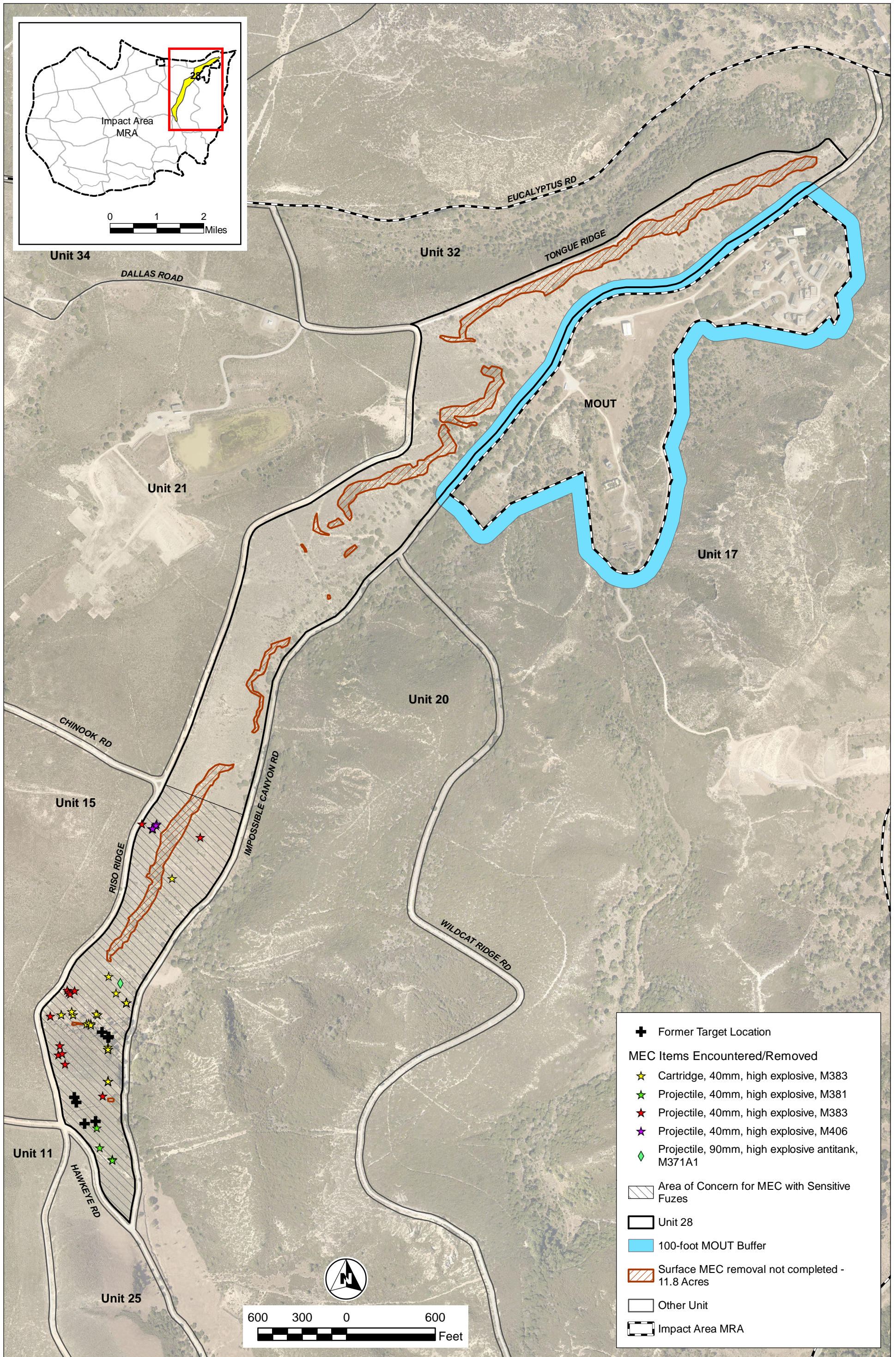
Figure 4
 Munitions Debris Weight by Grid
 Unit 28



MRS-BLM Unit 28 MEC Remedial Action
 Technical Memorandum
 Munitions and Explosives of Concern
 Former Fort Ord, California

Figure 5
 MEC Finds During Remedial Action
 Unit 28





MRS-BLM Unit 28 MEC Remedial Action
 Technical Memorandum
 Munitions and Explosives of Concern
 Former Fort Ord, California

Figure 6
 Location of UXO with Sensitive Fuze
 Unit 28

Appendix A

Field Work Variances



FIELD WORK VARIANCE

Project Name/Number	Fort Ord	WP	07
Applicable Document	Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, California (OE-0859B)	Date	August 17, 2017

Problem Description:

The *Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, California* (Kemron, 2016), specifies the following:

- Section 2.5.2, Manual and/or Mechanical Vegetation Removal: “Due to the presence of some extreme terrain as shown on Figure 6 (not shown), some areas may not have vegetation removed. The determination to not remove vegetation may result from either personnel safety issues or the potential for causing significant erosion problems.”
- Section 2.5.4, Technology-Aided Surface MEC Removal: “Due to the presence of some extreme terrain as shown on Figure 6 (not shown), some areas may not have technology-aided surface removal performed. The determination to not conduct technology-aided surface removal may result from personnel safety issues. Areas where technology-aided surface removal is not conducted will be documented and evaluated during the TM process for the potential for MEC items to be present on the surface.”
- Section 2.5.5, DGM: “Following surface MEC removal, DGM survey will be conducted in accessible areas. Site conditions (e.g. difficult terrain) may prevent digital geophysical survey from being conducted in certain areas; these areas will be documented in the TM.”

Areas where vegetation removal was and was not completed are shown on Figure 1. Approximately 12 acres of Unit 28 (Figure 2) has been determined by UXO safety personnel to be inaccessible to surface MEC removal due to extreme terrain. Approximately 39 acres of Unit 28 (Figure 3) has been determined by UXO safety personnel to be inaccessible to DGM survey due to extreme terrain. Figure 4 shows areas where vegetation removal was not completed overlain with areas where surface MEC removal was not completed due to extreme terrain.

Recommended solution:

Document these areas in the TM. Conduct an evaluation in the TM based on the results of the surface MEC removal and DGM data to determine the likelihood of surface MEC remaining in the 12 acres shown on Figure 2.

Impact on present and completed work:

No impact on present and completed work.

Recommended solution/disposition:

Incorporate this FWV as an appendix to the existing Final Work Plan.

Clarification Minor Change Major Change Affects Budget Yes No Affects Schedule Yes No

Signature [Signature] Date 8/17/17
 Task Manager

Signature [Signature] Date 8/17/17
 SUXOS

Signature [Signature] Date 8/17/17
 Project Manager

Signature [Signature] Date 8-17-17
 CQCSCM

Signature [Signature] Date 8/17/17
 Deputy Project Manager

Signature [Signature] Date 8-17-17
 UXOQCS

for Erin Carnuso

USACE Approval: If Major Change:

Signature [Signature] Date 17 AUG 2017
 OE Safety Specialist

Signature [Signature] Date 17 AUG 2017
 EISEN.DAVID.E.1231985146
 1985146
 USACE COR
 or TM

Signature [Signature] Date _____
 LINDSAY.KYLE.M.1529297226
 YLE.M.1529297226
 297226
 USACE Project
 Geophysicist

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 ou=DoD, ou=PKI, ou=USA,
 cn=LINDSAY.KYLE.M.1529297226
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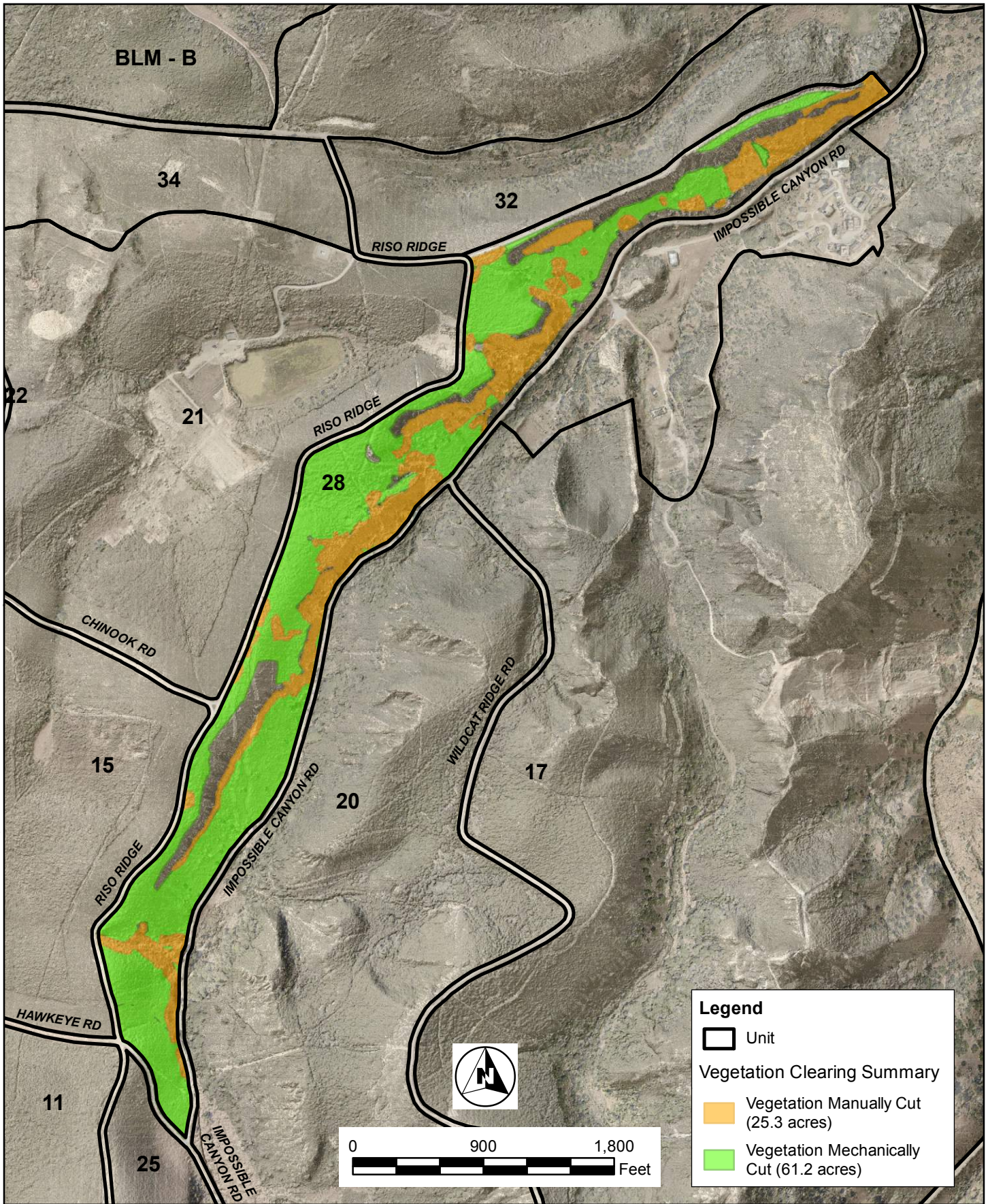
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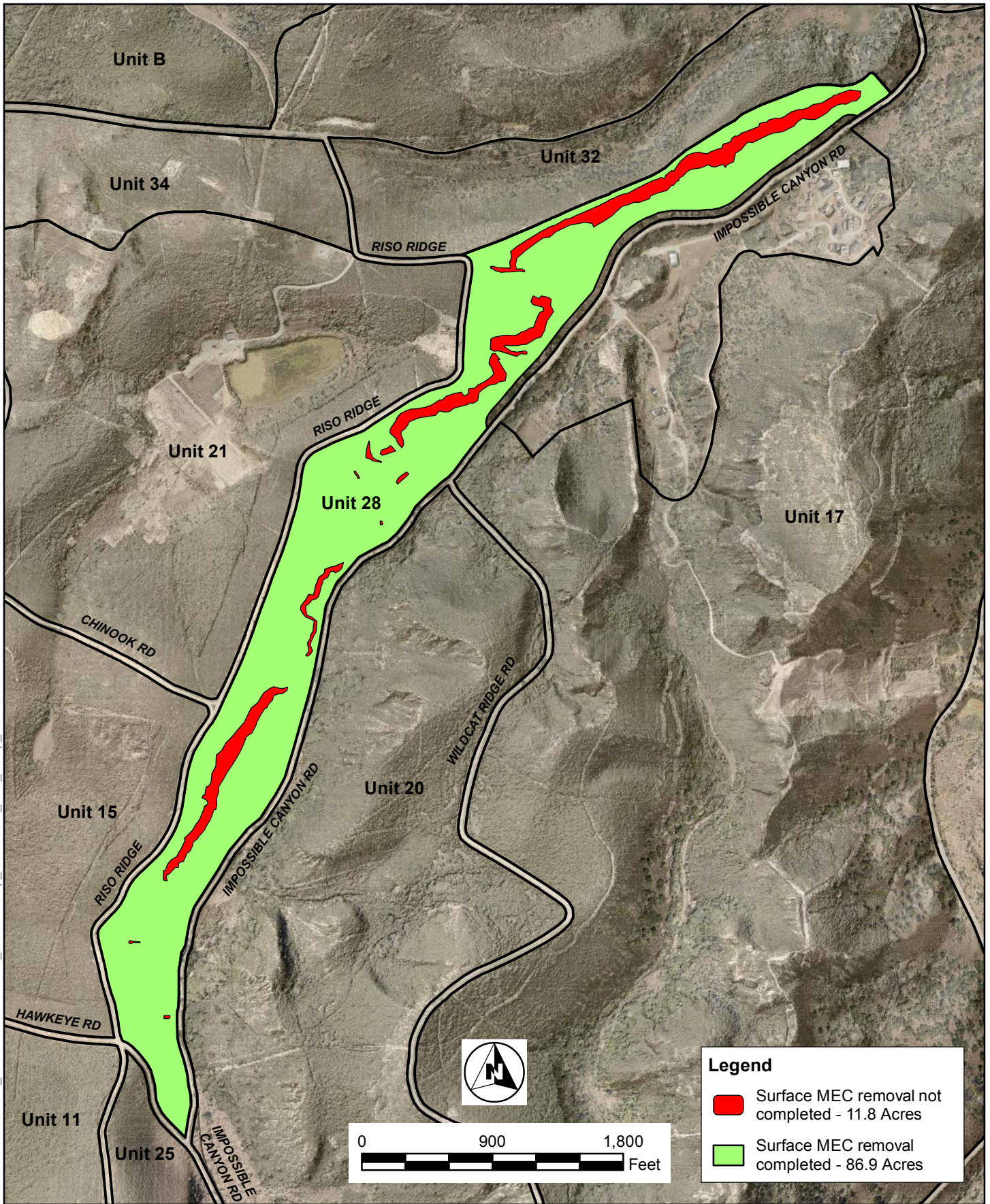
Distribution List: FWV 010, Final Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM
Unit 28, Former Fort Ord, California

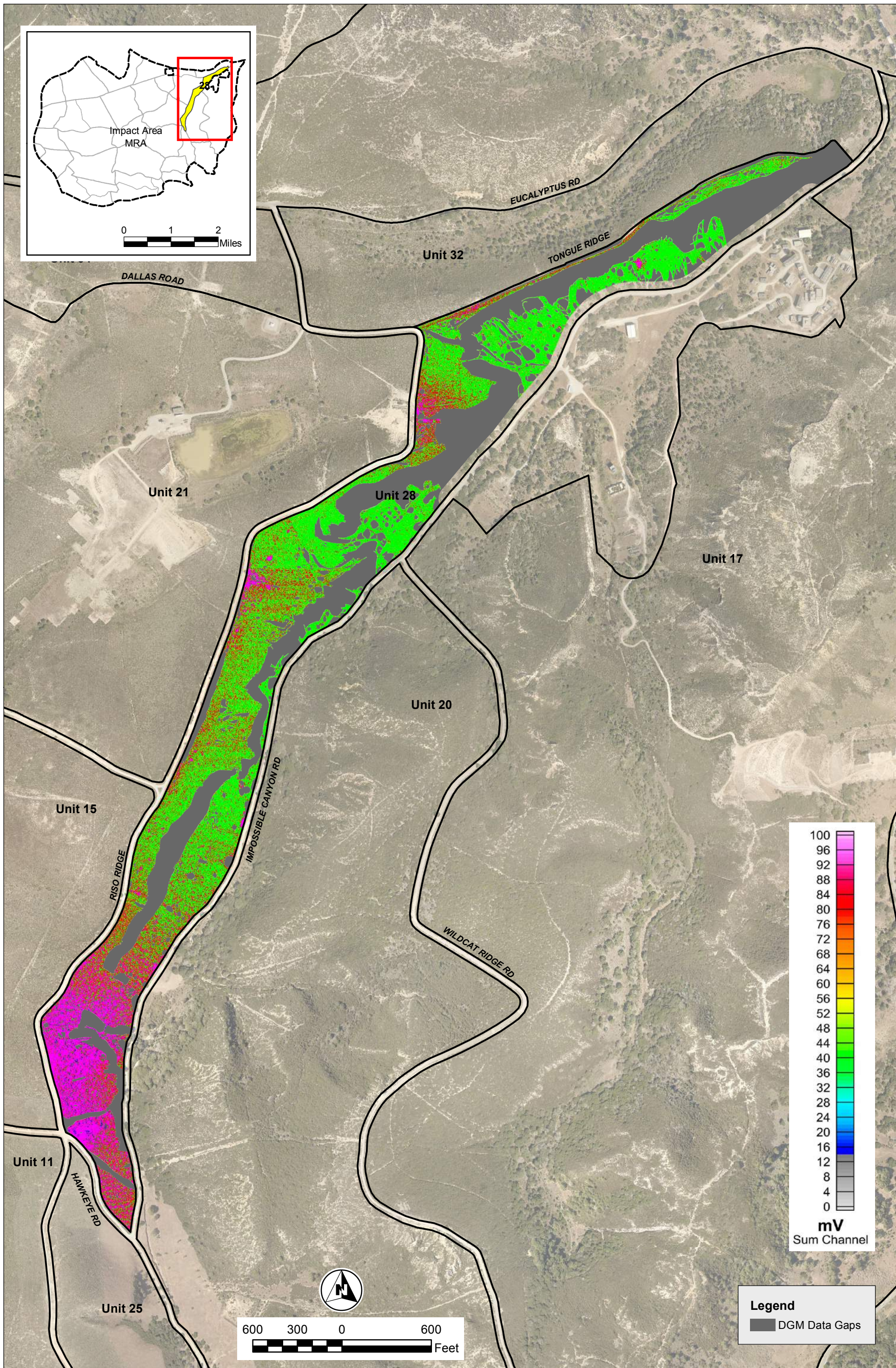
Email	Paper/CD	Name	Organization	Address	City, State	Zip
1		Mr. Duane Balch	Department of the Army USACE	1325 J Street	Sacramento, CA	95814
1		Mr. Michael Wheeler	Department of the Army USACE	1325 J Street	Sacramento, CA	95814
1		Mr. John Jackson	Department of the Army USACE	1325 J Street	Sacramento, CA	95814
1		Mr. Kyle Lindsay	Department of the Army USACE	1325 J Street	Sacramento, CA	95814
1		Mr. Therman Franks	Department of the Army USACE	4101 Jefferson Plaza NE	Albuquerque, NM	87109
1		Mr. David Eisen	Department of the Army USACE	4463 Gigling Road	Seaside, CA	93955
1		Mr. James Britt	Department of the Army USACE	4463 Gigling Road	Seaside, CA	93955
1		Mr. William Collins	Department of the Army, Fort Ord BRAC	4463 Gigling Road	Seaside, CA	93955
1		Ms. Natalie Gordon	Chenega Corporation	4463 Gigling Road	Seaside, CA	93955
1		Ms. Chieko Nozaki	Chenega Corporation	4463 Gigling Road	Seaside, CA	93955
1		Mr. Eric Morgan	Bureau of Land Management, Fort Ord National Monument	940 2 nd Avenue	Marina, CA	93933
1		Ms. Maeve Clancy	U.S. Environmental Protection Agency, Region IX	75 Hawthorne Street, Mail SFD-8-3	San Francisco, CA	94105
1		Mr. Tom Hall	Tech Law, Inc.	7 Shore Point	North Little Rock, AR	72116
1		Mr. Robert Young	Tech Law, Inc.	235 Montgomery Street, Suite 717	San Francisco, CA	94104
1		Mr. Vlado Arsov	California Department of Toxic Substances Control (DTSC)	8800 California Center Drive	Sacramento, CA	95826
1		Mr. Steve Crane	KEMRON Environmental Services	4522 Joe Lloyd Way	Monterey, CA	93944
1	1	Ms. Audrey Johnson	KEMRON Environmental Services	4522 Joe Lloyd Way	Monterey, CA	93944
	1	Mr. Mike Weaver	Fort Ord Community Advisory Group (FOCAG)	52 Corral De Tierra Road	Salinas, CA	93908
	1	Ms. LeVonne Stone	Fort Ord Environmental Justice Network (FOEJN)	P.O. Box 361	Marina, CA	93933
1	1	Admin Record	Fort Ord BRAC	4463 Gigling Road	Seaside, CA	93955

Approved:

David Eisen
USACE Project Manager





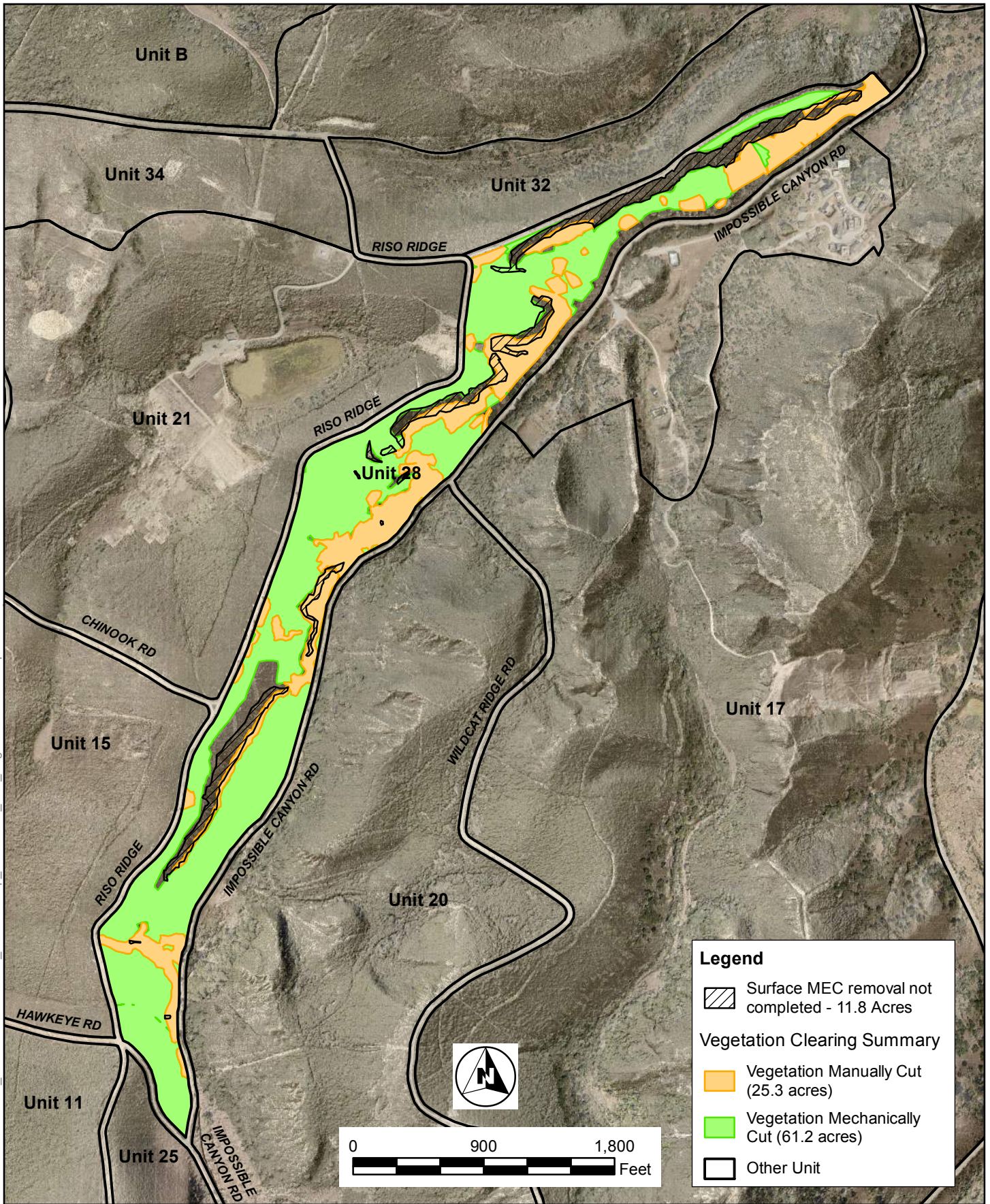


KEMRON
ENVIRONMENTAL SERVICES

Gilbane

Former Fort Ord
Impact Area MRA MEC Removal

Figure 3
DGM Data Map
Unit 28 - FWV 010



Appendix B

Army-BLM Joint Inspection Summary

Post-Remediation Inspection Summary

Subject: Joint Post-Remediation Inspection by the Army and Bureau of Land Management (BLM) of Munitions Response Site (MRS) – BLM Unit 28.

Area of Inspection: Unit 28

Date: 2 August 2017

Attendees: Eric Morgan, BLM; Dave Eisen - Program Manager, United States Army Corps of Engineers (USACE); Curtis Payton – Program Manager, USACE; Natalie Gordon, Chenega Support Services, Fort Ord Base Realignment and Closure (BRAC)

References:

1. *Final Site-Specific Work Plan, Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, CA (Kemron, 2016)(AR#OE-0859B).*
2. *Final Record of Decision (ROD), Impact Area Munitions Response Area (MRA), Track 3 Munitions Response Site (MRS), Former Fort Ord, California (United States Department of the Army [Army], 2008)(AR#OE-0647).*
3. *Final Site-Specific Work Plan, Munitions and Explosives of Concern Remedial Action, MRS-BLM Units 15, 21, 32, and 34, Former Fort Ord, CA (Shaw, 2010)(AR-OE0711B).*

Background: In accordance with the Track 3 ROD, the Army conducted a surface and limited subsurface MEC removal action and Digital Geophysical Mapping (DGM) of the designated Unit within the Impact Area. An inspection by the Army with the participation of BLM, the future property recipient and land manager, of Army's completed munitions and explosives of concern (MEC) removal action was conducted to determine the areas that may require additional subsurface removal action, or future construction support, due to BLM's planned use (e.g. habitat restoration, erosion control measures, fuel break maintenance, etc).

It is an Army responsibility to conduct remedial actions that prepare the property for BLM's safe management and use. The Army will provide MEC removal and/or construction support for BLM's ground disturbing activities as jointly agreed upon prior to property transfer. It is anticipated that BLM will receive Unit 28 property upon completion of a suitable MEC remediation of all adjoining lands designated Munitions Response Site (MRS)-BLM (anticipated completion 2023). With the transfer of the property, responsibility for construction support of subsurface activities will be in accordance with the ROD.

Comments to the Unit 28 Site-Specific Work Plan (SSWP) were provided by BLM prior to the start of MEC removal actions. Those comments and the Army's response to comments are provided with this memo as Attachment 1. The Army has completed the actions described in the SSWP for Unit 28. Additional subsurface MEC removal may be required as identified in the Technical Memorandum (TM).

Objective: This joint inspection provided an on-site assessment of Unit 28. The inspection included a visual assessment of the unit from the perimeter fuel breaks around the unit, and involved a discussion of the actions necessary to attain MEC safety conditions suitable for subsequent future use as described by the BLM. The current status of vegetation cover and evidence of the impacts of MEC removal operations on topographic features and habitat were evaluated. BLM intended future use activities within the area, to include potential construction activities and a description of a likely schedule for those activities (pre or post-transfer), were all considered. The Army provided a preliminary assessment of the MEC safety requirements where appropriate for support of any subsurface activities proposed by BLM.

The inspection is intended to determine a mutually acceptable pre-transfer course of action to achieve a suitable MEC safety status for locations of concern within the unit. The Army will evaluate completed MEC removal work, DGM, and surface monitoring data for all comment locations to determine an appropriate level of MEC construction support required for future BLM activities in those areas. An interim determination will be included in the TM and the remedial action report for the subject area and a final determination of construction support requirements will be included in the Track 3 remedial action completion report.

Comments - Erosion: Two areas were noted by BLM as requiring erosion control work: 1) along the north side of Hawkeye Road southeast of the intersection with Riso Ridge Road, and 2) along the east side of Riso Ridge Road just north of the intersection with Hawkeye Road (see Figure 1). Both areas of erosion are the result of excess runoff from Hawkeye and Riso Ridge Roads and both areas of concern extend outside of the 45 foot cleared-to-depth fuel break footprint. The Army will provide additional soils to backfill these erosion areas and, and provide construction support for BLM erosion control activities as required. BLM suggested during the inspection to use onsite soils to backfill the areas. The Army and BLM will coordinate the work to address these areas of erosion in the future.

Both areas require erosion repairs that may involve grading work extending into Unit 28 beyond the 45 foot cleared-to-depth fuel break footprint. Additional subsurface MEC removal will be required at location 1 before erosion control activities involving ground

disturbance begin. Location 2 may not require additional ground disturbing work beyond the 45 foot cleared-to-depth fuel break footprint where the addition of fill soil will address the issue. The Army and BLM are evaluating the most cost effective methods to address erosion. Discussion about how to proceed is forthcoming.

An area of previous erosion was identified east of Riso Ridge Road, north of Chinook Road and adjacent to Historical Area 37 (HA-37) to the west (Figure 2). The erosion scar shows there is evidence of soil stabilization and vegetation regrowth following previous erosion control grading on Riso Ridge Road to divert water flow from that area. No work on this second area is necessary at this time and the area will be monitored for continued recovery.

Comments – Fuel Breaks and Roads: BLM noted a concern with the current location of Impossible Canyon Road, which serves as the eastern boundary of Unit 28. As Impossible Canyon Road (ICR) extends south from Wildcat Ridge Road, it coincides with the natural canyon drainage system, and sections of the road do converge with the drainage bottom itself at some points (See Figure 3). This situation is high risk for continued erosion problems including the potential for the road to be damaged and curtail access. BLM requests the Army to evaluate the feasibility of subsurface MEC removal at a higher elevation along the hillside west of ICR's current location to support a potential BLM road realignment and construction. The Army will review DGM data for the proposed locations of road realignment and discuss with BLM the options to relocate ICR as requested.

BLM requested the MEC removal status of Tongue Ridge Road, which forms the northern boundary of Unit 28 (Figure 4). In their comments to the Draft SSWP for Units 15, 21, 32 and 34, BLM stated that they would “retain this gravel road as an administrative access road and would like the ability to disturb the subsurface along the edges of the road for maintenance purposes.” Furthermore, BLM states that the road would not be maintained as a permanent fuel break road, but that it would likely be used to support future burns and BLM “desires a level of cleanup that could support an emergency scrape line (15 feet) being constructed down the ridge to tie in with Eucalyptus Road in case of a wildfire.” No subsurface work has been conducted on Tongue Ridge Road and the road does not currently extend to the bottom of the ridge to tie in with either Eucalyptus Road or Impossible Canyon Road. Additional vegetation cutting would likely be required. The Army will review DGM data from the proposed location of this fuel break and provide feasible options for moving forward. Discussion about how to proceed is forthcoming.

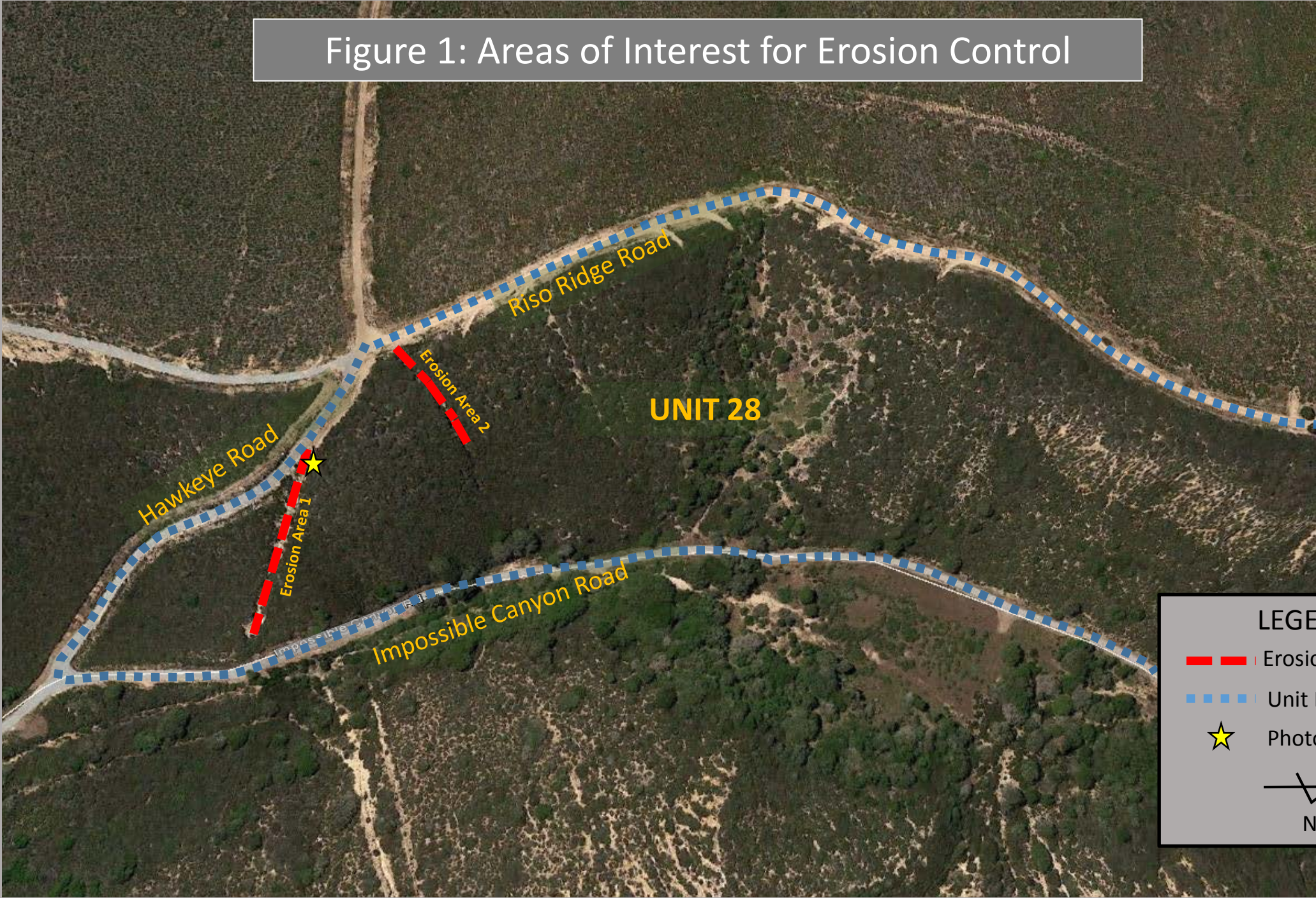
Photo 1: Erosion Area 1 (see Figure 1)



Photo 2: Erosion Monitoring Location (see Figure 2)



Figure 1: Areas of Interest for Erosion Control



LEGEND





-  Erosion of concern
-  Unit Boundary
-  Photo Location
- 
N

Figure 2: Area of Interest for Erosion Monitoring

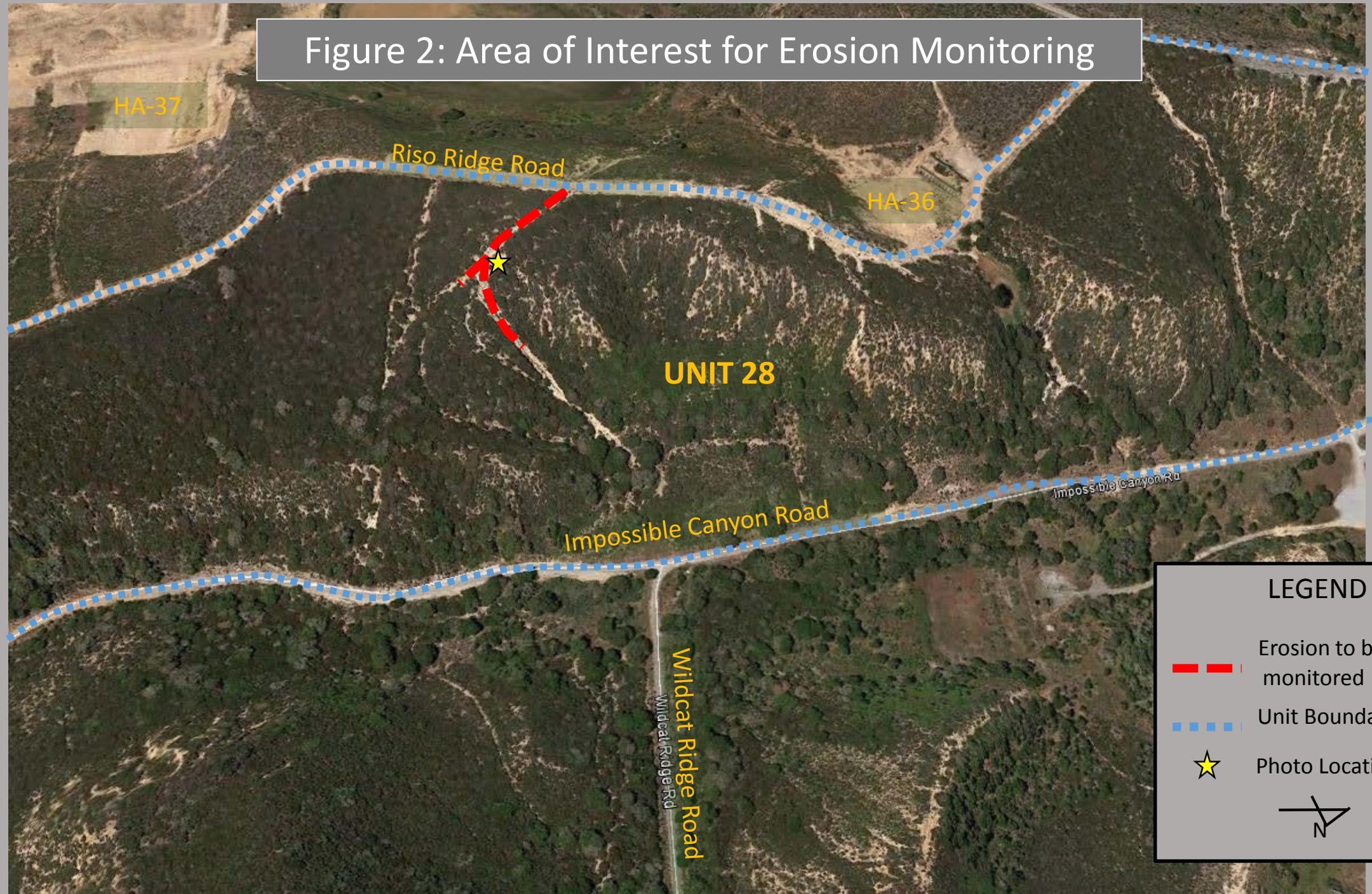
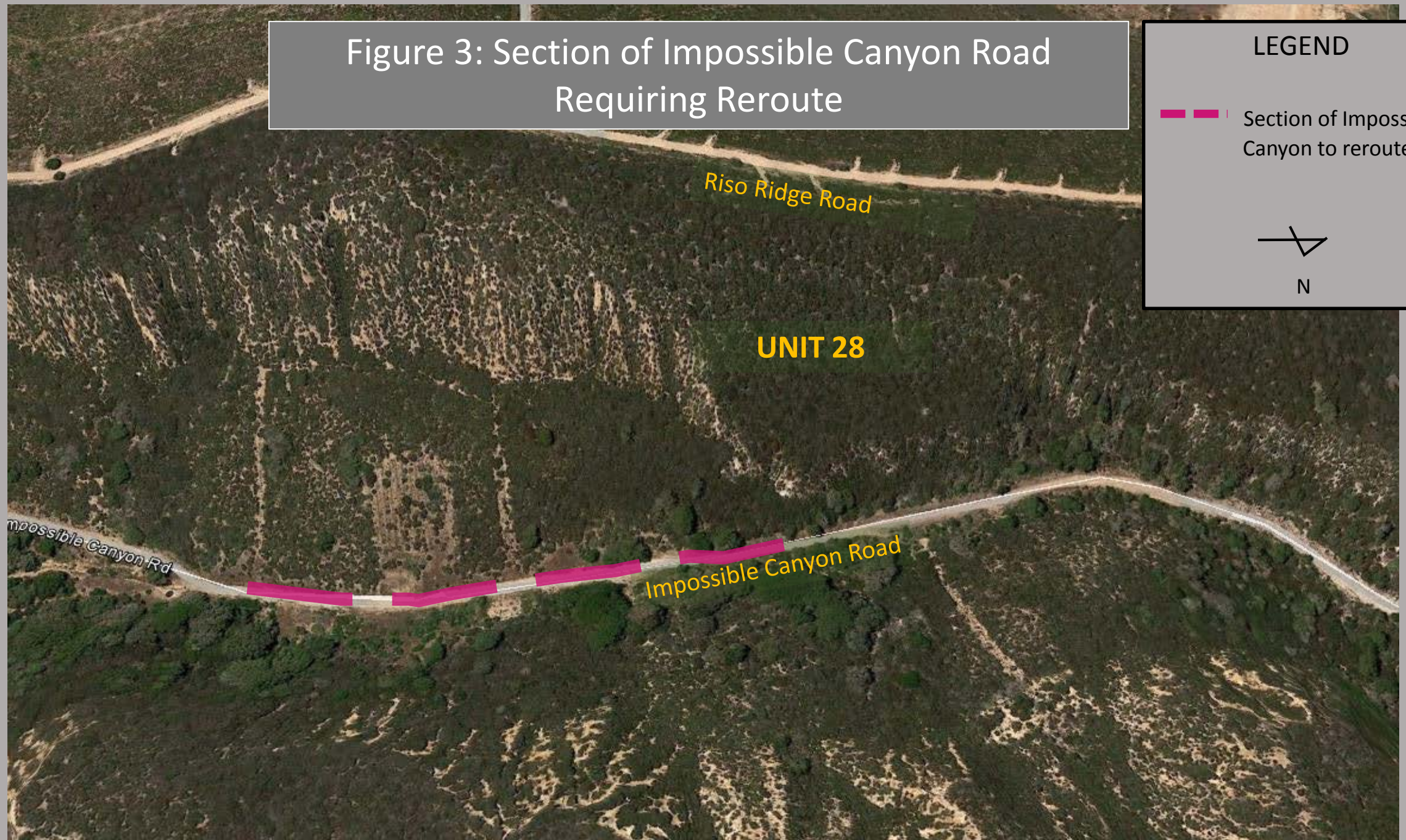



Figure 3: Section of Impossible Canyon Road Requiring Reroute



LEGEND

 Section of Impossible Canyon to reroute

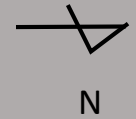
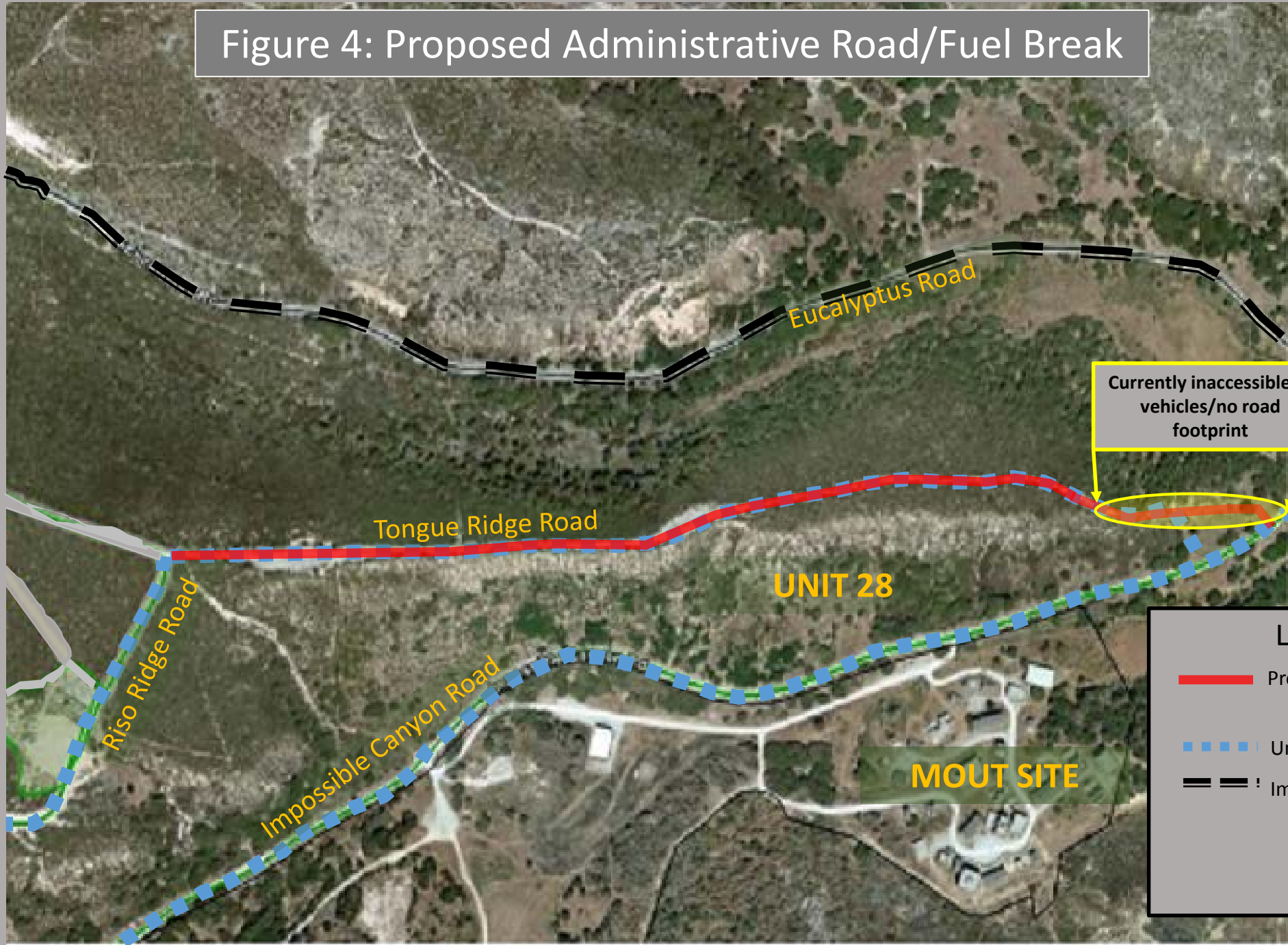


Figure 4: Proposed Administrative Road/Fuel Break



Currently inaccessible to vehicles/no road footprint

LEGEND

- Proposed Administrative Road
- Unit Boundary
- Impact Area Boundary

N



RESPONSES TO COMMENTS

Document: Draft Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28

Commenting Organization: Bureau of Land Management (BLM)

Name: Eric Morgan

Date of Comments: January 4, 2016

Specific Comment 1:

The BLM has strong concerns regarding the erosion potential within this unit and is worried that the vegetation that was removed will accelerate erosion in areas that are already gullied. In order to stabilize and restore these erosion features now or in the future, subsurface disturbance would be required around each feature. I have attached 4 diagrams that show the general locations and types of erosion issues.

Unit 28 is bound by Impossible Canyon Road and Riso Ridge Road. Impossible Canyon Road traverses up the canyon and generally parallels the canyon drainage system. Approximately 2,100 feet of this road is located within the drainage bottom itself and has the potential to wash away or form deep gullies. This section of road should be rerouted outside the drainage bottom in order for it to be more sustainable if it is to be used.

Riso Ridge Road and Dallas Ridge Road form the upper border of Unit 28. Each of these road segments historically collected water running down the road or parallel to the road, then diverted the drainage down the slope causing deep erosion scars. We have been working with you for the last 12 months to manage the road runoff, and have had some success redirecting the runoff more efficiently. Much more still needs to be done to stabilize these important fuelbreak roads and the gullies that formed from road drainage discharge.

Finally, the BLM is greatly concerned that Impossible Canyon will continue to have severe erosion failures unless the vast network of gullies and unneeded roads are stabilized and/or restored in Units 9, 13, 20, 25 and 31. Furthermore, a drainage culvert near the intersection of Barloy Canyon Road and South Boundary Road located at Laguna Seca Recreation Area is another great source of concern. This drainage culvert discharges a substantial amount of road runoff from several paved roads into the top of Impossible Canyon and does not appear to have adequate energy dissipation.

Response to Specific Comment 1:

As a result of this comment the Army has coordinated with BLM staff on erosion repair projects to address locations considered critical and in need of near-term repairs. Funding was provided

RESPONSES TO COMMENTS

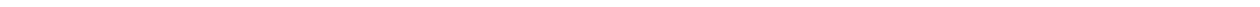
under the current Service Agreement for BLM to redirect runoff away from erosion-prone areas of Unit 28. Other areas of long-term erosion concern will be evaluated.

As described in Section 2.5.6 of the *Draft Final, Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, MRS-BLM Unit 28, Former Fort Ord, CA*, a Technical Memorandum (TM) will be developed following completion of the technology-aided surface removal of munitions and explosives of concern (MEC) and digital geophysical mapping (DGM) survey. The TM will provide an evaluation of the surface MEC removal and DGM survey and, if necessary, describe additional recommended remedial actions based on the evaluation. Subsurface MEC removal can be recommended in specific areas to address specific land use needs such as BLM restoration sites. As in the past, as part of the TM process the Army intends to conduct a joint inspection with BLM of the unit to review such areas as described in the comment. The areas will be evaluated for subsurface MEC removal based on the inspection and the results of the completed work.

With regard to other areas of erosion concerns outside Unit 28 (identified in the final paragraph), the Army has been working with BLM on an ongoing basis to address areas of mutual concerns. The Army intends to address erosion issues that arise as a result of MEC remedial actions in coordination with BLM.

Appendix C

DGM QA Approval and Discussion



**FORMER FORT ORD, CALIFORNIA
UNIT 28
DRAFT QUALITY ASSURANCE REPORT:
DIGITAL GEOPHYSICAL OPERATIONS**



**PREPARED BY
GEOLOGY SECTION
SACRAMENTO DISTRICT
U.S. ARMY CORPS OF ENGINEERS**

**PREPARED FOR
FORT ORD BASE REALIGNMENT AND CLOSURE (BRAC) OFFICE**

SEPTEMBER 2017

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1.0 INTRODUCTION

This report covers the Quality Assurance (QA) processes conducted by the U.S. Army Corps of Engineers (USACE) with respect to the collection, processing, and evaluation of digital geophysical data collected by KEMRON Environmental Services, Inc. (KEMRON). The field work was performed in Unit 28. Work was performed under WERS Contract No. W912DY-10-D-0027, Site-Specific Work Plan MRS-BLM Unit 28. The field protocols, database management, and QA reviews were based on a combination of methods previously used in other units and described in the UFP-QAPP Volume II Appendix A, along with additional procedures necessary for ensuring compliance with the WERS MMRP contract and the standard operating procedures performed by KEMRON's subcontractors GILBANE and NAEVA. USACE QA verified that KEMRON had an adequate Quality Control (QC) program in place and that data collected in Unit 28 were in accordance with the project Data Quality Objectives (DQOs) and Measurement Quality Objectives (MQOs), as established in the UFP-QAPP. Unit 28 did not include any areas recommended for subsurface removal and were collected in their entirety to meet Category B data.

1.1 Site details

Unit 28 is located in the northeast portion of the Impact Area Munitions Response Area that is planned to be transferred to BLM, as depicted in Figure 1. The area is bounded on the north by Tongue Ridge and by fuel breaks on the remaining sides. Unit 28 encompasses a total of approximately 102 acres.

Clean-up operations pertinent to DGM activities were initiated with a vegetation clearance followed by an instrument aided surface removal. Unit 28 DGM was collected using the Category B data collection protocols, as no subsurface removal is planned for this unit. During vegetation clearance and surface clearance, a total of 212 MEC items were removed.

According to the Installation-Wide Multispecies Habitat Management Plan (HMP) for Fort Ord (USACE 1997), the site will be transferred to BLM to be used as an undeveloped habitat reserve. The Impact Area is mostly covered by maritime chaparral and grassland habitats. The terrain in the Impact Area is dominated by rolling hills with elevations ranging from 720-900 ft. above sea level (ASL). These hills are composed of sand associated with Pleistocene aged sand dunes that may be as thick as 250 ft. The western edge of the site contains a number of steep cliffs and gullies in Unit 28 that were inaccessible to the DGM survey team, further discussed below.

2.0 QA ACTIVITIES

2.1 Data collection methods

Production geophysical data were collected using Geonics EM-61MKII electromagnetic sensors in a multi-coil configuration (towed array) throughout most of the site. The EM-61MKII is a time-domain electromagnetic sensor that generates an electromagnetic pulse, inducing eddy currents within the subsurface. During the off period of the EM pulse, the eddy current decay produces secondary electromagnetic fields within both ferrous and non-ferrous metallic objects. These secondary electromagnetic fields are received and recorded over four averaged time gates per data collection interval (10Hz).

Data were collected either as individual grids or in grid blocks of variable size consisting of multiple grids. With the exception of one grid block discussed in section 2.5, all data collected met the Category B line spacing requirements, with 98% not to exceed a lane spacing of 3 ft. As stated in the MEC Procedures Supplement, the purpose and objective for the Category B DGM surveys is to obtain high quality DGM data in order to characterize the site for overall anomaly distribution and density. Obstacles and issues with terrain precluded 100% coverage and approximately 39 acres of Unit 28 were determined by UXO Safety to be inaccessible to DGM survey due to extreme terrain. All data gaps were appropriately documented in the obstacle file. Figure 2 of this QA report depicts the full DGM dataset for Unit 28.

2.2 Field oversight

Field oversight was performed intermittently throughout the project by both the USACE Project Geophysicist and OESS. Appropriate field procedures were reviewed and found to be in compliance. Under the new WERS Contract No. W912DY-10-D-0027, NAEVA is now subcontracted to collect the geophysical data. As there were no Category A areas, no USACE QA DGM data were collected.

2.3 Geophysical System Verification

Under the WERS contract, USACE and KEMRON fully incorporated the physics based Geophysical System Verification (GSV) approach as described in the July 2009 ESTCP report and supported by EM 200-1-15. GSV includes two methods for providing QA/QC-blind seeding and the instrument verification strip (IVS). IVS data results were recorded on daily QC submittals attached as PDF files to the grid blocks. All data measurement quality objectives were achieved.

Production data required the GSV blind seeds placed throughout the Units, as documented in the UFP-QAPP. By placing blind seeds at an average rate of one per day, the instrument functionality can be tested on a daily basis. Any failures to detect a blind seed could be indicative of an issue with data collection. All blind seeds were small industry standard

objects buried at six inches below ground surface. The blind seeds were placed by the QC Geophysicist. All blind QC seeds were detected and both the responses and positioning were within the requirements of the MPS and SOPs. Table 1 summarizes the results for Unit 28.

Table 1- Unit 28

Seed_ID	Grid	Reported Response	Response Passes?	Total Offset (in)	Positioning Passes?
28001G	B3I9F7	338.73	Yes	4.867460947	Yes
28002G	B3I9E4	398.29	Yes	22.57315148	Yes
28003G	B3I8B9	370.51	Yes	18.20567692	Yes
28004G	B3I8A6	144.84	Yes	21.22199915	Yes
28005G	B3H8H4	228.91	Yes	7.056020399	Yes
28006G	B3H8G3	261.78	Yes	12.72729979	Yes
28007G	B3H8I2	311.16	Yes	1.452446212	Yes
28010G	B3G7F4	315.76	Yes	12.97086766	Yes
28009G	B3G7G1	197.00	Yes	13.54525747	Yes
28008G	B3H7B7	321.12	Yes	8.501532095	Yes
28014G	B3F6H8	233.79	Yes	8.757862746	Yes
28013G	B3G6A9	430.92	Yes	4.061215584	Yes
28012G	B3G7C2	324.44	Yes	10.40219361	Yes
28011G	B3G6E0	309.74	Yes	0.264272586	Yes
28016G	B3F6C5	197.25	Yes	13.56841332	Yes
28015G	B3F6E9	385.16	Yes	4.056017751	Yes
28017G	B3D6I2	196.38	Yes	6.547042085	Yes
28018G	B3E6A3	349.16	Yes	9.442177719	Yes
28019G	B3E6C4	239.43	Yes	4.45361696	Yes
28020G	B3E6E6	320.82	Yes	13.61259712	Yes
28021G	B3E6H7	355.19	Yes	3.090157281	Yes
28022G	B3E6J8	318.34	Yes	8.5435365	Yes
28023G	B3G7H9	308.62	Yes	9.876867522	Yes
28024G	B3G7J0	378.56	Yes	4.070990058	Yes

2.4 Digital data review

A review of digital geophysics data by the USACE was performed to monitor the effectiveness of data processing and consistency of data delivery. Issues that were reviewed in these data included:

- 1) Missing survey lines within a grid (interline gaps)
- 2) Point-to-point data gaps along survey lines
- 3) Bowing out of survey lines beyond 50% of survey line spacing, unless otherwise collected
- 4) Unreasonable data “spikes”
- 5) Data incongruity across survey grids (data levels in one grid are not reasonably compatible with data levels in neighboring grids)
- 6) Inadequate data density along survey traverse
- 7) Lack of accurate, precise locations; survey line orientation
- 8) Inadequate/incomplete site survey coverage
- 9) Missing, incomplete, or noncompliant instrument standardization checks
- 10) Completeness of file header information and supporting documentation
- 11) Consistent IVS and GSV results supporting the data quality objectives

To accomplish this, all raw and processed data files were checked by the USACE to ensure that KEMRON followed an appropriate and informative naming convention reflecting the grids surveyed as outlined in the EM 200-1-15. The USACE checked that KEMRON managed the field and processed data in a professional manner, including organization, daily maintenance, and complete documentation. The transfer and delivery of data were achieved via an ftp site where raw (pre-processed) and final processed data was delivered within 5 business days after collection. The USACE performed 100% verification of the accompanying documentation for completeness and accuracy. This focused on a review of header files on the pre-processed data (data that has merged into a single file and synchronized with the GPS data) and processed data to verify that dates were consistent, systems and system sampling parameters were identified, project name and contractor was listed, and all column headers were included and defined. KEMRON also delivered supporting summary sheets that further documented field parameters and processing. All of the summary sheets were reviewed for completeness, verification of calibration data, and consistency to the electronic data file headers.

In order to make the above process more efficient, a grid tracking spreadsheet located in the Unit 28 folder on the FTP site was updated weekly and allowed for the QC Geophysicist and USACE QA Geophysicist to document their verification of each deliverable. Minor issues such as corrupt or incomplete zip files were addressed within the table, major issues were addressed as corrective action requests. The final excel file will be maintained within the Final Data Submittal QC folder on the Fort Ord server.

The procedure for reprocessing and projecting the pseudo-color maps of the DGM Category B data included starting with a 100% review of the data in Geosoft Oasis Montaj to include

re-leveling and re-gridding. These digital data were imported into Geosoft for the generation of pseudo-color maps that were then exported as a georeferenced geotif.

Overall, the general QA digital data review consisted at a minimum of:

- 1) creating a processed database
- 2) importing XYZ data
- 3) calculation of sum channel
- 4) generating a grid (0.25 cell size and blanking distance of 2-ft) of sum channel
- 5) plotting the sum channel
- 6) plotting a symbol cover for the track lines (view coverage)
- 7) exporting the plots to geotifs
- 8) importing the geotifs into a GIS

2.5 Corrective Action Request

No corrective action requests were issued for data collected in Unit 28; however two items are of note. First, grid block B3E6D71 did not meet the category B line spacing requirement, with only 97.02% of survey lines not exceeding a lane spacing of 3 ft. This is due to the way the instrument footprint coverage is calculated, which is artificially lowered as a result of the large number of data gaps, and does not indicate a deficiency in the data quality. The issue was noted in both the QC report and Data Processing Report. Data gaps and line spacing were reviewed by the QA geophysicist to confirm there were no effects on data quality. No CAR was issued.

Second, the channel 1 response was occasionally 2-4% outside of the MQO tolerance specified for the static background QC test. This was due to the presence of powerlines adjacent to the IVS location. The issue was isolated to channel 1 and is seen as low anomaly noise spikes in data collected adjacent to power lines. The issue was noted in both the QC report and Data Processing report. All data was reviewed by the QA geophysicist to confirm there were no negative effects on data quality. No CAR was issued.

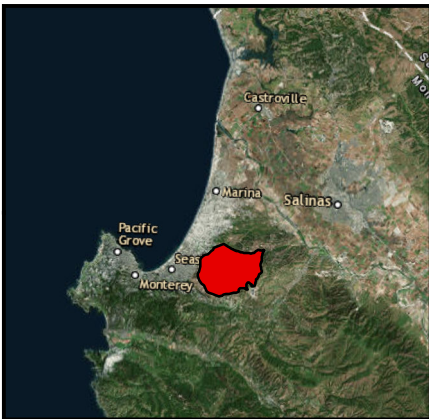
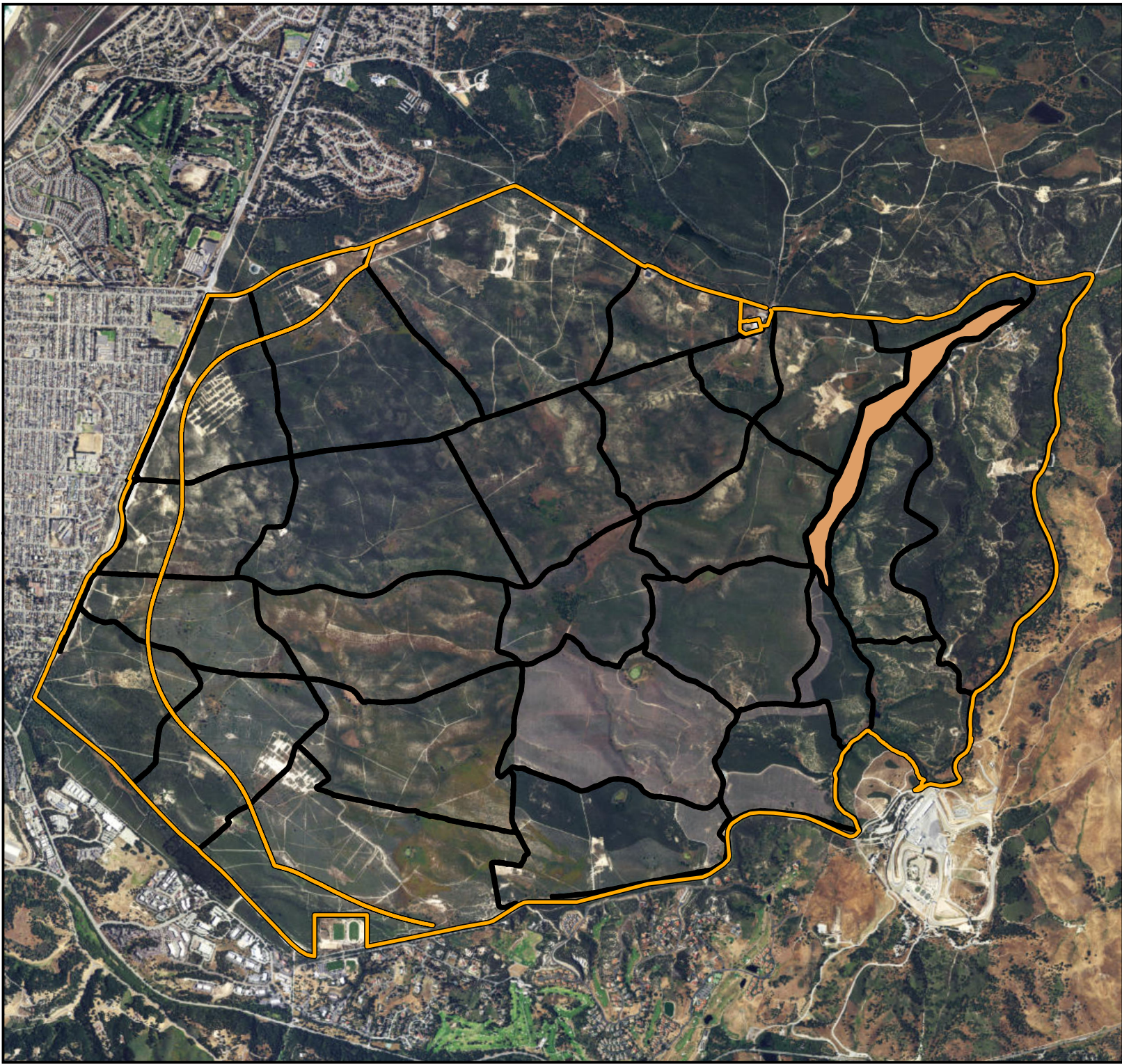
3.0 CONCLUSIONS

QA activities by the Government verified KEMRON had an adequate QC program in place and that data collected within Unit 28 are sufficient and in accordance with the project DQOs and MQOs.

4.0 LESSONS LEARNED

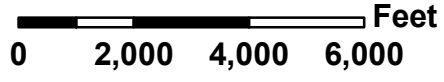
There are known sources of cultural noise at Fort Ord. Because the purpose of the IVS and QC tests is to test instrument functionality, these areas should be avoided in future placement of IVS locations.

5.0 FIGURES



Legend

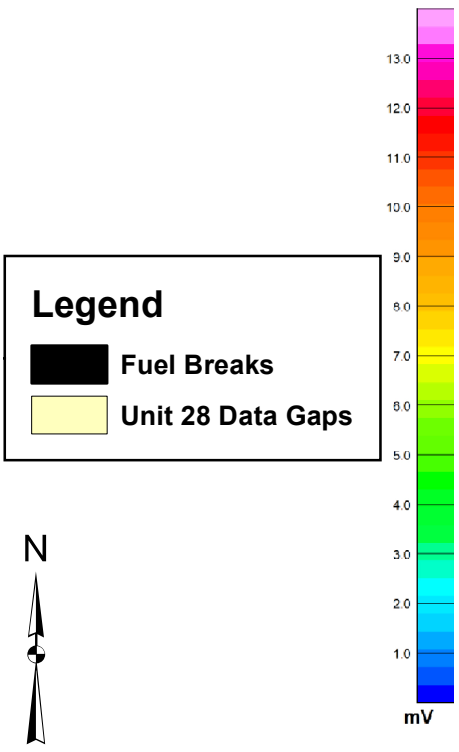
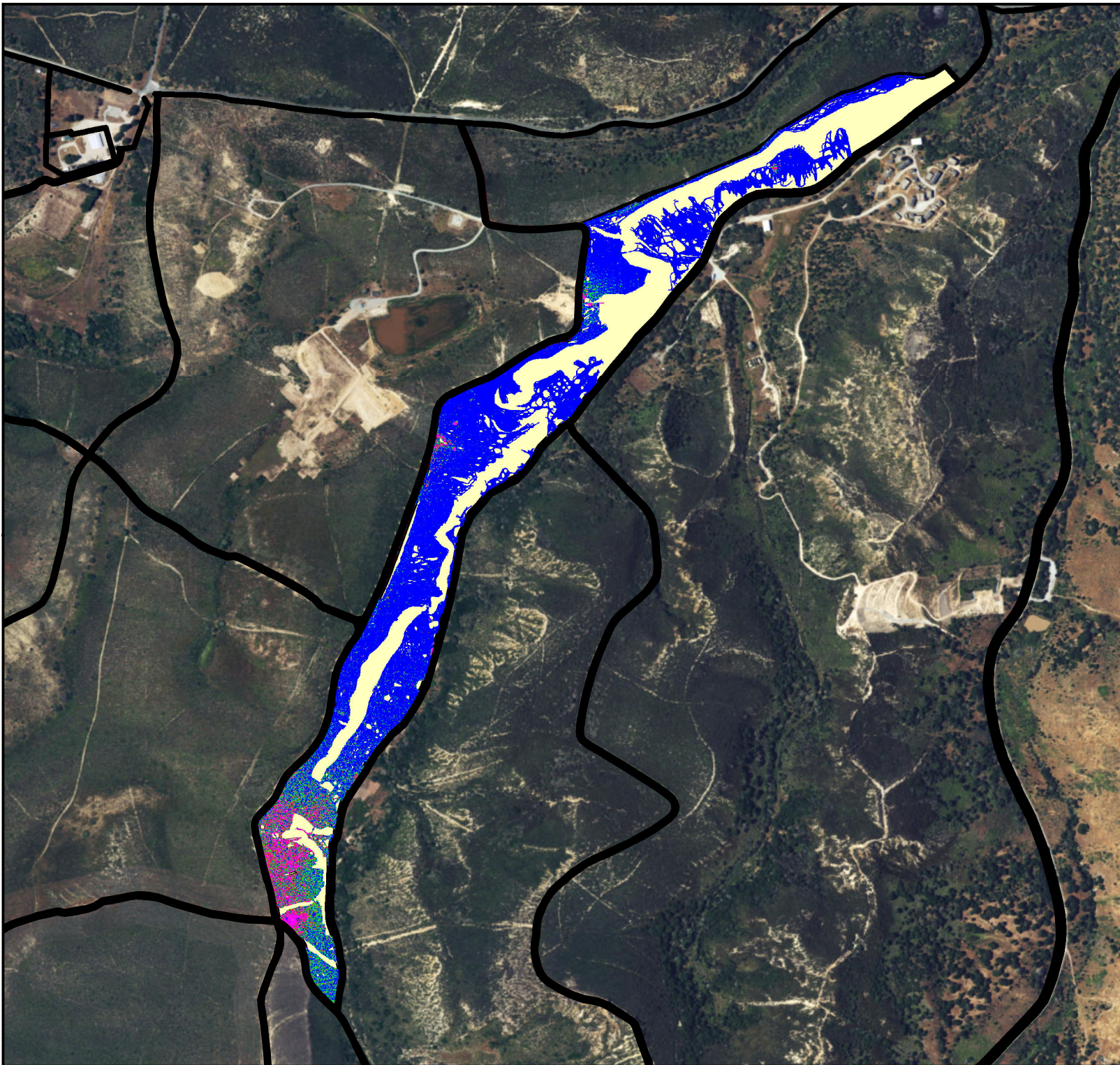
- Fuel Breaks
- Fence Line
- Unit 28



 U.S. Army Corps of Engineers
Sacramento District

Figure 1

Unit 28
Former Fort Ord, CA



 U.S. Army Corps of Engineers
Sacramento District

Figure 2
Unit 28
Former Fort Ord, CA

Appendix D

Response to Comments



RESPONSES TO COMMENTS

Document: Draft MRS-BLM Unit 28 Munitions and Explosives of Concern Remedial Action Technical Memorandum, Former Fort Ord, California, September 2017

Commenting Organization: Department of Toxic Substances Control (DTSC)

Name: Vlado Arsov

Date of Comments: October 27th, 2017

General Comment 1:

Comment 1: Page 8, paragraph 4 and page 9, paragraph 2. There appears to be conflicting information between the statements on page 8 and 9. Page 8 states the recommendation about munitions and explosives of concern (MEC) with sensitive fuses will be deferred until the completion of the field study while page 9 says no additional subsurface MEC removal beyond Army-BLM inspection summary is recommended for Unit 28. Please clarify how will be determined handling of MEC with sensitive fuses discovered on this site.

Response to General Comment 1:

The Munitions with Sensitive Fuzes Field Study is intended to present options for addressing subsurface munitions and explosives of concern (MEC), specifically those with sensitive fuzes. The field study does not constitute a MEC remedial action but is being conducted to supplement MEC remedial actions. The objective of the field study is to determine the most cost-effective MEC detection and remediation method for areas with high anomaly density and evidence of munitions with sensitive fuzes by evaluating the performance of multiple geophysical systems. The field study is currently underway. Once completed, the study findings will be used to provide a recommendation regarding MEC with sensitive fuzes in Unit 28. At this the time, no additional subsurface MEC removal beyond that addressed in the Army-BLM joint inspection summary was recommended for Unit 28.



RESPONSES TO COMMENTS

Document: Draft MRS-BLM Unit 28 Munitions and Explosives of Concern Remedial Action Technical Memorandum, Former Fort Ord, California, September 2017

Commenting Organization: United States Environmental Protection Agency (EPA)

Name: Maeve Clancy

Date of Comments: October 30th, 2017

General Comment 1:

The MRS-BLM Unit 28 Munitions and Explosives of Concern Remedial Action Technical Memorandum (hereinafter referred to as the "MRS-BLM Unit 28 MEC RA TM"), has apparently assigned an incorrect munitions and explosives of concern (MEC) classification to some of the items listed in a number of locations therein. The term "munitions and explosives of concern" and its subcategories are defined as follows, per Volume 8, Glossary, of the Department of Defense Ammunition and Explosives Safety Standards (DoD 6055.09-M, V8), and in the references found therein:

Munitions and Explosives of Concern (MEC). A term distinguishing specific categories of military munitions that may pose unique explosives safety risks:

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 either by malfunction, design, or any other cause;

Discarded Military Munitions (DMM). Military munitions that have been abandoned without proper disposal or 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; or

Munitions Constituent (MC). Any materials originating from unexploded ordnance, discarded military munitions, or other military munitions; including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions (e.g., TNT, cyclotrimethylenetrinitramine [RDX]) present in high enough concentrations to pose an explosive hazard. (NOTE: This is the definition of MC that constitutes the MEC subcategory of MC and is NOT the definition of all MC, which includes both explosives and other non-explosive constituents of munitions.)

RESPONSES TO COMMENTS

Based upon these definitions, and circumstances noted, the items requiring correction and/or, in some cases, further discussion, are as follows:

- **Table 2, MEC Items Encountered and Removed During Operations Covered in TM, No Page Numbers:** All of the items listed in the table are classified as UXO. This may be erroneous for the following reasons:
 - The items listed as various models of fragmentation grenades (e.g., Grenade, hand, fragmentation, M or Mk number) would all have had the safety pins pulled and would likely have been thrown at a target if they were actually UXO. Also, the normal practice when throwing grenades in training and a "dud" grenade occurs (i.e., one that is thrown but does not detonate) is to stop use of the range (or the affected lane) to prevent a grenade with a hung striker from being propelled into the personnel in the throwing area by the blast from the detonation of a subsequently thrown grenade. When a dud grenade occurs, explosive ordnance disposal (EOD) is contacted and requested to immediately dispose of the dud grenade. Only then does the throwing of grenades resume. The large number of what appears to be dud fired grenades (i.e., UXO) in the northern third of Unit 28 would seem to be extremely unusual and a violation of range safety rules, unless these were unused grenades. If the grenades were unused (i.e., the safety pins are present) they should be classified as discarded military munitions (DMM) instead of as UXO. This should be evaluated and any explanation or correction of the classification made.
 - The item listed as "Rocket, 2.36inch, practice, M7" and classified as UXO is likely unfired, as the warhead is inert and the rocket motor would have been expended and should be inert if it was fired. Also, if it were fired and the motor fully expended, the item would be classified as munitions debris (MD) and not as UXO. If it were found with the motor intact (i.e., unfired), the item would be classified as a DMM and not as UXO, since it has not been fired. The classification of this item as UXO should be evaluated and an explanation provided, or it should be reclassified as noted.
 - The items listed as "Cartridge, 40mm, high explosive, M383" should not be classified as UXO because a cartridge is a complete round and has not been fired. They should be reclassified as DMM. The MEC classification of these items should be reviewed and corrected as necessary in the table.
- **Table 6, Sensitive Fuze MEC Items Encountered and Removed During Operations Covered in TM, No Page Numbers:** This table lists "Projectile, 40mm high explosive, M381," "Projectile, 40mm high explosive, M383," and "Cartridge, 40mm high explosive,

RESPONSES TO COMMENTS

M383" as having sensitive fuzes. In the case of the items classified as "cartridge," the fuzes have not been subjected to the fuze arming and firing forces that occur when the item is propelled down the tube of the firing weapon. As a result, they are unarmed. The fact that the fuzes are unarmed makes the classification of these items as having sensitive fuzes somewhat questionable, as the sensitivity of the fuze, if it is unarmed, is basically irrelevant. A footnote should be added to Table 6 noting the relatively low hazard presented by an unarmed fuze, even if it is classified as sensitive when armed. In addition, as previously noted, the term "cartridge" describes a munition that has not been fired, is a complete round, and it should not be classified as UXO but as DMM when found. This should also be corrected in the table.

Please review the noted items and correct them as required in the cited tables, and at all other locations where they are described or listed in the MRS-BLM Unit 28 MEC RA TM.

Response to General Comment 1:

Table 2: Fragmentation Hand Grenades – Items have been changed to DMM. After further examination of photographs and review of the items discovery information, the description of the items has been changed.

Table 2: Rocket, 2.36inch, practice, M7 – Item has been changed to DMM. After further examination of photograph and review of the item discovery information, the description of the item has been changed.

Tables 2 and 6: Cartridge, 40mm, high explosive, M383 - No changes to Cartridge, 40mm high explosive (HE), M383 should be made. During the surface MEC removal in Unit 28 54 M383 HE 40mm cartridges were located and identified as UXO. The reason for these being identified as UXO is there were indicators these items were cycled through the weapon system. These indicators were in the form of scratches around the ogive from the rifling groves in the barrel. This determination is made by the team leader during verification and identification of the item.

Forty millimeter projectiles require the following to function:

- Set-back – the acceleration of the projectile during firing.
- Rotation – the rotating band around the projectile engages the rifling in the launcher barrel imparting spin to the projectile.
- Impact - Upon graze or impact with the target, the inertial force from impact causes bracket weights to pivot inward forcing the firing pin into the detonator. Concurrently, the detonator detonates the explosive charge causing a blast and fragmentation of the projectile body.

RESPONSES TO COMMENTS

It is possible the cycling of the cartridge through the weapon system could result in a partially armed condition of the cartridge. Hence, all 40mm cartridges fired from or cycled through an M75 or M129 Grenade Launchers or the Mk 19 Model # Grenade Machine Gun are considered to be UXO.

A footnote has been added to Table 6 noting the relatively low hazard presented by an unarmed fuze.

Appendix G

Draft Final Technical Information

Paper (TIP), MOUT Site Buffer, MEC

Remedial Action

TRANSMITTAL MEMORANDUM**To:** Distribution**Date:** 03/31/14

Subject: Draft Final, Technical Information Paper, MOUT Site Buffer, Munitions and Explosives of Concern, Former Fort Ord, California**DCN:** 07202.2001.207

Enclosed for your review is the Draft Final, Technical Information Paper, MOUT Site Buffer, Munitions and Explosives of Concern, Former Fort Ord, California. This document describes the munitions and explosives of concern remedial action conducted within the 100-foot buffer surrounding the MOUT Site. The remedial action was conducted under the Track 3 Impact Area MRA Record of Decision, Former Fort Ord, California. Comments received on the draft have been addressed and responses to the comments can be found in Appendix G.

Should you have comments on this version of the document, please forward them in writing by May 5, 2014, to:

William K. Collins
BRAC Environmental Coordinator
U.S. Army Fort Ord BRAC Field Office
P.O. Box 5008
Monterey, CA 93944-5008
Fax: 831-393-9188

Outlined below are replacement and addition pages in order to update the draft paper document to the draft final paper document.

For paper documents please replace:

- Transmittal Memorandum
- Distribution List
- Cover
- Spine
- Title Page
- Signature Page
- Main Text
- Table 5
- Appendix C
- Appendix D

For paper documents please add:

- Appendix G

Comments may be submitted in electronic format or by fax; however, they must be followed up with a hard copy sent through the U.S. Postal Service or hand delivered to the Fort Ord Administrative Record. All hardcopy comments must be received by close of business on the designated comment period deadline.

Should you have any questions, please contact the U.S. Army, Fort Ord BRAC Community Relations Office, at (831) 393-1284 or by e-mail at melissa.m.broadston.ctr@mail.mil.

Distribution List: Draft Final, Technical Information Paper, MOUT Site Buffer, Munitions and Explosives of Concern, Former Fort Ord, California

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 ou=USA, cn=EISEN.DAVID.E.1231985146
 Date: 2014.03.28 09:56:15 -0700
 David Eisen
 USACE Project Manager

**DRAFT FINAL
MOUT SITE BUFFER
MUNITIONS AND EXPLOSIVES OF CONCERN
REMEDIAL ACTION
TECHNICAL INFORMATION PAPER
FORMER FORT ORD, CALIFORNIA**

DCN: 07202.2001.207

Prepared For:

U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, California 95814-2922

Prepared By:

ITSI Gilbane

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March 2014

**DRAFT FINAL
MOUT SITE BUFFER
MUNITIONS AND EXPLOSIVES OF CONCERN
REMEDIAL ACTION
TECHNICAL INFORMATION PAPER
FORMER FORT ORD, CALIFORNIA**

Worldwide Environmental Remediation Services Contract
Contract No. W912DY-10-D-0024
Task Order No. CM01

March 2014

Reviewed by: _____
Kevin Siemann
Senior Environmental Scientist

Date: _____

Reviewed by: _____
Erin Caruso, PMP, PE
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Date: _____

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Acronyms and Abbreviations

ARAR	applicable or relevant and appropriate requirements
Army	U.S. Department of the Army
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CMC	central maritime chaparral
DGM	Digital Geophysical Mapping
DID	data item description
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
FS	feasibility study
FWV	Field Work Variance
HMP	Habitat Management Plan
LUC	Land Use Control
MD	munitions debris
MDAS	material documented as safe
MDEH	Material Documented as an Explosive Hazard
MEC	munitions and explosives of concern
MMRP	Military Munitions Response Program
MOUT	Military Operations in Urban Terrain
MPPEH	Material Potentially Presenting an Explosive Hazard
MRA	munitions response area
MRS	munitions response site
QA	quality assurance
QC	quality control
RAO	remedial action objective
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
ROD	Record of Decision

Acronyms and Abbreviations (continued)

Shaw	Shaw Environmental Inc.
SSWP	site-specific work plan
SUXOS	Senior Unexploded Ordnance Supervisor
TIP	Technical Information Paper
USACE	U.S. Army Corps of Engineers
UXO	unexploded ordnance
UXOQCS	Unexploded Ordnance Quality Control Specialist
WERS	Worldwide Environmental Remediation Services

Definitions¹

Discarded Military Munitions (DMM)² – Generally, military munitions that have been abandoned without proper disposal or 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)).

Military Munitions – Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the 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, including bulk explosives and chemical warfare 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.

The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, except that the term does 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)(A))

Munitions Constituents (MC) – Generally, any materials originating from unexploded ordnance (UXO), discarded military munitions (DMM), or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions. (10 U.S.C. 2710 (e)(3))

Munitions Debris – Remnants of munitions (e.g. fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization or disposal.

Munitions and Explosives of Concern (MEC)²– This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks, means:

1 Official definitions provided in Department of Defense Manual 6055.09-M, DoD Ammunition and Explosives Safety Standards, February 29, 2008, administratively reissued August 4, 2010. Vol. 8 of 6055.09-M is Change 1.

2 For the purposes of the Basewide Military Munitions Response Program (MMRP) being conducted for the former Fort Ord, MEC [DMM, UXO] does not include small arms ammunitions .50 caliber and below.

(A) Unexploded Ordnance (UXO), as defined in 10 U.S.C. 101 (e) (5);

(B) Discarded military munitions (DMM), as defined in 10 U.S.C. 2710 (e) (2); or

(C) Munitions constituents (e.g., TNT, RDX) as defined in U.S.C. 2710 (e)(3), present in high enough concentrations to pose an explosive hazard

Munitions Response – Response actions, including investigation, removal and remedial actions to address the explosives safety, human health, or environmental risks presented by unexploded ordnance (UXO), discarded military munitions (DMM), or by munitions constituents (MC) or to support a determination that no removal or remedial action is required

Material Potentially Presenting an Explosive Hazard (MPPEH) – Material that, prior to determination of its explosive status, potentially contains explosives or munitions (e.g., munitions containers and packaging material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related debris); or material potentially containing a high enough concentration of explosives such that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, or ventilation ducts that were associated with munitions production, demilitarization or disposal operations). Excluded from MPPEH are munitions within DoD’s established munitions management system and other hazardous items that may present explosion hazards (e.g., gasoline cans, compressed gas cylinders) that are not munitions and are not intended for use as munitions.

Munitions Response Area (MRA) – Any area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples include former ranges and munitions burial areas. A munitions response area is comprised of one or more munitions response sites.

Munitions Response Site (MRS) – A discrete location within a MRA that is known to require a munitions response.

Range-related Debris – Debris, other than munitions debris, collected from operational ranges or from former ranges (e.g. target debris, military munitions packaging and crating material).

Unexploded Ordnance (UXO)²– 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 either by malfunction, design, or any other cause (10 U.S.C. 101 (e) (5) (A) through (C)).

UXO Technicians – Personnel who are qualified for and filling Department of Labor, Service Contract Act, Directory of Occupations, contractor positions of UXO Technician I, UXO Technician II, and UXO Technician III.

UXO-Qualified Personnel – Personnel who have performed successfully in military EOD positions, or are qualified to perform in the following Department of Labor, Service Contract Act, Directory of Occupations, contractor positions: UXO Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist, or Senior UXO Supervisor.

1.0 Introduction

This Technical Information Paper (TIP) describes the work elements and results for the munitions and explosives of concern (MEC) remedial action conducted within the 100-foot buffer area surrounding the Military Operations in Urban Terrain (MOUT) Site, hereinafter referred to as the MOUT Site Buffer, at the former Fort Ord, California. The work was performed by ITSI Gilbane Company (ITSI Gilbane, formerly Innovative Technical Solutions, Inc. [ITSI]) for the U.S. Army Corps of Engineers (USACE) under the Worldwide Environmental Remediation Services (WERS) Contract # W912DY-10-D-0024, Task Order No. CM 01. WERS Contract #W912DY-10-D-0024 became effective in September 2010. This work has been completed in accordance with the USACE Statement of Work ([Appendix A](#)), the *Final Site-Specific Work Plan Munitions and Explosives of Concern Remedial Action, Non-Burn Areas, Former Fort Ord, California* (SSWP; Shaw, 2010); the *Final Work Plan, Remedial Design/Remedial Action, Track 3* (RD/RA - USACE, 2009); and the *Final Track 3 Record of Decision, Impact Area Munitions Response Area, Track 3 Munitions Response Site, Former Fort Ord, California* (ROD; U.S. Department of the Army [Army], 2008).

1.1 Purpose and Scope

This TIP describes the remedial action conducted within the MOUT Site Buffer, a portion of the Impact Area Munitions Response Area (MRA). The general scope of the remedial action, as defined in the Track 3 ROD (Army, 2008), is to manage “the potential risk to future land users from MEC at the Impact Area MRA.” The MOUT Site Buffer is a portion of the 100-foot buffer area within the Impact Area MRA, where subsurface MEC removal is to be conducted under the Track 3 ROD. The major event milestones of this remedial action are shown in [Table 1](#).

Track 3 sites are areas at the former Fort Ord where MEC is known or suspected to be present, but MEC investigations have not yet been completed. The Track 3 site, known as the Impact Area MRA, consists of the 6,560-acre portion of the 8,000-acre historical Impact Area that is entirely within the natural resources management area described in the *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California* (HMP, [USACE, 1997]) and is currently identified for transfer to the Bureau of Land Management (BLM). The Impact Area MRA is designated as a habitat reserve in the Fort Ord Reuse Authority Base Reuse Plan.

The scope of this project, as defined in the SSWP (Shaw, 2010) and approved field work variance (FWV), entailed manual vegetation clearance and a technology-aided surface and subsurface MEC removal within the 100-foot buffer area surrounding the MOUT Site, consisting of approximately 22 acres. Surface and subsurface MEC removal activities were conducted simultaneously to avoid visiting grids within the MOUT Site Buffer multiple times. Collection of data using Digital Geophysical Mapping (DGM) was determined to be technically infeasible, based on the significant slopes and oak tree stands within the Buffer area. Surface and subsurface MEC remediation was completed over the entire project area with the exception of existing paved roads within the project area. Surface and subsurface MEC remediation within the MOUT Site Buffer were performed to allow for limited ground disturbance in the MOUT Site Buffer by firefighting personnel in the event of a wildfire.

This TIP details the work completed as part of the MOUT Site Buffer MEC remedial action and provides discussion of the following tasks:

- Mobilization and site setup
- Vegetation clearance in the MOUT Site Buffer
- MEC removal area grid and boundary survey
- Technology-aided surface and subsurface MEC removal

1.2 Approval Documents

The work was conducted in accordance with the Final RD/RA Work Plan (USACE, 2009) governing the Track 3 Impact Area MRA. The SSWP (Shaw, 2010) detailed the scope and site-specific procedures for the MEC remedial action at the MOUT Site Buffer.

The Final SSWP (Shaw, 2010) was amended by the following FWV:

- 03-012 (AR# OE-0685D.4)
 - 1) Collection of data using DGM was determined to be technically infeasible, based on the significant slopes and oak tree stands within the Buffer area. Conduct analog (mag and dig) subsurface MEC removal instead of DGM based.

- 2) Increase quality control (QC) seed placement to approximately 1 QC seed per acre, from a **minimum** of 1 QC seed per 4 acres in the Final SSWP (Shaw, 2010).
- 3) Conduct manual vegetation cutting within the MOUT Site Buffer.
- 4) Allow completion of surface and subsurface MEC removal activities to be conducted simultaneously to avoid visiting grids within the MOUT Site Buffer multiple times.

FWV 03-012 is included as [Appendix B](#).

1.3 Project Personnel and Subcontractors

MEC removal work was performed with qualified unexploded ordnance (UXO) technicians who met or exceeded the requirements of WERS data item description (DID) 012-01. The key personnel for ITSI Gilbane were:

- Senior Unexploded Ordnance Supervisor (SUXOS): Brad Olson
- UXO QC Specialist (UXOQCS): Bruce McClain
- UXO Safety Officer: Val Valdez
- Contractor QC Systems Manager: Tom Ghigliotto (PAM Environmental)
- Project Manager: Steve Crane
- Deputy Project Manager: Erin Caruso
- Task Manager: Kevin Siemann

The following tasks were subcontracted:

- Vegetation clearance of the MOUT Site Buffer (High Sierra Fire, Inc.)
- Recycling of metallic target debris (A & S Metals)
- Disposal/recycling of munitions debris (MD) (FACT International)

1.4 *Health and Safety*

This project was conducted in accordance with the Accident Prevention Plan – Munitions and Explosives of Concern (MEC) Removal and Soil Remediation Project, Former Fort Ord, California, (ITSI, 2013).

1.5 *Report Organization*

This TIP was prepared in accordance with the preparation instructions outlined in DID, MR-030, Site Specific Final Report (USACE, 2003). The report also incorporates elements of U.S. Environmental Protection Agency (EPA) guidance for a Remedial Action Completion Report.

Sections of this TIP are organized as follows:

- Section 1.0 Introduction
- Section 2.0 Site Background
- Section 3.0 Overview of Remedial Action
- Section 4.0 Site Preparation
- Section 5.0 Analog MEC Removal
- Section 6.0 Quality Assurance (QA)/QC
- Section 7.0 MEC and MD Removal
- Section 8.0 Environmental Protection
- Section 9.0 Protectiveness Assessment
- Section 10.0 References
- Table 1 Major Event Milestones, MOUT Site Buffer Remedial Action
- Table 2 Ranges Associated with MOUT Site Buffer
- Table 3 MEC Items Recovered within the MOUT Site Buffer during Previous Investigations
- Table 4 Summary of Survey and Removal Methods by Grids
- Table 5 MEC Items Found During Analog Surface and Subsurface Removal
- Table 6 Cumulative Statistical Results

- Table 7 MEC Items Recovered During Remedial Action
- Figure 1 MOUT Site Buffer Location Map
- Figure 2 Site Map, MOUT Site Buffer
- Figure 3 MEC Found During Previous Investigations
- Figure 4 Operations MOUT Site Buffer
- Figure 5 MD Weight by Grid, MOUT Site Buffer
- Figure 6 MEC Items Found, MOUT Site Buffer
- Appendix A Task Order Statement of Objectives
- Appendix B FWV
- Appendix C Daily QC, Safety, SUXOS Forms
- Appendix D USACE Form 948s
- Appendix E Explosives Accountability
- Appendix F MOUT Site Buffer Explosives Safety Submission
- Appendix G Responses to Comments

1.6 Applicable or Relevant and Appropriate Requirements

Applicable or relevant and appropriate requirements (ARARs) were outlined in the Track 3 ROD (Army, 2008). The performance of this remedial action was in compliance with the ARARs outlined in that document.

2.0 *Site Background*

2.1 *Site Location*

The MOUT Site Buffer is 100 feet wide and surrounds the entire MOUT Site. It is located at the northern edge of the Impact Area MRA (Figure 1). The area where surface and subsurface MEC remediation were performed lies to the southeast and northwest of Impossible Canyon Road, south of Eucalyptus Road, and west of Barloy Canyon Road (Figure 2). Former U.S. Army training ranges located within and adjacent to the MOUT Site are also shown on Figure 2. Terrain within the MOUT Site Buffer varies from relatively flat to very steep (> 30% slope).

2.2 *Population, Proximity, and Access*

The MOUT Site Buffer is located within the Impact Area MRA which is currently enclosed by a four-strand barbed wire fence with concertina wire along critical locations. The MOUT Site Buffer is located on land that is planned to be transferred to the BLM and is adjacent to land (the MOUT Site) that has been transferred to the Fort Ord Reuse Authority and scheduled for ultimate transfer to Monterey Peninsula College for continued military and police training. Nearby BLM land, outside of the Impact Area MRA, is open to the public for hiking, biking, jogging, and horseback riding. Access to the Impact Area MRA is restricted to authorized personnel only in accordance with the munitions response site (MRS) Security Program being implemented by the Army (Army, 2011). Existing access deterrents, such as fencing posted with warning signs approximately every 500 feet along the fencing, discourage, but do not prevent, entry into the area. Personnel from the Fort Ord Base Realignment and Closure (BRAC) office and BLM routinely check the Impact Area MRA fences to ensure that they remain in good condition and to identify/complete needed repairs in a timely manner. The fences are maintained through an inter-service support agreement with the BLM.

2.3 *Reuse*

The Impact Area MRA including the MOUT Site Buffer is currently designated for transfer to BLM as habitat reserve. The HMP (USACE, 1997) describes special land restrictions and habitat management requirements within habitat reserve areas. Habitat reserve areas support special status plant and animal species that require implementation of mitigation measures during Army cleanup activities identified in the HMP to ensure compliance with the Endangered Species Act and to minimize potential adverse impacts to listed species. Based on information

provided by BLM, the reuse of the area as a habitat reserve is anticipated to include a variety of activities including:

- Road and trail management and maintenance
- Habitat enhancement, including prescribed burning
- Fuel break construction and management
- Use of administrative areas
- Habitat monitoring and educational programs
- Species specific monitors and habitat enhancement
- Recreational access on established routes

2.3.1 *Vegetation and Habitat Type*

Central maritime chaparral (CMC) is the dominant habitat type within the MOUT Site Buffer. Other habitats present include limited areas of coast live oak woodland, grassland, and coastal scrub. CMC is a dominant habitat type at Fort Ord and is identified as a protected plant community in the HMP for Former Fort Ord (USACE, 1997). This habitat supports approximately 50 to 85% of the total distribution of several rare, threatened, and endangered plants occurring at Fort Ord, which are designated as protected under the HMP.

The dominant shrub species observed at the MOUT Site Buffer include shaggy-barked manzanita (*Arctostaphylos tomentosa* ssp. *tomentosa*), sandmat manzanita (*A. pumila*), chamise (*Adenostoma fasciculatum*), Monterey ceanothus (*Ceanothus rigidus*), and Monterey manzanita (*A. montereyensis*). These shrub species contribute most of the overall vegetative cover. HMP-listed shrub species present include sandmat manzanita, Monterey manzanita, Hooker's manzanita, and Monterey ceanothus. Surveys conducted in 2011 for HMP herbaceous annual species identified small localized populations of Monterey spineflower (*Chorizanthe pungens* var. *pungens*) and sand gilia (*Gilia tenuiflora* ssp. *arenaria*) within openings in the CMC (Tetra Tech, Inc., 2012). No Seaside bird's beak (*Cordylanthus rigidus* ssp. *littoralis*) or Yadon's piperia (*Piperia yadonii*) were identified within the MOUT Site Buffer during the baseline surveys in 2011. However, Yadon's piperia has been observed less than 0.5 mile from the site and has the potential to occur in the CMC habitat.

The Impact Area MRA including the MOUT Site Buffer is within the Natural Resource Management Area which is designated for transfer to BLM and will remain undeveloped as

habitat reserve. Chapter 3 of the HMP (USACE, 1997) describes mitigation measures that must be implemented during MEC investigation and remediation. In addition, there are four biological opinions (U.S. Fish and Wildlife Service, USFWS, 1999, 2002, 2005, and 2011) and one amendment (2007) that contain terms and conditions and reasonable and prudent measures that need to be implemented during MEC activities to minimize and reduce impacts to listed species. These are described in further detail in [Section 8.0](#) of this TIP. Habitat management activities related to the munitions remedial actions that are required by the HMP have been conducted for the MOUT Site Buffer. These are also described in further detail in [Section 8.0](#) of this TIP.

2.4 *Regulatory Status*

After it was established in 1917, Fort Ord primarily served as a training and staging facility for infantry troops. From 1947 to 1974, Fort Ord was a basic training center. After 1974, the 7th Infantry Division was based at Fort Ord. Fort Ord was selected for closure in 1991. The majority of the soldiers were reassigned to other Army posts in 1993. There is no longer an active Army division stationed at the former Fort Ord.

Fort Ord was placed on the National Priorities List of Superfund sites by the EPA on February 21, 1990, due to evidence of contaminated soil and groundwater. A Federal Facility Agreement (FFA) was signed by the Army, EPA, Department of Toxic Substances Control (DTSC), and the Regional Water Quality Control Board, a part of the California EPA. The FFA established procedures and schedules for conducting remedial investigations (RIs) and feasibility studies (FSs) and requires remedial actions be completed as expeditiously as possible. The former Fort Ord was selected in 1991 for BRAC, and the base was officially closed in September 1994. The Army began investigating and removing MEC at the former Fort Ord after the BRAC listing, and a munitions response RI/FS began in 1998. In April 2000, an agreement was signed between the Army, EPA, and DTSC to evaluate MEC at the former Fort Ord subject to the provisions of the FFA. The April 2000 agreement also formalized the regulatory agencies' roles in the Military Munitions Response Program (MMRP) at former Fort Ord.

Following completion of the *Track 3 Impact Area MRA Munitions Response Remedial Investigation/Feasibility Study, Former Fort Ord, California* (MACTEC, 2007), the Army prepared the Track 3 ROD (Army, 2008) which is the decision document presenting the selected remedial action for MEC in the Impact Area MRA. The remedy was selected following a 60-day public comment period that ended on August 27, 2007, for the *Superfund Proposed Plan Remedial Action is Proposed for Impact Area Munitions Response Area, Track 3 Munitions*

Response RI/FS (Army, 2007). The remedy was selected in accordance with the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan.

The decision documented in the Track 3 ROD (Army, 2008) is undertaken pursuant to the President's authority under CERCLA Section 104, as delegated to the Army in accordance with Executive Order 12580, and in compliance with the process set out in CERCLA Section 120. The selection of the remedy is authorized pursuant to CERCLA Section 104, and the selected remedy is being carried out in accordance with CERCLA Section 121. The Army and the EPA have jointly selected the remedy. The California EPA, as represented by the DTSC, has had an opportunity to review and comment on the Track 3 ROD.

2.5 Site Features and History of Military Munitions Use

Since 1917, portions of former Fort Ord were used by cavalry, field artillery, and infantry units for maneuvers, target ranges, and other purposes. From 1947 to 1974, Fort Ord was a basic training center. After 1974, the 7th Infantry Division occupied Fort Ord. Military munitions were fired and used on the facility, including artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, practice land mines, pyrotechnics, bombs, and demolition materials.

Fort Ord was selected in 1991 for decommissioning, but troop reallocation was not completed until 1993, and the Base was not officially closed until September 1994. The property remaining in the Army's possession was designated as the Presidio of Monterey Annex on October 1, 1994, and subsequently renamed the Ord Military Community. Although Army personnel still operate parts of the Base, no active Army division is stationed at the former Fort Ord. Since the Base was selected in 1991 for BRAC, site visits, historical and archival investigations, military munitions sampling, and removal actions have been performed and documented in preparation for transfer and reuse of the former Fort Ord property. The Army will continue to retain the Ord Military Community and the U.S. Army Reserve Center located at the former Fort Ord. The remainder of Fort Ord was identified for transfer to federal, state, and local government agencies and other organizations and, since Base closure in September 1994, has been subjected to the reuse process.

The Impact Area MRA is a complex of numerous former military ranges with a variety of historical uses, designs, and characteristics. Over the years, various types of munitions have been used during training activities within the Impact Area MRA, including hand grenades,

mortars, rockets, practice mines, artillery, and small arms. Select ranges were used for small arms training activities only, while other ranges are characterized as multi-use. In general, the firing points of the ranges were located near the perimeter of the MRA, and firing was directed toward the interior portion of the range complex. Training activities at the Impact Area MRA ceased after the closure of Fort Ord in 1994. The former ranges within the MRA contain a concentration of similar expended munitions and MEC. The Impact Area MRA is fenced, warning signs are posted, and access is controlled by the Army. The perimeter of the historical Impact Area is patrolled to detect and prevent trespassing.

Several former ranges have been identified to be partially or fully contained within the MOUT Site Buffer (Figure 2). Table 2 provides a list of former ranges which overlap with the MOUT Site Buffer.

2.6 Summary of MEC-Related Activities and Data Collected Prior to the Remedial Action

MEC removal work completed as part of sampling activities included the recovery of items within and adjacent to the perimeter of the MOUT Site Buffer. Table 3 lists the MEC items recovered during previous investigations, including the depths at which these items were identified.

3.0 *Overview of Remedial Action*

3.1 *Remedial Action Objectives*

The remedial action objective (RAO) for the Track 3 remedy is to protect human health and the environment in a manner that complies with the ARARs. The RAO will be achieved by implementing the selected remedy of Technology-Aided Surface MEC Remediation, with Subsurface MEC Remediation in Selected Areas and Land Use Controls (LUCs). The selected remedy is designed to achieve both substantial risk reduction through MEC remediation and risk management through implementation of LUCs. The selected remedy best balances the risk reduction and associated environmental impacts in supporting the anticipated future use of the site as a habitat reserve. The presence of MEC in the Impact Area MRA was not identified as a concern in terms of explosive safety risks to ecological receptors.

Further statements regarding the RAOs are provided in the Final RD/RA Work Plan (USACE, 2009):

- “The selected remedy addresses current or potential explosives safety risks to human health and the environment from MEC within the Impact Area MRA.”
- “The most significant short term objective is to remove surface MEC and prevent public access until MEC removal is completed.”
- “The long-term objective is to make the property safe for required habitat management activities by supplementing the remedial action with appropriate institutional controls ... that will effectively manage risk from any potentially residual MEC after the remedial action is completed.”

The selected remedy for the Impact Area MRA identified in the Track 3 ROD (Army, 2008) includes the following components:

- Clearing of vegetation, primarily by planned prescribed burning, to provide access for MEC remediation. Manual and mechanical cutting of unburned MEC vegetation larger than 50 acres can be implemented if coordinated with and approved by the U.S. Fish and Wildlife Service.
- Technology-aided surface MEC removal. The method consists of a technology-aided visual search to identify MEC at the ground surface. Technology aids include MEC

detection equipment (Schonstedt magnetometers) to facilitate detection of surface MEC in areas where the ground surface is not visible.

- DGM to provide a record of anomalies to assist future property users in identifying areas where explosives safety support (e.g., on site construction support) may be required for activities involving ground disturbance or intrusive work.
- Within specific areas identified for subsurface MEC removal activity, anomalies must be investigated or resolved. Areas requiring subsurface removal include regularly maintained fuel breaks and access roads, a minimum 100-foot buffer area between habitat and developed areas, and other areas to address specific risk and/or land use needs, such as future habitat restoration sites and former impact areas where military munitions with sensitive fuzes were fired and where anomalies are present in high densities. Recovered MEC would be detonated, using engineering controls. This work was performed in conjunction with surface MEC removal across the entire site at the MOUT Site Buffer.
- Implementation of LUCs, including MEC recognition and safety training, construction support for ground disturbing or intrusive activities and UXO-qualified personnel support, access management measures including regular security patrols of the Impact Area MRA perimeter, maintenance of fences and signs, helicopter support for future prescribed burns in selected areas for future habitat management purposes, weed abatement support, and property transfer documentation that outlines land use restrictions, including prohibition of unrestricted land use.

The MOUT Site Buffer is a portion of the 100-foot buffer area within the Impact Area MRA, where subsurface MEC removal is to be conducted under the Track 3 ROD. Vegetation removal was accomplished by manual cutting. DGM survey was not conducted due to difficult terrain. Surface and subsurface removal activities were conducted simultaneously to avoid visiting the removal grids multiple times. Subsurface MEC removal was completed within the entire footprint of the MOUT Site Buffer, except for the footprint of paved Impossible Canyon Road.

3.2 MEC Remedial Action

3.2.1 Remedial Action Chronology

As outlined in the Final RD/RA Work Plan (USACE, 2009) the SSWP (Shaw, 2010), and FWV 03-012 ([Appendix B](#)), the following field activities were conducted to implement the MEC remedial action at the MOUT Site Buffer:

- Vegetation Clearance in the MOUT Site Buffer

- Grid and Border Survey
- Technology-Aided Surface and Subsurface MEC Removal
- MEC Detonation
- MD Disposal

[Table 1](#) provides a summary of major events associated with the remedial action at the MOUT Site Buffer.

3.2.2 Variations from the Site-Specific Work Plan

One variance to the planned methods and areas described in the Final RD/RA Work Plan (USACE, 2009) and the SSWP (Shaw, 2010) occurred prior to the start of work to address known field conditions (significant slopes within the project area). The FWV which modified planned methods at the MOUT Site Buffer is included in [Appendix B](#) and listed in [Section 1.2](#).

3.2.3 Summary of Remedial Action Methods

The scope of work for the MOUT Site Buffer was modified, as outlined above, by FWV 03-012. Track 3 remedial actions were completed within the limits of the MOUT Site Buffer, with the exception of the implementation of LUCs. [Figure 4](#) shows an overview of remedial actions performed at the MOUT Site Buffer.

4.0 *Site Preparation*

4.1 *Vegetation Clearance*

Vegetation clearance in the MOUT Site Buffer began in February 2013 and was completed in March 2013. Large Toro Manzanita plants were flagged and avoided during vegetation clearance activities to minimize long-term environmental impacts to these HMP species within the MOUT Site Buffer. Oak trees greater than four inches in diameter were not removed, but were limbed up to allow personnel access while minimizing environmental impacts. Vegetation clearance in the MOUT Site Buffer was performed using manual means. Limited clearance of range-related debris and target debris occurred concurrently with this phase of work.

4.2 *Grid and Border Survey*

UXO personnel, performing anomaly avoidance, established a 100-foot by 100-foot grid system across the MOUT Site Buffer. The grid system was established to allow completion of work within the MOUT Site Buffer that did not align with the already established Fort Ord Master Grid System. This deviation from the Fort Ord Master Grid System did not negatively affect the overall work quality or the ability to satisfy the remedial action objectives. The grid nodes were marked with wooden stakes, each labeled with a unique identification marked on the southwestern corner stake.

5.0 *Analog MEC Removal*

Analog MEC removal methods were used for surface and subsurface MEC remediation within the MOUT Site Buffer. [Table 4](#) provides a summary of survey and removal methods by grids. [Table 5](#) lists the MEC items recovered during analog surface and subsurface MEC removal.

5.1 *Technology-Aided Surface and Subsurface MEC Removal*

Surface and subsurface MEC removal activities, including grid staking, started in February 2013 and were completed in April 2013. 95 MEC items were recovered from the MOUT Site Buffer during the work described in this TIP and are shown in [Table 5](#) and on [Figure 6](#). QC/QA processes were implemented in accordance with the Final SSWP (Shaw, 2010) and the Final MEC Procedures Supplement (ITSI, 2011). Simultaneous surface and subsurface MEC removal occurred throughout the entire footprint of all 94 MOUT Site Buffer grids, except for those portions of grids with paved sections of Impossible Canyon Road within their footprint. In such grids, simultaneous surface and subsurface MEC removal activities ceased at the start of the paved area. All surface and subsurface MEC removal activities were performed using analog equipment (Schonstedt and Whites magnetometers). All subsurface anomalies were investigated and removed.

6.0 QC/QA

This section discusses the QC and QA procedures that were used at the MOUT Site Buffer.

6.1 QC

QC is conducted by the Contractor. Several QC measures were conducted by the UXOQCS. A discussion of the pertinent QC measures and procedures is included in the following sections.

6.1.1 Analog QC

6.1.1.1 Field Activities

Daily QC, Safety, and SUXOS forms are included in [Appendix C](#). During the combined surface and subsurface removal operations at the MOUT Site Buffer, the UXOQCS visually observed teams and conducted periodic spot checks to ensure grids were receiving complete coverage during the combined surface and subsurface removal phase. The UXOQCS performed analog QC surveying of at least 10% of completed surface and subsurface MEC removal grids.

Additionally, 25 combined surface and subsurface blind seeds were emplaced by the UXOQCS prior to the start of technology-aided surface removal field operations. All of these seeds were located in the field by the UXO teams.

6.1.1.2 Field Data Review

The UXOQCS reviewed every entry received from personnel in the field during each phase of work prior to entry in the database. Each entry was reviewed for completion of field QC, MEC and MD nomenclature, and completion of a given grid.

6.2 Quality Assurance

QA was conducted by the USACE OE Safety Specialist. QA seeds were placed within the MOUT Site Buffer by the USACE OE Safety Specialist. All QA seeds were located and removed from the MOUT Site Buffer during initial removal work within the MOUT Site Buffer with the exception of one. Following investigation of the missed QA seed, it was determined that this seed had been inadvertently placed just outside of the project area.

6.2.1 Analog Quality Assurance

Surface and subsurface MEC remediation QA has been completed for the MOUT Site Buffer. USACE Form 948s are provided in [Appendix D](#).

7.0 MEC and MD Removal

This section provides summaries of the MEC and MD removed from the MOUT Site Buffer.

14 MEC items were encountered and removed from the MOUT Site Buffer as part of field work activities which occurred prior to the activities described in this TIP. These items are shown in [Table 3](#).

7.1.1 MEC Removal

95 MEC items were encountered and removed as part of MEC remediation activities in the MOUT Site Buffer described in this TIP. All MEC items removed as part of MEC remediation activities described in this TIP are shown in [Table 5](#) and in [Table 7](#).

Locations of MEC items encountered and removed as part of MEC remediation activities prior to the work described in this TIP are shown on [Figure 3](#). [Figure 6](#) shows all MEC items encountered and removed during activities described in this TIP.

7.1.2 MD Removal

The MD removed from the MOUT Site Buffer as part of MEC remediation activities described in this TIP was recorded based on weight per 100-foot by 100-foot grid. An estimated 7,415 pounds of MD were removed from the MOUT Site Buffer as part of surface and subsurface MEC removal activities. Densities of MD weights by grid are shown on [Figure 5](#). [Table 6](#) summarizes the cumulative statistical results for the MOUT Site Buffer work.

All ordnance related items were initially classified as MPPEH. Following initial classification, the MPPEH was certified by the SUXOS, UXOQCS, and USACE OE Safety Specialist as either material documented as safe (MDAS) or material documented as an explosive hazard (MDEH). All MDAS was certified free from explosive material and stored in lockable roll-off containers. All MDAS was demilitarized as appropriate. MDAS was inspected and certified and transported to a recycling facility. MDEH was destroyed by detonation as described below in [Section 7.1.3](#).

7.1.3 Detonation of Munitions and Explosives of Concern

During the course of the MOUT Site Buffer remedial action, 95 MEC items were destroyed by detonation. Explosives Accountability forms with dates of demolition operations are included in

[Appendix E](#). All items were destroyed by detonation, and details, such as the date and result of this operation, have been reported in the Fort Ord MMRP database.

7.1.4 Disposition of Munitions Debris

The MDAS was transported to FACT International for smelting and eventual recycling. DD Form 1348-1A documentation accompanied the MDAS.

7.2 MEC Item Description and Distribution

The distribution of all MEC items found and removed as part of this remedial action within the MOUT Site Buffer is shown on [Figure 6](#). The MEC items found and removed in the MOUT Site Buffer as part of this remedial action consisted of three MKII fragmentation hand grenades, an M19 series white phosphorus rifle grenade, a Type 89 50mm mortar projectile, an M6 high explosive anti-tank 2.36 inch rocket, and two ground illumination signals. Additionally, two burial pits were located in the MOUT Site Buffer. One pit contained seven M228 practice hand grenade fuzes, and the other pit contained 78 M1 flamethrower ignition cylinders.

8.0 Environmental Protection

8.1 Description of Impacts and Mitigation Measures

The MOUT Site Buffer is within the Natural Resource Management Area which is designated for transfer to BLM as undeveloped habitat reserve under the HMP (USACE, 1997). The HMP describes special land restrictions and habitat management requirements within habitat reserve areas. Habitat reserve areas support special-status plant and animal species that require implementation of mitigation measures identified in the HMP to minimize potential adverse impacts to listed species. As described above in [Section 2.3.1](#), the site consists primarily of CMC, with some areas of grasslands, coastal scrub, and oak woodland.

CMC is a HMP-protected habitat and contains numerous species listed as protected in the HMP. HMP shrubs present within the MOUT Site Buffer include Monterey manzanita, sandmat manzanita, Hooker's manzanita, and Monterey ceanothus. Baseline studies conducted in 2011 identified the presence of two HMP annual plant species, sand gilia and Monterey spineflower (Tetra Tech, Inc., 2012). No Yadon's piperia has been identified within the site; however, this species has been observed less than 0.5 mile from the site and has the potential to occur in the CMC habitat. Two HMP wildlife species have the potential occur within the MOUT Site Buffer, black legless lizard (*Anniella pulchra* ssp. *nigra*) and California tiger salamander (*Ambystoma californiense*); however, neither species were encountered during project activities.

The activities conducted on the site included the following: mowing and hand-cutting of chaparral and oak woodland understory vegetation to support combined surface and subsurface MEC removal, pruning of oak trees, and vehicle use to support combined surface and subsurface MEC removal.

Mitigation measures to reduce impacts to protected species during MEC remedial actions are taken from the HMP (USACE, 1997) and four Biological Opinions and one amendment provided by the U.S. Fish and Wildlife Service to address Army clean-up activities (USFWS, 1999, 2002, 2005, 2007 (amendment), and 2011). Mitigation and other environmental protection measures applicable to this project are:

- Baseline biological survey: The site had a baseline survey completed for HMP shrub and annual species before the start of work to document location and abundance of all shrub and annual HMP species. (See [Section 8.2 Biological Monitoring](#)).

- Follow-up monitoring: Follow-up monitoring will be conducted by an Army contractor to document recovery of HMP annual species and habitat. Follow-up monitoring has not yet been conducted and is not addressed in this report.
- Employee biological and natural resources training: Training for all project field personnel was conducted by the Project Biologist. Training included information on rare, threatened, and endangered species on the site, including a description of the species, their protected status, and a list of measures to be implemented to avoid and reduce impacts to these species and their habitat.
- Habitat checklist: Habitat checklists were prepared by the Project Biologist prior to project activities to identify the sensitive resources within the MOUT buffer site and the avoidance and minimization measures that would be implemented.
- Use of existing roads where possible: The exceptions to the requirement to utilize existing roads were where it was necessary to remove cut vegetation and access excavation sites for the subsurface MEC removal. These activities occasionally necessitated traversing the site using small tracked vehicles.
- Reduce disturbance footprint as much as possible: Disturbances were limited to those required for the above-mentioned activities. Monterey manzanitas within the site were flagged by the Project Biologist and avoided to the greatest extent feasible during vegetation removal. Grids containing populations of Monterey spineflower and sand gilia were manually cut prior to germination and specific populations and individuals were flagged for avoidance of trampling during MEC removal.

8.2 *Biological Monitoring*

In 2011, prior to the initiation of work, baseline studies were conducted within the MOUT Site Buffer to document the location and abundance of HMP shrub and annual plant species and habitats; the results of these surveys are presented in the *2011 Biological Monitoring Report for Units 11, 12, MOUT, 28, 9, 4, 5a; a portion of Unit 23 and Watkins Gate Burn Area; Units 15, 21, 32, and 34; South Boundary Road Unit; Units 18 and 22; and MRS 16 Former Fort Ord* prepared by Tetra Tech, Inc. in 2012. Follow-up monitoring will be conducted by an Army contractor to document the recovery of HMP species and habitat. Follow-up monitoring has not yet been conducted and is not addressed in this report.

8.3 Erosion Control

To reduce erosion concerns on bare mineral soils after MEC removal, normal vehicle access was restricted to existing roads and trails, and small tracked vehicles, used to conduct vegetation and subsurface removal, were not permitted on the steep slopes. ITSI Gilbane monitored the work site for potential erosion problems, and a final inspection was conducted by the Project Biologist.

9.0 *Protectiveness Assessment*

The protectiveness of the remedial action was evaluated against the requirements of the Track 3 ROD (Army, 2008). The remedial action performed at the MOUT Site Buffer was consistent with the Final SSWP (Shaw, 2010), the MEC Procedures Supplement (ITSI, 2011), and Track 3 RD/RA Work Plan (USACE, 2009), and no conditions contrary to these documents were encountered at the site.

All 94 surface and subsurface MEC remediation grids within the MOUT Site Buffer passed QC/QA. MEC items were located and removed from the surface and subsurface of the site with a high degree of certainty, with the exception of areas below the paved road.

Based on the Track 3 ROD (Army, 2008) and the Track 3 RD/RA Work Plan (USACE, 2009), the following actions will occur until all remedial actions within the Track 3 Impact Area MRA are complete:

- Site security of the Impact Area MRA will be maintained.
- Unauthorized public access to or within the Impact Area MRA will continue to be prohibited.
- MEC recognition and safety training as needed prior to property transfer and during the implementation of the remedial action.
- Provision of UXO-qualified personnel support for intrusive work.

At the completion of the remedial action within the Impact Area MRA, the Army will evaluate the work completed against planned reuse activities and the suitability of the LUCs that were selected as part of the remedy. The results of this evaluation will be included in a Remedial Action Completion Report. A detailed LUC implementation plan will also be developed prior to property transfer, in coordination with the future landowner and the regulatory agencies.

10.0 References

- ITSI Gilbane Company (ITSI), 2011. MEC Procedures, Former Fort Ord, California.
(AR OE-0737B)
- _____, 2013. *Accident Prevention Plan – Munitions and Explosives of Concern (MEC) Removal and Soil Remediation Project, Former Fort Ord, California.*
- MACTEC Engineering and Consulting, Inc. (MACTEC), 2007, *Track 3 Impact Area MRA Munitions Response Remedial Investigation/Feasibility Study, Former Fort Ord, California.* (AR OE-0596R)
- Shaw Environmental, Inc. (Shaw), 2010, *Site Specific Work Plan, Munitions and Explosives of Concern Remedial Action, Non-Burn Areas, Former Fort Ord, California.*
(AR OE-065D)
- Tetra Tech, (Tetra Tech) 2012. *2011 Biological Monitoring Report for Units 11, 12, MOUT, 28, 9, 4, 5a; a portion of Unit 23 and Watkins Gate Burn Area; Units 15, 21, 32, and 34; South Boundary Road Unit; Units 18 and 22; and MRS 16 Former Fort Ord*
(AR BW-2613)
- U.S. Army Corps of Engineers (USACE), 1997, *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California.* (AR BW-1787)
- _____, 2003, *Data Item Description, MR-030, Site Specific Final Report.*
- _____, 2009, *Final Work Plan, Remedial Design/Remedial Action, Track 3.* (AR OE-0660K)
- U.S. Department of the Army (Army), 2007, *Superfund Proposed Plan Remedial Action is Proposed for Impact Area Munitions Response Area, Track 3 Munitions Response RI/FS.* (AR OE-0623)
- _____, 2008, *Final Track 3 Record of Decision, Impact Area Munitions Response Area, Track 3 Munitions Response Site, Former Fort Ord, California.* (AR OE-0647)
- _____, 2011, *MRS Security Program* (AR OE-0422K)

- U.S. Fish and Wildlife Service (USFWS), 1999, *Biological and Conference Opinion on the Closure and Reuse of Fort Ord, Monterey County, California* (1-8-99-F/C-39R). Response to Army letter dated 11/11/98 to reinitiate formal consultation in accordance with Section 7 of Endangered Species Act of 1973, March. (AR BW-2232A)
- _____, 2002, Biological Opinion on the Closure and Reuse of Fort Ord, Monterey County, California, as it affects Monterey Spineflower Critical Habitat (1-8-01-F-70R), October. (AR BW-2233)
- _____, 2005, Biological Opinion, Cleanup and Reuse of Former Fort Ord, Monterey County, California, as it affects CTS and Critical Habitat for Contra Costa Goldfields (1-8-04-F-25R), March. (AR BW-2334)
- _____, 2007, Biological Opinion, Cleanup and Reuse of Former Fort Ord, Monterey County, California, as it affects CTS and Critical Habitat for Contra Costa Goldfields (1-8-04-F-25R), June 1. (AR BW-2334c)
- _____, 2011, Biological Opinion for the Former Fort Ord Vegetation Clearance Activities and Transfer of Parcel E29b.3.1 - 8-8-11-F-39 (AR BW-2579)

Tables

Table 1
Major Event Milestones, MOUT Site Buffer Remedial Action

Major Event	Date Started	Date Completed
Signature of Track 3 Record of Decision		May-08
Completion of Final RD/RA Work Plan		Aug-09
Completion of Final Site Specific Work Plan		Feb-10
Vegetation clearance, target and debris removal	Feb-13	Mar-13
Grid and border survey	Feb-13	Mar-13
Surface and subsurface removal	Feb-13	Apr-13
Munitions debris disposal	Feb-13	Apr-13

RD/RA denotes Remedial Design/Remedial Action.

Table 2
Ranges Associated with MOUT Site Buffer

Range/HA	Military History and Training Activities
Fragmentation Hand Grenade/HE Hand Grenade, HA-36	Range was used as a hand grenade range from at least 1966 to 1993. SOPs from 1973 through 1992 indicate that the range was a hand grenade range.
Mock Up Village, Combat in Cities, HA-75	Range was labeled as Mock up Village in 1940s. Mock up Village is labeled on 1947 7.5 min quadrangle photo map of Seaside. In the 1950s the area is labeled as Combat in Cities. This area was investigated as part of HA-35A.
Mout Complex, HA-35	This area is part of MRS-28 (MOUT Site).

Note: Ranges shown on Figure 1 not included in this table were included in Fort Ord range control maps. No other details were provided.

Table 3
MEC Items Recovered within the MOUT Site Buffer During Previous Investigations

MEC Item Description	Quantity of MEC Items Recovered in the MOUT Site Buffer	Recovery Depth for MEC Items Recovered in the MOUT Site Buffer (inches)
Grenade, hand, fragmentation, M67	1	0
Grenade, hand, fragmentation, M67	1	0
Projectile, 81mm, mortar, high explosive, M43 series	1	0
Projectile, 40mm, high explosive, M381	1	0
Grenade, hand, fragmentation, M67	1	0
Projectile, 40mm, practice, M407A1	1	0
Projectile, 40mm, practice, M407A1	1	0
Fuze, grenade, hand, M204 series	1	0
Grenade, hand, practice, M21	1	0
Grenade, hand, fragmentation, MK II	1	0
Signal, illumination, ground, M125 series	1	0
Grenade, hand, practice, M69	1	0
Grenade, hand, smoke, M48	1	0
Projectile, 40mm, parachute, star, M662	1	1

MEC denotes munitions and explosives of concern.
mm denotes millimeter.

Table 4
Summary of Survey and Removal Methods by Grids

Activity	Grids Completed	Total Grids	% of Total Grids
Analog Subsurface Removal (Mag and Dig)	94	94	100.00%

% denotes percent.

Table 5
MEC Items Found During Analog Surface and Subsurface Removal

Description	Number of Items	
	UXO	DMM
Fuze, grenade, hand, practice, M228	9*	0
Grenade, hand, fragmentation, MK II	3	0
Grenade, rifle, smoke, WP, M19 series	1	0
Ignition Cylinder, Flamethrower, M1	0	78*
Projo, 50mm, Mortar, Type 89, Japanese ni	1	0
Rocket, 2.36inch, HEAT, M6	1	0
Signal, illumination, ground, M126 series	1	0
Signal, illumination, ground, parachute, rifle, M19 series	1	0
Totals	17	78

MEC denotes munitions and explosives of concern.

DMM denotes discarded military munitions.

UXO denotes unexploded ordnance.

HEAT denotes high explosive anti-tank.

mm denotes millimeter.

** denotes burial pit*

Table 6
Cumulative Statistical Results

Parameter	Totals
Analog subsurface removal (acres)	19.33
MEC items	95
Total estimated MD weight (lbs) for all areas	7415
Total estimated RRD and OD (lbs) for all areas	3833

DGM denotes Digital Geophysical Mapping.

lb denotes pound.

MD denotes munitions debris.

MEC denotes munitions and explosives of concern.

OD denotes Other Debris.

RRD denotes range-related debris.

Table 7
MEC Items Recovered During Remedial Action

Date Found	Grid	Northing	Easting	Operation Type	Depth (in.)	Item Type	Qty	Description
2/20/2013	MOUT50	2119055.5	5753519.6	Mag and Dig	24	DMM	78	Ignition Cylinder, Flamethrower, M1
2/25/2013	MOUT34	2118946.9	5754258.4	Mag and Dig	1	UXO	1	Projo, 50mm, Mortar, Type 89, Japanese ni
2/27/2013	MOUT87	2120663.3	5754571.3	Mag and Dig	6	UXO	1	Grenade, rifle, smoke, WP, M19 series
2/27/2013	MOUT88	2120653	5754600.4	Mag and Dig	3	UXO	1	Signal, illum, ground, M126 series
2/27/2013	MOUT88	2120691	5754576.1	Mag and Dig	6	UXO	1	Rocket, 2.36inch, HEAT, M6
3/4/2013	MOUT21	2120076.1	5754473.9	Mag and Dig	6	UXO	1	Fuze, grenade, hand, prac, M228
3/4/2013	MOUT86	2120557.5	5754447.3	Mag and Dig	6	UXO	7	Fuze, grenade, hand, prac, M228
3/5/2013	MOUT84	2120413.9	5754312.2	Mag and Dig	3	UXO	1	Fuze, grenade, hand, prac, M228
3/7/2013	MOUT77	2120300.2	5753678.6	Mag and Dig	6	UXO	1	Signal, illum, ground, parachute, rifle, M19 series
3/18/2013	MOUT64	2119226.1	5752829.8	Mag and Dig	3	UXO	1	Grenade, hand, frag, MK II
3/19/2013	MOUT04	2120812.7	5755429.2	Mag and Dig	2	UXO	2	Grenade, hand, frag, MK II

HEAT denotes high explosive anti-tank.

in. denotes inch.

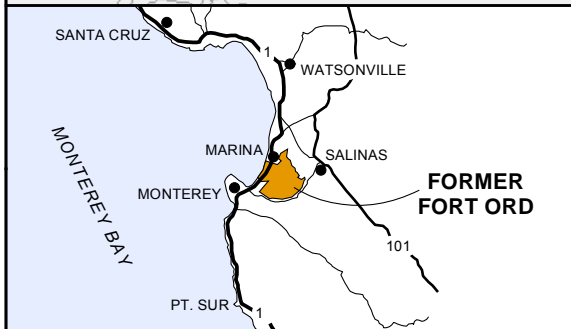
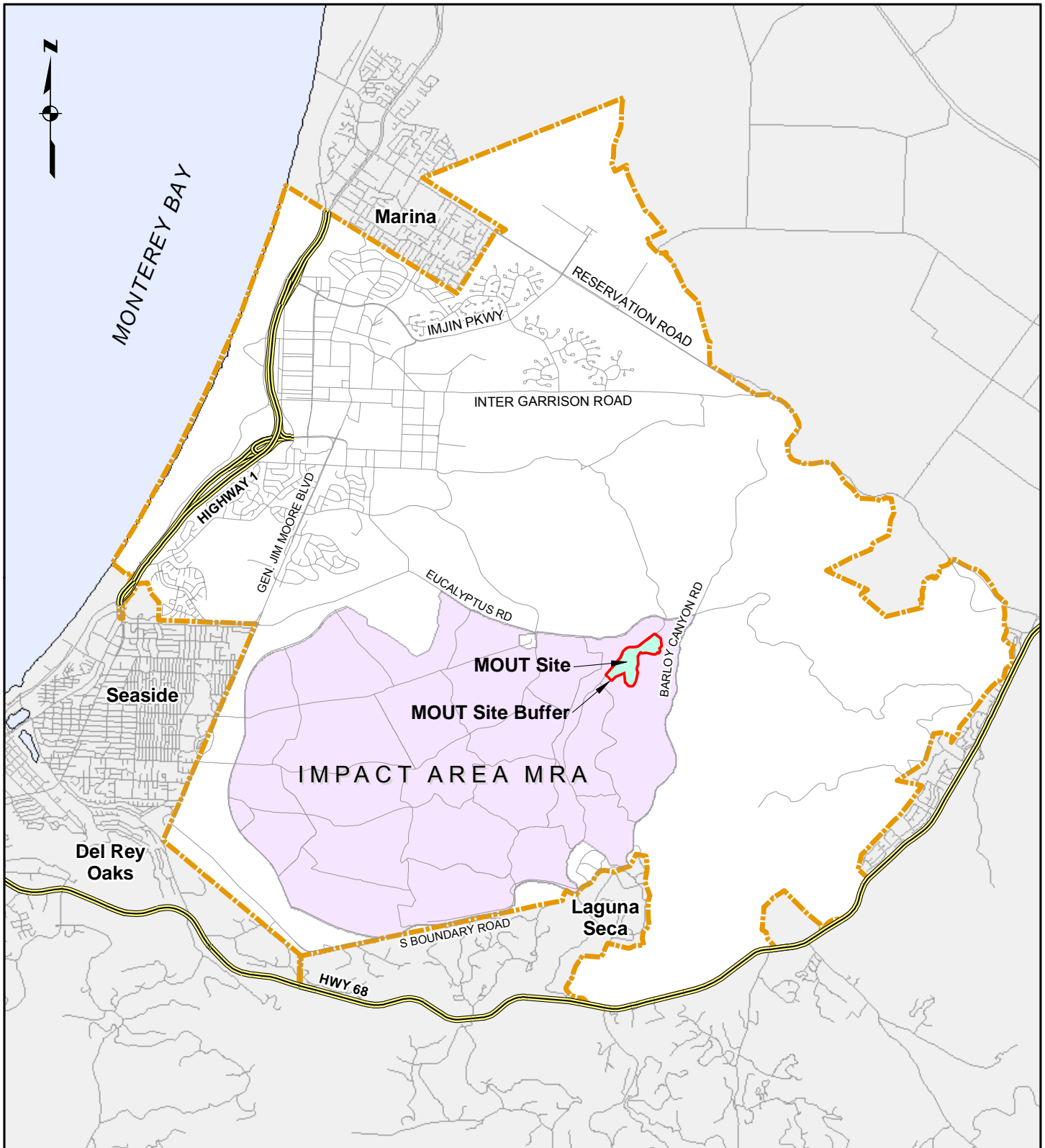
ITSI denotes Innovative Technical Solutions, Inc.

CBI&I denotes Chicago Bridge and Ironworks

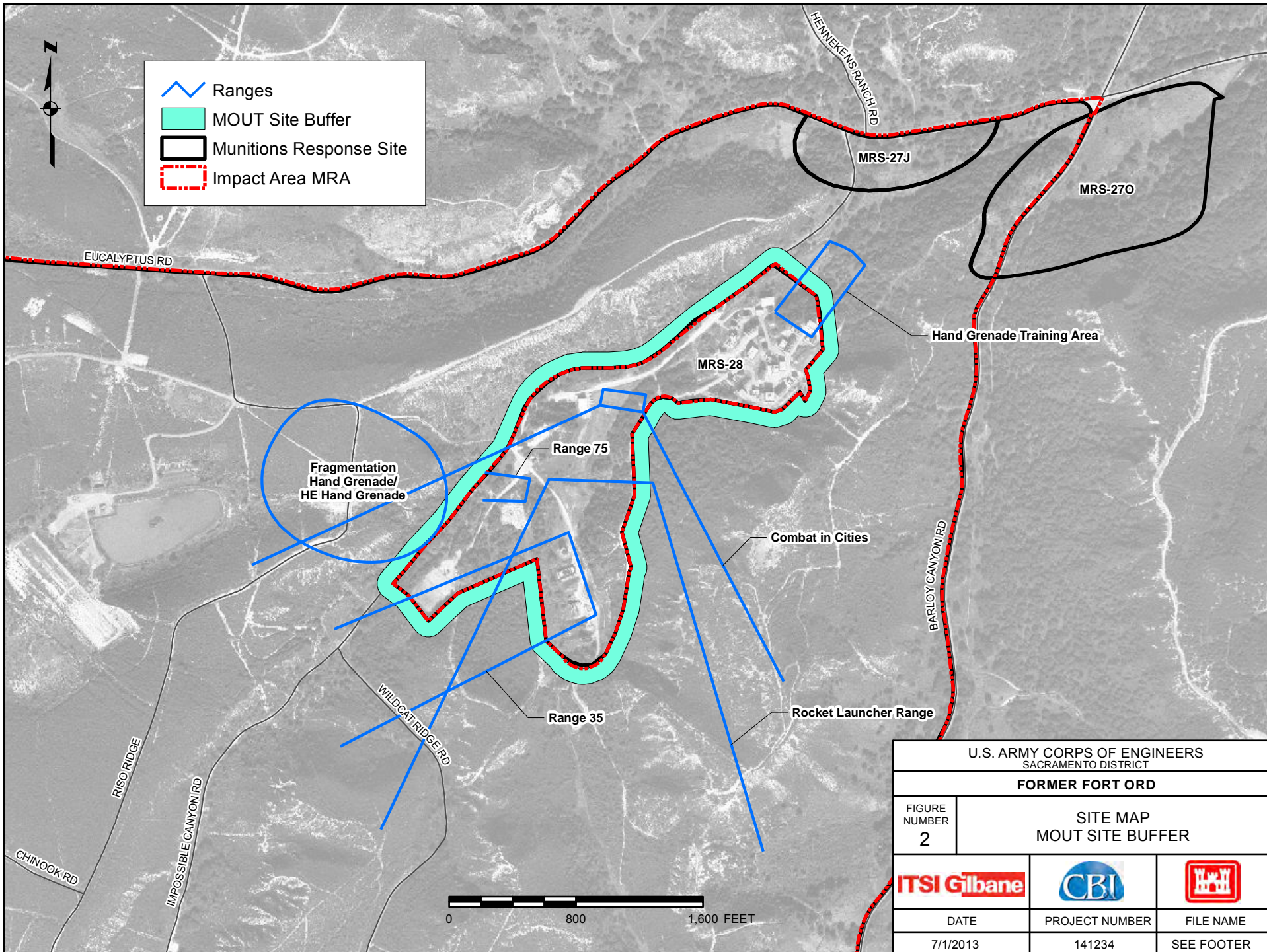
MEC denotes munitions and explosives of concern.

UXO denotes unexploded ordnance.

Figures



U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 1	MOUT SITE BUFFER LOCATION MAP	
DATE 11/20/2013	PROJECT NUMBER 141234	FILE NAME SEE FOOTER



	Ranges
	MOUT Site Buffer
	Munitions Response Site
	Impact Area MRA

U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 2	SITE MAP MOUT SITE BUFFER	
DATE 7/1/2013	PROJECT NUMBER 141234	FILE NAME SEE FOOTER

MOUT Site Buffer

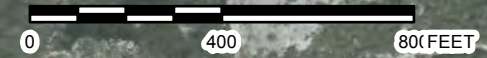
Previous MEC Found

- ▲ Fuze, grenade, hand, M204 series
- Grenade, hand, fragmentation, M67
- Grenade, hand, fragmentation, MK II
- Grenade, hand, practice, M21
- Grenade, hand, practice, M69
- Grenade, hand, smoke, M48
- Projectile, 40mm, high explosive, M381
- Projectile, 40mm, parachute, star, M662
- Projectile, 40mm, practice, M407A1
- ⊕ Projectile, 81mm, mortar, high explosive, M43 series
- Signal, illumination, ground, M125 series

EUCALYPTUS RD

RISO RIDGE

IMPOSSIBLE CANYON RD
WILDCAT RIDGE RD

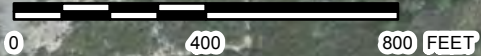


U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 3	MEC FOUND DURING PREVIOUS INVESTIGATIONS	
DATE 7/1/2013	PROJECT NUMBER 141234	FILE NAME SEE FOOTER

Source: Esri, DigitalGlobe, GeoEye, I-cubed, and the GIS User Community

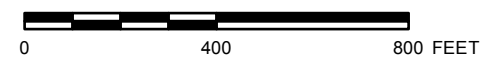
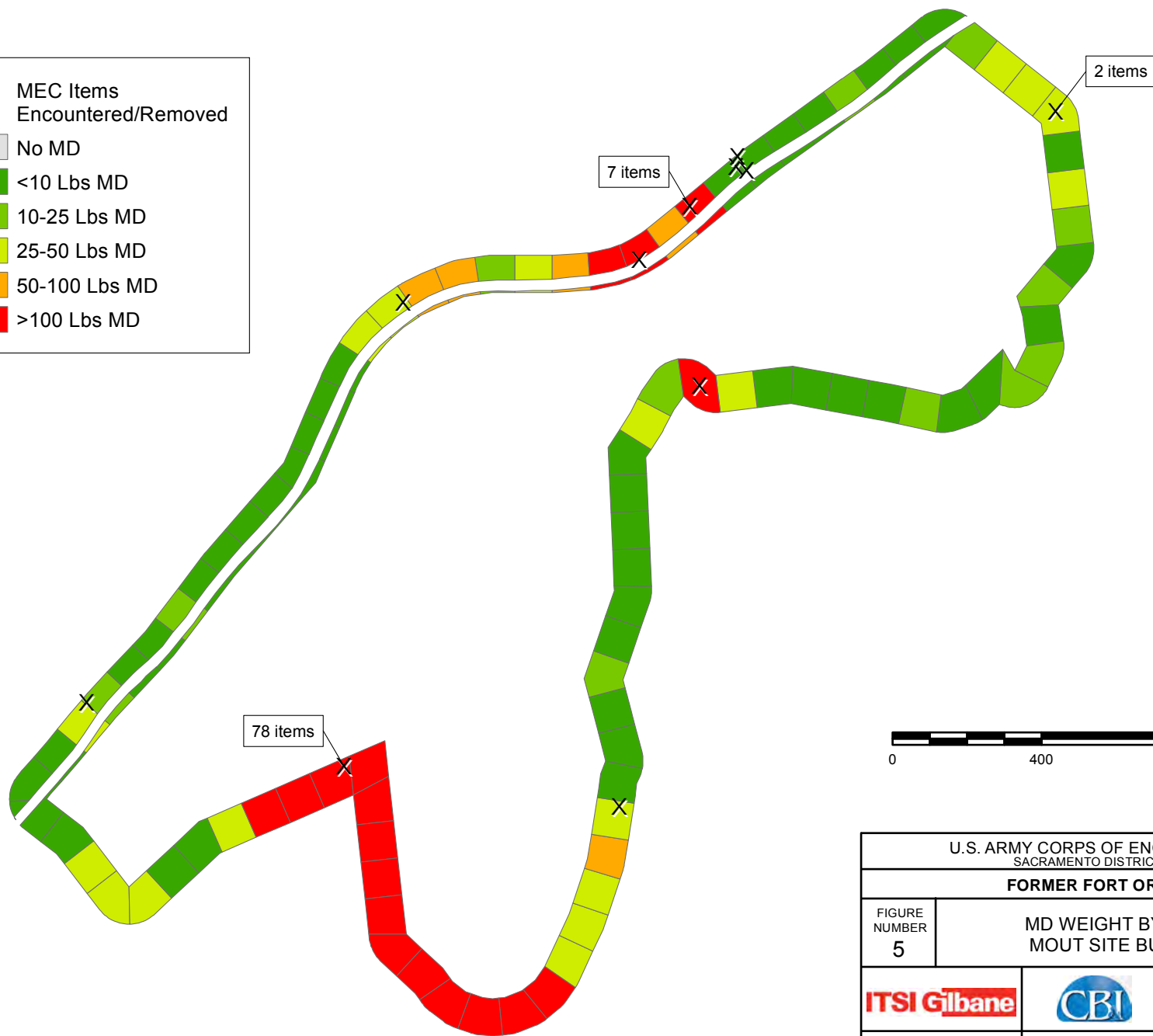
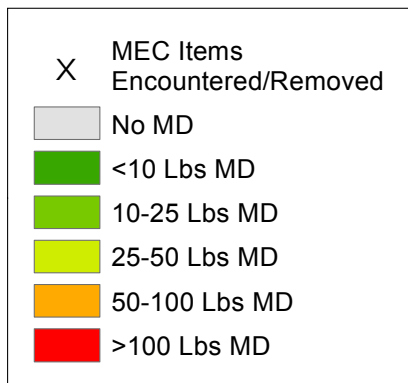


- Asphalt
- Area of Analog Surface and Subsurface Removal (Mag and Dig)

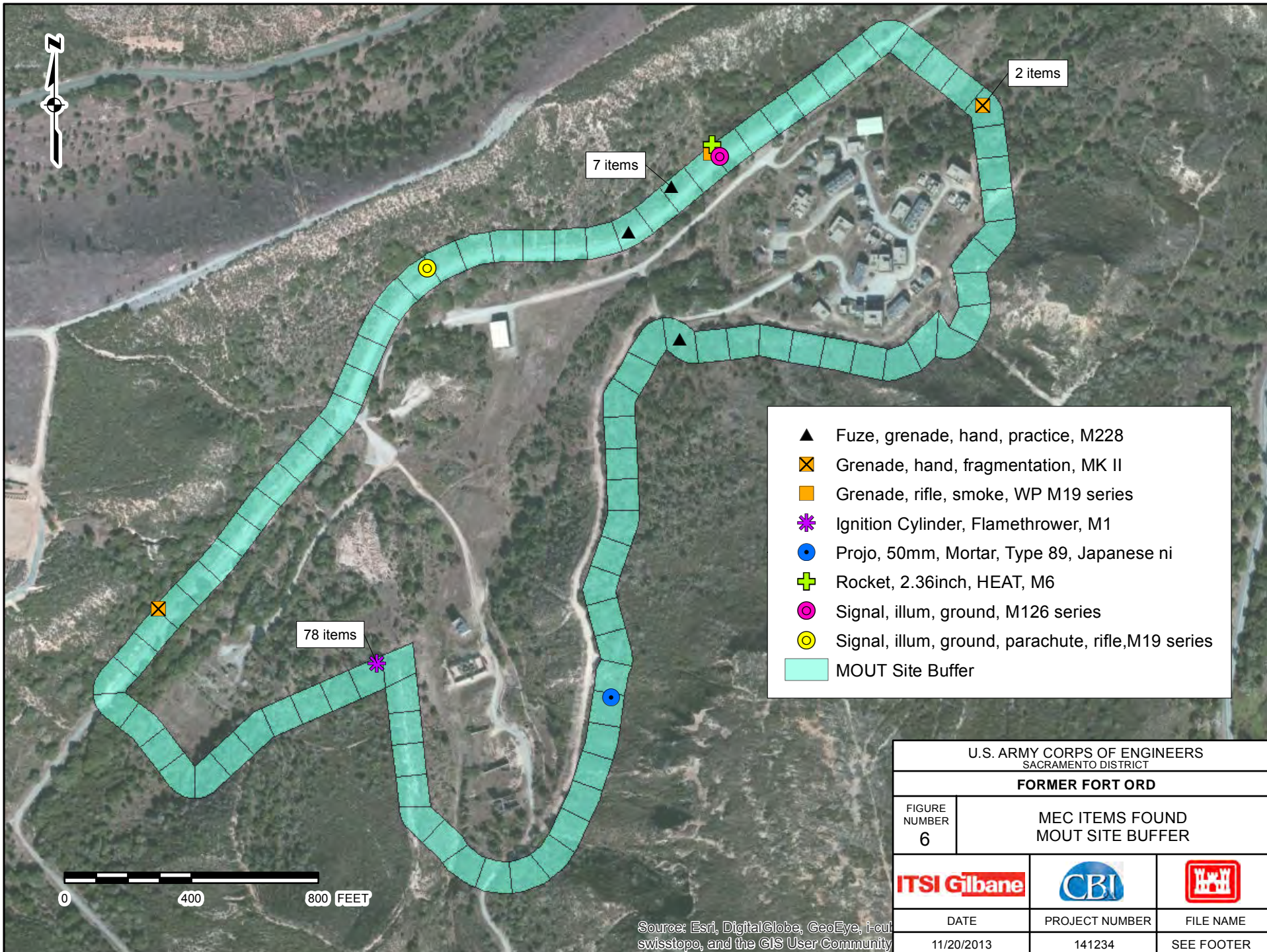


U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 4	OPERATIONS MOUT SITE BUFFER	
DATE 9/17/2013	PROJECT NUMBER 141234	FILE NAME SEE FOOTER

Source: Esri, DigitalGlobe, GeoEye, i-cub, swisstopo, and the GIS User Community



U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 5	MD WEIGHT BY GRID MOUT SITE BUFFER	
DATE 11/20/2013	PROJECT NUMBER 141234	FILE NAME SEE FOOTER



- ▲ Fuze, grenade, hand, practice, M228
- ⊠ Grenade, hand, fragmentation, MK II
- Grenade, rifle, smoke, WP M19 series
- ✱ Ignition Cylinder, Flamethrower, M1
- Projo, 50mm, Mortar, Type 89, Japanese ni
- ✚ Rocket, 2.36inch, HEAT, M6
- Signal, illum, ground, M126 series
- Signal, illum, ground, parachute, rifle, M19 series
- MOUT Site Buffer

U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 6	MEC ITEMS FOUND MOUT SITE BUFFER	
DATE 11/20/2013	PROJECT NUMBER 141234	FILE NAME SEE FOOTER

Source: Esri, DigitalGlobe, GeoEye, i-cub, swisstopo, and the GIS User Community

Appendix A

Task Order Statement of Objectives

Performance Work Statement

CESPK-PPMD

~~July 15, 2010~~

~~Revised July 23, 2010~~

Revised 12 August 2010

SUBJECT: Munitions and Explosives of Concern (MEC) Removal and Soil Remediation, Former Fort Ord, CA

Contractor: TBD

POC: TBD

Contract No.: W912DY-10-D-~~TBD~~, Task Order CM01

1. Installation: Former Fort Ord Military Reservation, Fort Ord, CA

2. Project Title: MEC Removal and Soil Remediation in the Impact Area at Former Fort Ord, Fort Ord, CA.

3. General Project Description: This Performance Work Statement (PWS) describes the work necessary to continue the regulatory-required munitions response and soil remedial actions at former Fort Ord, CA. The PWS includes project management, planning, munitions response, MEC investigation, field reconnaissance, engineering evaluations, geophysical survey, contaminated soil remediation, landfill closure, data management, prescribed burn support, installation support, community relations, and reporting. This PWS is primarily focused on response actions within the Impact Area and Site 39 soil remediation. Other MEC response actions (RI/FS, Proposed Plans and RODS, TCRA, Remedial Actions, etc.) outside the Impact Area would be eligible as logical follow-on work to this task order.

4. Project Background: The former Fort Ord is located near Monterey Bay in northwestern Monterey County, California. Since 1917, portions of former Fort Ord were used by cavalry, field artillery, and infantry units for maneuvers, target ranges, and other purposes. Military munitions were fired into, fired upon, and used on the facility in the form of artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, land mines, pyrotechnics, bombs, and demolition materials. Therefore, munitions and explosives of concern (MEC) are present within the former Fort Ord Impact Area.

Fort Ord environmental cleanup has been ongoing since the late 1980's. The Installation was close in 1991 and the cleanup program is now under the Base Realignment and Closure (BRAC) program. The former Fort Ord is a Superfund site with two components to the cleanup program; Hazardous and Toxic Waste (HTW) and MEC. Under the HTW side, the Impact Area is subject to the Record of Decision (ROD) for Basewide Remedial Investigation Sites (reference 8.3) and amended in 2009 (reference 8.4) which requires Site 39 contaminated soils to be excavated and transported to OU-2 landfill, Area E for disposal. When soil excavation is completed, the landfill will be capped as identified in reference 8.4. On the MEC side, the area is subject to the requirements of the ROD, Impact Area Munitions Response Area, Track 3 Munitions Response Site

Performance Work Statement

CESPK-PPMD

~~July 15, 2010~~
~~Revised July 23, 2010~~
Revised 12 August 2010

(reference 8.2). The Impact Area requires MEC remediation in accordance with the ROD (reference 8.2) before the property can be transferred.

4.1 Community Relations. The Army strongly encourages local community involvement as early as possible during environmental investigations and restoration actions at all Army sites. Involving the public is essential for receiving stakeholder input and maintaining community understanding and support for Army environmental cleanup actions. The Army is authorized and responsible under the Code of Federal Regulations to conduct community outreach activities as part of the environmental cleanup of the former Fort Ord. The proposed communication techniques and objectives use U.S. Environmental Protection Agency and California Department of Toxic Substances Control guidance for public involvement and are in accordance with the Code of Federal Regulations and Army community outreach requirements. The contractor shall assist with the preparation of materials for public presentations and provide support/personnel for munitions-related community events where appropriate.

4.2 Impact Area (FTO-014-R-01). This area is subject to the requirements of the ROD, Impact Area Munitions Response Area, Track 3 Munitions Response Site (reference 8.2) and all will accomplished in accordance with the Final Work Plan – RD/RA Track 3 Impact Area MRA MEC Removal (reference 8.1).

The ranges of this complex are located within the confines of the Impact Area in the southwest portion of Former Fort Ord (see attachment B). These ranges include the impact areas for approximately 27 small arms, mortar, rocket, and machine gun ranges as well as demolitions and incendiary munitions training areas used from the 1930s until the base was closed in 1994. Track 3 RI/FS Report (reference 8.20) shows the range configurations and their types/timeframes of use. The ranges contain a concentration of similar expended munitions and unexploded ordnance (UXO). Vegetation on this complex is protected under the Installation-wide Multispecies Habitat Management Plan (HMP - reference 8.6). There are approximately 3,332 acres that still require MEC remediation to meet the ROD. Of the 3,332 acres, there are 1,775 acres that require vegetation removal via prescribed burning. Approximately 350 acres will require subsurface MEC removal; actual quantity will be based on input from the future land owner (Bureau of Land Management) and the requirements in the Final Work Plan – RD/RA Track 3 Impact Area MRA MEC Removal (reference 8.1). Up to 85 additional acres may require sifting for sensitively fuzed munitions. Sifting will be identified and approved via the Technical Memorandum process as noted in reference 8.1.

The acreage to be cleared cannot be contiguous and therefore must be burned in a manner as to present varying stages of vegetation growth over time. Limitations regarding cutting and burning activities are contained in the HMP (reference 8.7). In Fall 2009, the installation submitted a Biological Assessment for consultation with the US Fish and Wildlife Service (USFWS) which

Performance Work Statement

CESPK-PPMD

~~July 15, 2010~~

~~Revised July 23, 2010~~

Revised 12 August 2010

included a proposal to cut 750 acres rather than burning (see reference 8.34). A response from USFWS is expected soon. Attachment B and Table 1 present the most recent scenario to address the remaining portions of the Impact Area that provides a balance between cutting and burning vegetation to expose MEC.

The area is currently retained by the Army, but not in use and will be transferred to BLM and remain undeveloped as habitat reserve. Chapter 3 of the HMP and subsequent Biological Assessments describe mitigation measures that must be implemented before, during, and after MEC investigation and remediation. In addition, there are 3 biological opinions (reference 8.9) that contain terms and conditions and reasonable and prudent measures that need to be implemented during MEC activities to minimize and reduce impacts to listed species. Future management of the habitat reserve will fall under the jurisdiction of the BLM.

It is the responsibility of the Contractor to remove vegetation in the Impact Area to facilitate MEC removal. In general, vegetation removal is accomplished via prescribed burning by Presidio of Monterey Fire Department (POMFD). POMFD is the Incident Commander during prescribed burning operations. The Contractor will provide aerial and ground units for POMFD, Burn Boss, Aerial Operations Manager, water tender support, and fuel breaks. Once the prescribed burn is completed, the Contractor will cut any remaining vegetation, conduct surface MEC removal, geophysical mapping, and limited subsurface MEC removal. Table 1 below provides a tentative schedule for each burn unit, subject to change based on burn parameters dictated by POMFD. Several Units will be cut in lieu of burning subject to concurrence by USFWS. Vegetation cutting in lieu of burning is due to extreme fuel loading conditions and proximity to the community.

Table 1 – Tentative Burn/Cut Schedule

Year (burn season)	Burn Unit (gross acreage)	Burn Unit (burn acreage)	Burn Unit Fuel Break (cut acreage)	Units for Veg. Cut Only (cut acreage)
2011	11 (273 acres) 12 (208 acres)	11 (201 acres) 12 (154 acres)	11 (72 acres) 12 (54 acres)	3 (147 acres) 4 (192 acres) 9 (75 acres) 5 - partial (34 acres)
2012	23 (367 acres) 31 (103 acres)	23 (277 acres) 31 (65 acres)	23 (90 acres) 31 (38 acres)	2 (192 acres)
2013	10 (324 acres) 25 (97 acres)	10 (240 acres) 25 (44 acres)	10 (84 acres) 25 (53 acres)	1 (157 acres) 6 (70 acres)

Performance Work Statement

CESPK-PPMD

July 15, 2010
~~Revised July 23, 2010~~
 Revised 12 August 2010

2014	7 (158 acres)	7 (107 acres)	7 (51 acres)	28 (102 acres)
2015	5 – partial (124 acres) 33 (121 acres)	5 33 (72 acres)	5 (acres) 33 (49 acres)	None

4.3 Impact Area MRA Investigation (Burn Units 13, 17, and 20). Burn Units 13, 17, and 20 include the Eucalyptus Fire Area. Surface removal of the burned area was completed in 2003-2004 (reference 8.14) and revealed practice and pyrotechnic munitions and limited evidence of high explosive munitions. Review all previous work and historical documents to determine if activities other than maneuver training took place in these units. Develop an investigation to delineate areas where only limited munitions training occurred to confirm no remedial action is required. A technical memorandum documenting the evaluation with recommended future actions is required.

4.4 Ranges 43 – 48 (southern portion, 273 acres, attachment C). Evaluate completed work to date to confirm no additional remediation is required. BLM will provide future comments on possible road and trail improvements and fuel breaks required in order to manage the property in this area. A technical memorandum documenting the evaluation with recommended future actions is required to meet the requirements of the ROD (reference 8.2).

4.5 Watkins Gate Burn Area (1,051 acres, attachment C). Two portions of Watkins Gate Burn Area did not burn (approximately 72 acres) and are required to be addressed in accordance with the ROD (reference 8.2). Surface removal of the burned area (979 acres) has been completed, with limited MEC items being found (reference 8.16). Limited geophysical investigation was also conducted in the burned area (reference 8.17). These areas shall be evaluated against historical information. Develop a technical memorandum describing the evaluation and actions needed to meet the requirements of the ROD (reference 8.2).

4.6 BLM HQ 100 foot Buffer Sub-Surface MEC (1.6 acres). BLM HQ boundary has changed and sub-surface MEC removal is required within the 100' buffer along the boundary of the Impact Area and development parcels. All work will be done in accordance with RD/RA Work Plan (reference 8.1). Vegetation will be cut, not burned.

4.7 Site 39 Inland Ranges Soil Remediation (FTO-039). Since 1917, portions of the former Fort Ord were used by cavalry, field artillery, and infantry units for maneuvers, target ranges, and other purposes. Military munitions used on the facility included artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, land mines, bombs, demolition materials, and small arms. The Comprehensive Basewide Range Assessment Report (reference 8.5) provides

Appendix B

Field Work Variances

FIELD WORK VARIANCE

Project Name/Number	Fort Ord / 07202.2001	WAD	WAD 03
Applicable Documents	Final, Site-Specific Work Plan, Munitions and Explosives of Concern Remedial Action, Non-Burn Areas, Former Fort Ord, California (Non-Burn SSWP) AR# OE-0685D	Date	January 23, 2012

Problem Description:

Section 2.5.6.2 of the Non-Burn SSWP specifies that the subsurface MEC removal in the buffer area around the MOUT "will be conducted following completion of a DGM survey" but closer examination of the site conditions resulted in a determination that DGM based subsurface removal is technically infeasible for the following reason: The MOUT Site Buffer (Figure 1) follows significant slopes within the buffer area that preclude effective DGM data collection, either with a towed array or with hand towed carts. Additionally, oak trees greater than four inches in diameter and some select Toro Manzanita plants will be pruned up to six feet and left in place. This will also preclude effective DGM data collection within most of the MOUT Site Buffer.

Recommended solution:

The following changes and clarifications apply only to work to be performed within the MOUT Site Buffer, and do not change the overall basewide approach.

Non-Burn SSWP Changes
Subsurface MEC Removal Areas (Section 2.5.6.2 of Non-Burn SSWP)

Conduct analog (mag & dig) subsurface MEC removal in the approximately 22 acre MOUT buffer instead of DGM-based. Modify text of Section 2.5.6.2 of Non-Burn SSWP as follows to address this change:

2.5.6.2 Buffer Area around MOUT

Analog (mag & dig) surface and subsurface MEC removal will be conducted simultaneously along a 100-foot buffer area between the habitat and development border around the entire MOUT Site (Figure 2-12). The surface and subsurface area totals approximately 22 acres. No DGM survey will be conducted within the buffer area around the MOUT Site.

Project Personnel, Organization, Communication and Reporting (Section 2.6 of Non-Burn SSWP)

The project team will include the following managerial and technical positions:

- PM: Steve Crane
- Deputy PM: Erin Caruso
- Contractor QC System Manager: Tom Ghigliotto
- Task Manager: Kevin Siemann
- Site Safety and Health Officer: Val Valdez
- Senior UXO Supervisor: Brad Olson
- UXOQC Specialist: Bruce McClain
- UXO Safety Officer: Val Valdez

-
- Project Biologist: Jami Davis

Clarifications

Field Work Elements to be Performed

Vegetation Clearance (Section 2.5.2 of Non-Burn SSWP)

Vegetation clearance within the MOUT Site Buffer will be conducted using manual methods to cut grasslands, oak woodland, central maritime chaparral, and wetlands. Live oak trees greater than four inches in diameter and some select Toro Manzanita plants will be pruned up to six feet and left in place.

The UXO Team will first conduct a survey to determine that it is safe to enter areas that require vegetation clearance. UXO-Qualified personnel will then provide escort during vegetation clearance.

Grid and Border Survey (Section 2.5.3 of Non-Burn SSWP)

No change to Non-Burn SSWP.

Technology-Aided Surface MEC Removal (Section 2.5.4 of Non-Burn SSWP)

In order to avoid visiting grids within the MOUT Site Buffer multiple times, it is recommended that surface and subsurface MEC removal be conducted simultaneously. Schonstedt GA-52C/x magnetometer and the White's DFX 300 should be used in conjunction as the primary detection tools for the combined surface and subsurface MEC removal. The Schonstedt can detect ferrous material and the White's can detect all metals. It is likely that MPPEH/MD items within the MOUT Site Buffer include both ferrous and non-ferrous metals.

Subsurface MEC Removal Areas (Section 2.5.6 of Non-Burn SSWP)

See above regarding Technology-Aided Surface MEC Removal.

Quality Control Seeding Program (Section 11.1.5 of Non-Burn SSWP)

The Non-Burn SSWP currently requires Quality Control (QC) seeding to be performed at a **minimum** rate of one QC seed per four acres of MEC removal. For the MOUT Site Buffer MEC removal, it is recommended that subsurface QC seeds be placed at a rate of one QC seed per acre, approximately 22 total QC seeds. This rate of QC seeding is consistent with WERS Data Item Description 004.01 and is appropriate for the analog-based combined surface and subsurface MEC removal being performed at the MOUT Site Buffer.

Impact on present and completed work:

Conducting analog-based MEC removal instead of DGM-based MEC removal, and conduct of surface and subsurface MEC removal simultaneously will have a positive effect on project schedule. Implementation of the solution recommended above is expected to reduce project completion time by approximately 32 field days.

Recommended solution/disposition:

Implement as recommended.

Clarification Minor Change Major Change

Affects Budget Yes No

Affects Schedule Yes No

Signature [Signature] Date 1/23/13
Task Manager

Signature [Signature] Date 1/24/13
SUXOS

Signature [Signature] Date 1/24/13
CQCSM

Signature [Signature] Date 1/24/13
UXOQCS

Signature Steve Crane Digitally signed by Steve Crane
DN: cn=Steve Crane, o=USACE,
ou=USACE, email=Steve.Crane@usace.army.mil Date _____
Project Manager

Signature Erin Caruso Digitally signed by Erin Caruso
DN: cn=Erin Caruso, o=USACE,
ou=USACE, email=Erin.Caruso@usace.army.mil Date _____
Deputy Project Manager

USACE Approval: If Major Change:

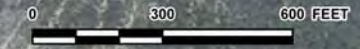
Signature [Signature] Date 1/24/13
OE Safety Specialist

Signature [Signature] Date 1/24/13
USACE COR
or TM

Signature _____ Date _____
USACE Project Geophysicist



- Legend**
- MOUT 100-ft Buffer
 - Previous MEC Found**
 - Fuze, grenade, hand, M204 series
 - Grenade, hand, fragmentation, M67
 - Grenade, hand, fragmentation, MK II
 - Grenade, hand, practice, M21
 - Grenade, hand, practice, M69
 - Grenade, hand, smoke, M48
 - Projectile, 40mm, high explosive, M381
 - Projectile, 40mm, parachute, star, M662
 - Projectile, 40mm, practice, M407A1
 - Projectile, 81mm, mortar, high explosive, M43 series
 - Signal, illumination, ground, M125 series



U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER	PREVIOUS MEC FOUND	
2	MOUT 100-FT. BUFFER	
DATE	PROJECT NUMBER	FILE NAME
6/6/2012	141234	SEE FOOTER

Appendix C

Daily QC, Safety, SUXOS Forms



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Monday, February 04, 2013
REPORT NO: 0402

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 38 F MAX. 53 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the removal of the pavilion in Unit 4. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
WERS-010	02/01/13	02/04/13	02/05/13

FIELD ACTIVITY DAILY LOG

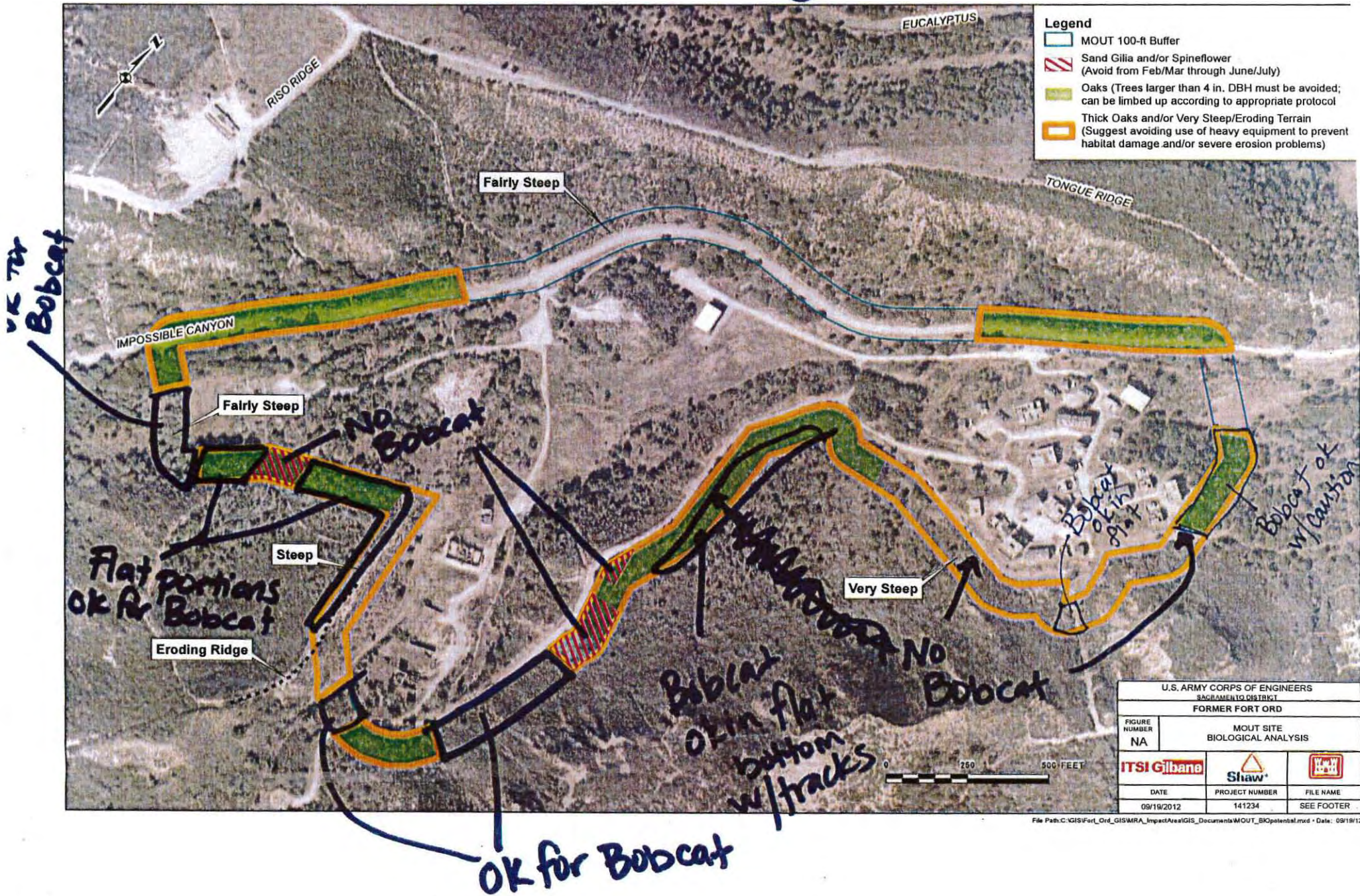
K1



Daily Log	Date:	2	4	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- QC dailies	
0800- Go to HA 37. Crew is all set up and about to start working. I took photos of the soil they processed on Thursday at the end of the day. They put two excavator buckets of soil through the Trommel. What I saw appeared to be clumped soil or dirt clods on the greater than 2" side and soil on the less than 2" side. I needed to depart the site since they are about to start.	
0845- Go to AFEES to get fuel.	
0900- Return to office. Review CAR and CAP for missed QA seeds.	
1000-Brad requested I send out a preparatory notification for the MEC removal at the MOUT site buffer. Will start working on that as well as writing the preparatory and updating the QC Inspection log.	
1100- Set out on site visits. Going to observe HA 37 from Chinook road. Collected some zoom in photos. Crew is working & processing soil but stopped around 1120 and it appears the UXO techs are checking the stockpile. Went over to the MOUT site. Crew is working the south side of the buffer near the tire house. I asked Chris about mowing with the bobcat and he said it was approved by Jami which I verified. Heard they are stopping work at HA 37 so I headed back there to see the site. So far they process about 40 yards of soil. The only thing coming off the >2" side is clumped soil. The <2" soil is very clean and out of both only one very small (1" round and 1/8" thick) piece of MD was found	
1230- Lunch	
**1300- Internal meeting to discuss and finalize CAR and CAP. Brad, Bruce and I will work on completing those and sending to Steve, Kevin and Erin for review.	
1430- Begin incorporating comments on the CAR and CAP.	
1545- Head out to HA 37. Crew is finishing for the day and screened approximately 140 cubic yards.	
1630- Return to office. Continue to incorporate comments, just waiting for Erin and they can be issued.	
17120- Depart site.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Fog/PC/Cloudy	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 2/4/13

Bobcat w/tracks only



FIELD ACTIVITY DAILY LOG



K1

Daily Log	Date:	2	9	13
	No.			
	Sheet	2 of		2

PROJECT NAME: FORT ORD, CA Work Order # 01

FIELD ACTIVITY SUBJECT: 0-MD - 0 MPPEH 0 - Seeds

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS.

1430 - Break

1450 - Commenced Sifting (20)

1505 - Stopped Sifting

1517 - Commenced Sifting (20) put seed in bucket w/soil

1539 - Stopped Sifting - Found above seed successfully.

1543 - Commenced Sifting (20)

1556 - Stopped Sifting

1605 - Loader pushed "clean" soil into "clean" pile (185 total buckets)

1620 - Cleaned + put equipment away. Fueled Tractor (138 yards)

1630 - Completed operations for the day.

VISITORS ON SITE: CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER

Clinton Huckins SPECIAL ORDERS AND IMPORTANT DECISIONS:

* See Notes

WEATHER CONDITIONS: IMPORTANT TELEPHONE CALLS:

** See Notes

SHAW PERSONNEL ON SITE:

SIGNATURE: Tom Ghigliotto/CQCSM DATE: 4 Feb 13

Nate Willis

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	2	4	13
	No.			
	Sheet	1 Of 1		

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: 0-MD 0-MPPEH 0-Seeds	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS, Drum 7.5, Feeder 7.5	
0645 - Morning Safety Meeting	
0730 - Arrived at HA-37 Tested Equipment Successfully w/seeds S37-08+ S37-05 + S19-Ø, JSA	
0825 - Commenced sifting operations AFTER notifying Safety 2 to close HA-37	
0845 - Stopped operation after 7 Buckets To evaluate process. checked (5 buckets) <2" pile + >2" pile w/white's No MD/SEEDS found. Determined intervals for sweeping to be between 15 + 20 buckets.	
0855 - Commenced sifting operations (15)	
0915 - Stopped Sifting operations to evaluate processes	
0930 - Commenced Sifting Operations (15)	
1000 - Break to 10:15	
1020 - Commenced sifting operations (15)	
1038 - Stopped Sifting to sweep.	
1055 - Commenced Sifting (15)	
1115 - Stopped Sifting (Pushed dirt w/loader after sweep)	
1200 - Lunch	
1253 - Commenced Sifting Operations (20)	
1315 - Stopped Sifting	
1335 - Commenced Sifting (20)	
1350 - Stopped Sifting	
1405 - Commenced Sifting (20)	
1417 - Stopped Sifting	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghiglierotto/CQCSM	DATE: 4 Feb 13
Nate Willis	



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	2	4	2013
	No.			
	Sheet	1	Of	1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01
FIELD ACTIVITY SUBJECT: H&S		
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC
0630 Safety and SUXOS Brief		
0700 Worked on admin.		
0830 Moved to the MRA - Check on UXO teams.		
0945 Completed surveillance on UXO team 1.		
1050 Moved to the MOUT Site - Check on brush cutting ops.		
1200 Moved to HA-37 - Check on sift ops.		
1240 Moved to the office - Lunch/Admin.		
1300 Conference call with PM's.		
1340 Revised CAP.		
1420 Moved to the MRA - Check on UXO teams.		
1530 Completed surveillance on UXO team 3.		
1610 Moved to the office - Admin.		
1645 Teams returned from the MRA.		
1710 Work complete for the day.		
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:
WEATHER CONDITIONS: Sunny H 66		IMPORTANT TELEPHONE CALLS:
PERSONNEL ON SITE: See tailgate		
SIGNATURE: <i>Bruce McC</i>		DATE: 2/4/2013



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Tuesday, February 05, 2013
REPORT NO: 0403

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 48 F MAX. 53 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Tuesday, February 05, 2013
REPORT NO: 0403

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

 /Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	2	5	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- QC dailies	
0800- Send latest CAR and CAP to Erin for comments.	
**0830- HA 37 crew announced on the the radio that they found a seed. It was the Rifle Grenade and it was on the >2" side.	
Continued QC dailies.	
1000- Go to HA 37 during site break with Chuck. Crew has processed about 57 buckets or about 40 cubic yards and found	
only small items of MD.	
1100- Return to office. No more comments on CAR or CAP so I will start gathering signatures so I can issue this ASAP.	
1200- Lunch	
1230- Getting last signatures and scanning as a document.	
1300- Send out CAR and CAP.	
1330- Set out on site visits. Went to Chinook to watch HA 37 from outside the exclusion zone. Screening appears to be going	
very well. I watched several buckets go into the hopper before they shut down to screen the two piles. Steve Carpenter is on	
site now from the USACE office in Alberaquere to observe operations. I went to observe to loading of the splash walls but	
once I got there they just finished loading the dump truck and were coming in to unload tomorrow.	
1600- HA 37 is shut down so we went into the site. Crew said they made 305 buckets today and found about 1 pound of MD.	
Steve Carpenter seemed pleased with operations.	
1645- Return to office to finish paperwork.	
1715- Depart site.	
<i>Not used</i>	
VISITORS ON SITE:	
Clinton Huckins	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Steve Carpenter	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	
Cloudy/PC	IMPORTANT TELEPHONE CALLS:
<i>48-53</i>	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: <i>2/5/13</i>
<i>Tom Ghigliotto</i>	

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	2	5	13
	No.			
	Sheet	20		2

PROJECT NAME: FORT ORD, CA Work Order # 01

FIELD ACTIVITY SUBJECT: *Sifting Stockpile @ HA37*

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS.

1320 - Start Sifting (25)
 1338 - Stopped Sifting
 1348 - Start Sifting (25)
 1409 - Stop Sifting
 1419 - Start Sifting - Corps Rep Steve Carpenter on site to observe (10 Buckets)
 1428 - Stopped Sifting
 1435 - Break
 1459 - Start Sifting (25)
 1514 - Stop Sifting
 1533 - Start Sifting (25) 305 Buckets
 1550 - Stop Sifting

MD-116
 MPPEH - 0 lbs.
 Seed - QC M19-03

VISITORS ON SITE: CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
 Clinton Huckins SPECIAL ORDERS AND IMPORTANT DECISIONS:
 Steve Carpenter (USUCC Rep) * See Notes

WEATHER CONDITIONS: IMPORTANT TELEPHONE CALLS:
 Cloudy 58° ** See Notes

SHAW PERSONNEL ON SITE:
 SIGNATURE: Tom Ghigliotto/CQCSM DATE:

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	5 Feb 13
	No.	
	Sheet	1 of 2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <u>Sifting Stockpile @ HA 37</u>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS.	
0645 - Morning Safety Meeting	
0715 - Fueled mini ex for Tm 3 + Tm 2	
0745 - JSA @ HA 37	
0755 - Start Sifting (Notified Safety 2 to close access to HA-37 (20 Buckets)	
0808 - Stopped Sifting	
0826 - Start Sifting Tested Equipment w/seeds 537-08/537-05/519-0 (25)	
0841 - Stopped Sifting (Found QC Seed M19-03)	
0900 - Start Sifting (25)	
0921 - Stopped Sifting	
0936 - Start Sifting (25)	
0949 - Stop Sifting	
1010 - Break	
1030 - Start Sifting (25)	
1045 - Stop Sifting	
1055	1055 - Start Sifting (25)
1109 - Stop Sifting	
1109	1123 - Start Sifting (25)
1138 - Stopped Sifting	
1150 - Pushed Pile w/loader	
1205 - Lunch	
1252 - Start Sifting (25)	
1305 - Stop Sifting	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Steve Carpenter (USACE Rep)	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Cloudy 58°	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQC3M	DATE:
Note with	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Wednesday, February 06, 2013
REPORT NO: 0404

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 39 F MAX. 56 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Wednesday, February 06, 2013
REPORT NO: 0404

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG



Daily Log	Date:	2	6	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- QC dailies	
0800- Review Unit 4 building abatement and demolition report. I need to go through some previous dailies to find dates and other information. Also need to go to Hazwaste to see if I can get better copies of the manifests from Richard Schmitt since ours did not copy well and can hardly be read.	
1000- Set out on site vests. Will observe HA 37 from Chinook, check on the splash wall crew, the MOUT site and fuel breaks. HA 37 appears to be coming along well. While observing from Chinook I didn't see any shut downs or problems but it is hard to tell. Went over to Orion to observe Steve and Dusty loading concrete for recycling. Team 3 is working in that area too. Went to MOUT next and crews are working their way around the buffer. They are using the bobcat which is a replacement because they were having problems with the last one.	
1230- Lunch	
1300- Read through the Unit 4 comments and I have no further comments.	
1400- Return to field. On Chinook I noticed the stockpile is being screened and the crew is still moving along well. Met Steve and Dusty at the iron and collected photos of the last remaining concrete to be taken to Assured aggregates.	
1600- Return to office to finish paperwork.	
1700- Depart site.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
Clinton Huckins	
Steve Carpenter	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Fog/Clear / P.C	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 2/6/13

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	6	Feb	13
	No.			
	Sheet	1 Of 2		

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Sifting Stockpile @ HA-37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	
<i>0645 - Morning Safety Meeting</i>	
<i>0715 - Arrived @ HA-37 - Tested Equipment w/seeds 37-08/37-05/S19-0</i>	
<i>0725 - JSA</i>	
<i>0735 - Dust meters put out by Safety 1</i>	
<i>0741 - Commenced sifting ops (25)</i>	
<i>0800 - Stop Sifting</i>	
<i>0828 - Start Sifting (25)</i>	
<i>0840 - Stop Sifting</i>	
<i>0903 - Start Sifting (25)</i>	
<i>0917 - Stop Sifting</i>	
<i>0937 - Start Sifting (25)</i>	
<i>0950 - Stop Sifting</i>	
<i>1010 - Break</i>	
<i>1030 - Grease Maintenance on Sifter (8 hrs)</i>	
<i>1053 - Start Sifting (25)</i>	
<i>1107 - Stop Sifting</i>	
<i>1121 - Start Sifting (25)</i>	
<i>1134 - Stop Sifting</i>	
<i>1150 - Start Sifting (15)</i>	
<i>1201 - Stop Sifting</i>	
<i>1210 - Lunch</i>	
<i>1250 - Used front-end loader to arrange soil for 2ND half of day</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
<i>Clinton Huckins</i>	SPECIAL ORDERS AND IMPORTANT DECISIONS:
<i>Steve Carpenter</i>	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Sunny 57°</i>	** See Notes
SHAW PERSONNEL ON SITE: <i>Keith Jordan, NATE WELLS, Tim Erickson, Kirk Busse</i>	
SIGNATURE: <i>Tom Ghigliotto/CQCSM</i>	DATE:

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	6	Feb	13
	No.			
	Sheet	2 of		2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Sifting Stockpile @ HA-37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	
<i>1308 - Start Sifting (25)</i>	
<i>1320 - Stop Sifting</i>	
<i>1336 - Start Sifting (25)</i>	
<i>1349 - Stop Sifting</i>	
<i>1406 - Start Sifting (25)</i>	
<i>1419 - Stop Sift</i>	
<i>1450 - Break</i>	
<i>1503 - Start Sift (25)</i>	
<i>1522 - Stop Sift</i>	
<i>1538 - Start Sift (25) (290 Buckets)</i>	
<i>1551 - Stop Sift</i>	
<i>1605 - Close down procedure, refueling Equipment</i>	
<i>1617 - Push soil into pile w/loader</i>	
<i>1630 - Completed Operations</i>	
<i>1900 - End of Day</i>	
<i>MD - 1 lbs</i>	
<i>MPEH - 0 lbs</i>	
<i>Seeds - 0</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
<i>Clinton Huckins</i>	SPECIAL ORDERS AND IMPORTANT DECISIONS:
<i>Steve Carpenter</i>	<i>* See Notes</i>
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Sunny 61°</i>	<i>** See Notes</i>
SHAW PERSONNEL ON SITE:	
SIGNATURE: <i>Tom Ghigliotto/CQCSM</i>	DATE:
<i>Tom Ghigliotto</i>	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Thursday, February 07, 2013
REPORT NO: 0405

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 40 F MAX. 56 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal and MEC investigation in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37.

Test or control activities:

Preparatory meeting conducted for MEC investigation in the MOUT site 100' buffer. Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

406

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG



Daily Log	Date:	7 Feb 13
	No.	
	Sheet	1 Of 2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Sifting Operations @ HA-37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS.	
<i>0645 - Morning Safety Meeting</i>	
<i>0700 - Fueled Tim 3 mini ex. Mechanic Serviced long-reach excavator</i>	
<i>0730 - JSA</i>	
<i>0800 - Commenced Sifting Operations (25 Buckets)</i>	
<i>0821 - Stop Sift</i>	
<i>0842 - Start Sift (25) Successfully tested sifter w/S37-08/S37-05/S19-0</i>	
<i>0858 - Stop Sift</i>	
<i>0915 - Stopped Operations for Corps Rep to pick up Steve Carpenter</i>	
<i>0937 - Start Sift (25)</i>	
<i>0951 - Stop Sift</i>	
<i>1010 - Break</i>	
<i>1030 - Start Sift (25)</i>	
<i>1043 - Stop Sift</i>	
<i>1058 - Start Sift (25)</i>	
<i>1113 - Stop Sift</i>	
<i>1131 - Start Sift (25)</i>	
<i>1145 - Stop Sift</i>	
<i>1205 - Lunch</i>	
<i>1240 - Pushed pile w/Loader</i>	
<i>1301 - Start Sift (25)</i>	
<i>1317 - Stop Sift</i>	
<i>1337 - Start Sift (25)</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
<i>Steve Carpenter</i>	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Cloudy, 56°</i>	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: <i>Tom Ghigliotto/CQCSM</i>	DATE:
<i>Nate Willis</i>	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Sunday, February 10, 2013
REPORT NO: 0406

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 37 F MAX. 55 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal and MEC investigation in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Sunday, February 10, 2013
REPORT NO: 0406

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

/Tom Ghigliotto

Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	2	10	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0930- Arrive on site. Sign in for safety sheet.	
1000- QC Dailies	
1100- Set out on site visits. Head to MOUT site and HA 34 to check rain gauge. Checked on HA 37 from Chinook and crew was processing soil. We took Riso around to Impossible Canyon to check on the MOUT . Brush crew is getting close to finishing except for chipping. Staking crew is moving along well too. Went up the back way to HA 34. Rain gauge had 0.25" and was emptied. Chuck and I checked the site and it looked good. Some new sprouts have grown but would like to see more. Check dams still had some water in them but were functioning.	
1330- Lunch and mid-day break.	
1500- Return to site for more QC dailies	
1600- Depart site.	
<div style="font-size: 2em; color: blue; opacity: 0.5;">Not Used</div>	
VISITORS ON SITE: CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS: IMPORTANT TELEPHONE CALLS:	
Clear 37-55	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 2/10/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	2	10	2013
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0800 Moved to the MOUT site - Check on staking and brush cutting.			
1145 Moved to the MRA - Check on UXO teams.			
1450 Moved to the MOUT site - Check on grid stake ops.			
1600 Moved to HA-34 - Check on sift ops.			
1630 Moved to the office - Admin.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Sunny H 59		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce M. C.</i>		DATE: 2/10/2013	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Monday, February 11, 2013
REPORT NO: 0407

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 36 F MAX. 59 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal and MEC investigation in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

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Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Monday, February 11, 2013
REPORT NO: 0407

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	2	11	13
	No.			
	Sheet	1 Of 1		

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Discuss working next Monday with the DGM crew so we can work at HA 38 and not interfere with the HA 37 crew since they will be off. Talked with Chuck, Val and Brad and as long as USACE is OK with it.	
0730- Work with Val on getting video from the camera and onto a hard drive so we can delete the ones on the camera and continue to use it.	
0800- QC dailies.	
1000- PO adjustment and hours forecast.	
1030- QC dailies.	
1130- Set out to visit HA 37. Start by watching from Chinook and Riso and collecting photos. Once we were cleared to enter the site during their lunch shutdown Chuck and I went in. Crew has processed 175 buckets so far today and found no MMPEH but did find about a bucket of MD. Tim is clearing the >2" material and adding to the main stockpile before lunch. The UXO team found a seed today which was observed coming off the >2" side. It was the 2.36 inert seed.	
1300- Return to office. Start going through QC audit from last year in preparation for the upcoming audit.	
1430- Head to MOUT site with Chuck N to QC grid staking. We brought the Leica and a map to check various locations around the MOUT. Every point we check was spot on and we found no issues during our check. The brush crew is chipping and has a two man crew that is doing in clean up in grids. Spoke with SUXOS and we'll do a check tomorrow to see if we are accepting the grids and are prepared for a Final Inspection.	
1600- Back at office. HA 37 scheduling and planning with Chuck C and Steve.	
1630- Update QC seeding table, finish paperwork and email management.	
1715- Depart site.	
NOT USED	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
36-59 Clear	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 2/11/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	2	11	2013
	No.			
	Sheet	1	Of	1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Moved to HA-37 - Check the stock pile.			
0800 Moved to the MOUT site - Check on staking and brush cutting - Place QC seeds.			
1030 QC seed ops complete.			
1035 Moved to the MRA - Check on UXO teams.			
1145 Moved to the office - Lunch/Admin.			
1245 Moved to the MRA - Check on UXO teams.			
1450 Moved to the MOUT site - Check on brush removal ops.			
1600 Moved to HA-34 - Check on sift ops.			
1630 Moved to the office - Admin.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Sunny H 59		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce M. C.</i>		DATE: 2/11/2013	

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	11	Feb	13
	No.			
	Sheet	7		Of 7

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Sifting Operations @ HA-37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
<i>0630 - Morning Safety Meeting</i>	
<i>0645 - Load / Transport Gear</i>	
<i>0715 - JSA / Setup of equipment</i>	
<i>0745 - Start Sifting Operations (25 buckets)</i>	
<i>0803 - Stop Sift</i>	
<i>0820 - Start Sift (25)</i>	
<i>0838 - Stop Sift</i>	
<i>0857 - Start Sift (25) Tested Equipment w/seeds 537-08 / 937-05 / 519-0</i>	
<i>0912 - Stop Sift.</i>	
<i>0934 - Start Sift (25)</i>	
<i>0949 - Stop Sift</i>	
<i>* 1003 - Break</i>	
<i>1028 - Start Sift (25) Found ^{GC} SEEDS (28 - 2.36)</i>	
<i>1045 - Stop Sift</i>	
<i>1108 - Start Sift (25)</i>	
<i>1120 - Stop Sift.</i>	
<i>1148 - Start Sift (25)</i>	
<i>1158 - Stop Sift</i>	
<i>1225 - Break</i>	
<i>1305 - Start Sift (25)</i>	
<i>1319 - Stop Sift</i>	
<i>1330 - Start Sift (25)</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>SUNNY 70°</i>	** See Notes
SHAW PERSONNEL ON SITE: <i>NATE WELLS, Keith Jordan, Tim Erickson, Kirk Buss</i>	
SIGNATURE: <i>Nate Wells</i>	DATE: <i>11 Feb 13</i>



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Tuesday, February 12, 2013
REPORT NO: 0408

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 36 F MAX. 58 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal and MEC investigation in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

101

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	12	Feb	13
	No.:			
	Sheet	2 of 2		

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Sifting Operations @ HA-37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
<i>1205 - Lunch</i>	
<i>1240 - Pushed Piles w/ Front-end Loader</i>	
<i>1303 - Start Sift (25)</i>	
<i>1317 - Stop Sift</i>	
<i>1329 - Start Sift (25)</i>	
<i>1343 - Stop Sift</i>	
<i>1400 - Start Sift (25)</i>	
<i>1415 - Stop Sift</i>	
<i>1440 - Break</i>	
<i>1458 - Start Sift (25)</i>	
<i>1513 - Stop Sift</i>	
<i>1530 - Start Sift (20)</i>	<i>305 Buckets</i>
<i>1548 - Stop Sift</i>	
<i>1605 - Pushed Pile w/ Frontend Loader</i>	
<i>1615 - Cleaned / Put equipment away</i>	
<i>1630 - Load Transport Gear</i>	
<i>1700 - End of Day</i>	
<i>MD - Greater than 2" = 10 lbs, Less than 2" = 6 lbs = 24 Total</i>	
<i>MPPEH - 0</i>	
<i>SEEDS - 0</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
<i>Glinton Huckins</i>	SPECIAL ORDERS AND IMPORTANT DECISIONS:
<i>* See Notes</i>	
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Sunny, clear, 70°</i>	<i>** See Notes</i>
SHAW PERSONNEL ON SITE:	
SIGNATURE: <i>[Signature]</i>	DATE: <i>12 Feb 13</i>

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	12 Feb 13
	No.	
	Sheet	1 Of 2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Sifting Operations @ HA-37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	
<i>0630 - Morning Safety Meeting</i>	
<i>0700 - Reported Serial #'s for EMO1 Turn-in + White's, To CRC</i>	
<i>0715 - Load/Transport gear to HA-37</i>	
<i>0730 - JSA</i>	
<i>0735 - Cleaned Lexan® Shields</i>	
<i>0745 - Start sifting Operations (25 Buckets) ^{NRW}</i>	
<i>0750 - Pushed pile w/ Front-end Loader</i>	
<i>0800 - Start Sift - Tested Equipment w/ seed S37-08, S37-05, S19-0 (25 Buckets)</i>	
<i>0818 - Stop Sift</i>	
<i>0842 - Start Sift (25)</i>	
<i>0855 - Stop Sift</i>	
<i>0914 - Start Sift (25)</i>	
<i>0929 - Stop Sift</i>	
<i>0946 - Start Sift (25)</i>	
<i>1000 - Stop Sift</i>	
<i>1007 - Break</i>	
<i>1037 - Start Sift (25)</i>	
<i>1054 - Stop Sift</i>	
<i>1108 - Start Sift (25)</i>	
<i>1122 - Stop Sift</i>	
<i>1136 - Start Sift (25)</i>	
<i>1150 - Stop Sift</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
<i>Clinton Huckins</i>	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Sunny 70°, clear</i>	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: <i>[Signature]</i>	DATE: <i>2/12/13</i>



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Wednesday, February 13, 2013
REPORT NO: 0409

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 39 F MAX. 54 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal and MEC investigation in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37.

Test or control activities:

Preparatory Meeting conducted for HA 38 DGM, Post Remediation MEC Removal and Site Restoration.

Follow up inspections were performed for all activities.

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Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Wednesday, February 13, 2013
REPORT NO: 0409

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

/Tom Ghigliotto

Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	2	13	13
	No.			
	Sheet	1	Of	1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- HA 37 crew needs to move screen this morning so operations will start a bit later than usual.	
0730- QC Dailies	
0900- Set out on site visits. Start at Units 2 and 3. DGM crew is working in Unit 3 and having no issues. Went over to Chinook to observe the HA 37 crew. When I arrived they were not processing and the UXO team was going through the soil and >2" material. After about 8 minutes they called on the radio for Tim to begin processing again. At a distance I would estimate they are about 2/3 to 3/4 through the stockpile.	
1200- Lunch	
1230- Back at office to get ready for the HA 38 DGM, Post Remediation MEC Removal and Site Restoration Preparatory.	
1300- Conduct Preparatory Meeting.	
1400- Go out to the MOUT site with Jami, Kevin and Bruce. We checked the entire buffer and only found one issue. At the top of the back side, in the sensitive grids the crew put some chipped material on the wrong side of the road and on some potential sensitive species areas. We spoke with the UXO escort and asked to have the crew rake that material across the road and into the correct area.	
1600- Back at office to finish paperwork.	
1700- Depart site.	
Not used	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Clear 39-54	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSCM	DATE: 2/13/13

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	13 Feb 13
	No.	
	Sheet	1 Of 2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Lifting Operations @ HA-37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	
<i>0645 - Morning Safety Meeting</i>	
<i>0715 - Load/transport Gear</i>	
<i>0720 - Fueled TM 3 mini excavator</i>	
<i>0740 - Arrived @ HA-37</i>	
<i>0800 - JSA</i>	
<i>0810 - Pushed pile w/ front end loader</i>	
<i>0820 - Moved Sifter to cleaner area</i>	
<i>0840 - Start Sifr (25 buckets) Tested Equipment w/ seeds S37-Ø8, S37-Ø5, S19-Ø</i>	
<i>0857 - Stop Sifr</i>	
<i>0921 - Start Sifr (25)</i>	
<i>0936 - Stop Sifr</i>	
<i>1000 - Break</i>	
<i>1020 - Start Sifr (25)</i>	
<i>1034 - Stop Sifr</i>	
<i>1051 - Start Sifr (25)</i>	
<i>1103 - Stop Sifr</i>	
<i>1122 - Start Sifr (25)</i>	
<i>1135 - Stop Sifr</i>	
<i>1156 - Start Sifr (25)</i>	
<i>1207 - Stop Sifr</i>	
<i>1212 - Lunch</i>	
<i>1313 - Start Sifting (25)</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
<i>Clinton Huckins</i>	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	<i>* See Notes</i>
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Sunny, Clear 71°</i>	<i>** See Notes</i>
SHAW PERSONNEL ON SITE:	
SIGNATURE: <i>Nathaniel Huff</i>	DATE: <i>13 Feb 13</i>

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	13	Feb	13
	No.			
	Sheet	2 of 2		

PROJECT NAME: FORT ORD, CA Work Order # 01

FIELD ACTIVITY SUBJECT: *Sifting Operations @ HA-37*

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS.

1324 - Stop Sift
 1358 - Start Sift (25)
 1410 Stop Sift
 1456 - Start Sift (30) 230 Buckets
 1511 - Stop Sift
 1540 - Completed Sifting Operations
 1545 - Started Cleaning/Washing Sifter + Performing maintenance on Sifter/Boiler
 1630 - Load/Transport Gear
 1700 - End of Day

MD - Less than 2" pile = 50 lbs, Greater than 2" = 22 lbs Total 72 lbs
 MPPEH = 0 lbs
 Seeds - 0

VISITORS ON SITE: *Clinton Huckins, Fred Malaker* CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
* See Notes

WEATHER CONDITIONS: *Sunny, Clear 71°* IMPORTANT TELEPHONE CALLS:
** See Notes

SHAW PERSONNEL ON SITE:
 SIGNATURE: *[Signature]* DATE: 13 Feb 13



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Tuesday, February 19, 2013
REPORT NO: 0411

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 39 F MAX. 53 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal and MEC investigation in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
-----	-------------	------------------	-------------



Contract No. W912DY-10-0024
Work Order No. 1
None

K-1 WERS
Page 2 of 2
Date: Tuesday, February 19, 2013
REPORT NO: 0411

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

- QC/H&S FADL
- Equipment Utilization
- Test Data
- Tailgate H&S log

FIELD ACTIVITY DAILY LOG



K1

Daily Log	Date:	2	19	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- QC dailies, photo and email management.	
1100- Set out to watch HA38 from Chinook then enter the site during the crews lunch. Crew said they have found about 1.5 buckets of MD and no MPPEH or QC seeds. Emptied rain gauge.	
1300- Return to office. Write up initial inspection for HA 38 I performed yesterday on the DGM crew.	
1330- Heard High Sierra is back at the MOUT to complete chipping. I will go there and check on HA 34 too. Chipping is happening but doesn't look like they will complete today. Chuck and I went up the back way to HA 34. The site is soaked but looks OK. There is water going down our main rock swale and getting to the check dams which are holding water but also look good and are holding up. The rain gauge shows almost 1/2" water was received.	
1500- Back at office. Received the Unit 4 building abatement and demolition report.	
1545- Head to HA 37. Crews are breaking down the sifter and moving it while setting up to haul tomorrow. They are putting up scaffolding and placing protection rocks on each end and shifting the exclusion zone roping and signage.	
1630- Back at office to finish paperwork.	
1650- Learned from UXO techs from HA 38 that two seeds were found today. They found the 37mm and 2.36" and both were greater than 2" side of the screen.	
1715- Depart site.	
<div style="font-size: 2em; color: blue; opacity: 0.5;">Not used</div>	
VISITORS ON SITE:	
Clinton Huckins	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	
Cloudy/Rain/PC	IMPORTANT TELEPHONE CALLS:
39 53	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSCM	DATE: 2/19/13

FIELD ACTIVITY DAILY LOG



Daily Log	Date:	19	Feb	13	K1
	No.				
	Sheet	1 Of			9

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Sifting Operations @ HPA-37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
<i>0645 - Morning Safety Meeting</i>	
<i>0715 - Load Transport Gear</i>	
<i>0730 - JSA</i>	
<i>0740 - Greased Equipment</i>	
<i>0750 - Commenced Sifting Operations (Tested Sifter w/ 537-08 / 537-05 / 519-0) (25 Bucket)</i>	
<i>0804 - Stop Sift</i>	
<i>0826 - Start Sift (25)</i>	
<i>0840 - Stop Sift</i>	
<i>0917 - Start Sift (25)</i>	
<i>0926 - Stop Sift</i>	
<i>0953 - Start Sift (25)</i>	
<i>1007 - Stop Sift</i>	
<i>1029 - Start Sift (25)</i>	
<i>1046 - Stop Sift (Found QC Seed 2-37 in Greater than 2" pile)</i>	
<i>1110 - Start Sift (25)</i>	
<i>1121 - Stop Sift</i>	
<i>1136 - Start Sift (25)</i>	
<i>1147 - STOP SIFT - Rain + Wind START</i>	
<i>1200 - Lunch</i>	
<i>1312 - Start Sift (25)</i>	
<i>1326 - Stop Sift</i>	
<i>1353 - Start Sift (25)</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
<i>Clinton Huggins</i>	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Cloudy, Rain 50°, Heavy Winds</i>	** See Notes
<i>CB+R</i>	
SHAW PERSONNEL ON SITE: <i>Nate Garcia, Keith Jordan, Tim Erickson, Kirk Busse</i>	
SIGNATURE: <i>[Signature]</i>	DATE: <i>2/19/13</i>



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Wednesday, February 20, 2013
REPORT NO: 0412

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 35 F MAX. 53 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

Bunker and Sons, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal and MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI performed hauling soil from HA 37 to the OU2 landfill.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Wednesday, February 20, 2013
REPORT NO: 0412

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

- QC/H&S FADL
- Equipment Utilization
- Test Data
- Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	2	20	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- TGSM for Bunker and Sons who will be hauling soil from HA 37 to the landfill.	
0800- QC dailies.	
0930- Received and email from Larry Carr which has the example of the manifest which will be used for disposing the radium dial waste. He asked me to take it to Richard Schmitt to make sure the information is all correct. I will do that and take a tour of hauling activities.	
1000- Arrive at HA 37 and Tim just loaded the last truck at the site. We are running 9 trucks today. I waited for the next truck and photographed it being loaded and tarped and followed it back to the landfill. I observed no safety or QC issues while I followed the truck and watched it dump at the landfill.	
1200- Lunch	
1300- Return to HA 37 with Chuck and observed trucked being filled. The wind is starting to pick up so we will go to the landfill. While at landfill Keith is measuring the wind with his meter and we have sustained winds at 18 mph with gusts to 22. We observed trucks dumping and the winds actually has decreased. Val and Steve are now onsite it we all decided that dumping is safe and we'll continue.	
1445- Leave landfill and head to office. We will start washing trucks at 3 pm. I called Bunker to schedule hauling for tomorrow.	
1500- Back at office. Work on updating and backing up QC seeding log as well as QC files since ITSI is planning on upgrading my windows software.	
1600- Back at landfill to get photos of trucks being washed out. I spoke with Keith and he didn't find anything today.	
1645- Back at office, finish paperwork and back up files.	
1710- Depart site.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Cloudy/Rain/PC 35-53	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 2/20/13
Tom	



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	2	20	2013
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0800 Moved to the MOUT Site - Check on UXO teams and deliver EM-61 batteries.			
0920 Moved to the MRA - QC ops.			
1030 Completed QC on grids HA028 / HA035 / HA036 / HA037			
1040 Moved to the MOUT site - Check on brush removal ops and UXO teams.			
1200 Moved to the office - Admin/Lunch.			
1300 Moved to the MOUT site - Check on UXO teams ,brush removal ops and deliver MD buckets.			
1550 Moved to HA-37 - Check on UXO 2.			
1620 Moved to the office.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Cloudy H 56		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNITURE: <i>Bence M'Q</i>		DATE: 2/20/2013	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Thursday, February 21, 2013
REPORT NO: 0413

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 45 F MAX. 55 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

Shaw E and I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

High Sierra, subcontractor to ITSI for Vegetation removal services.

Bunker and Son, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed vegetation removal and MEC investigation in the MOUT site 100' buffer. ITSI performed MEC removal in the Fuel Breaks Phase C areas. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI performed soil hauling from HA 37 to the OU2 landfill then continued the screening of the stockpile at HA 37.

Test or control activities:

Final Inspection performed the vegetation removal at the MOUT site.
Follow up inspections were performed for all activities.



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Thursday, February 21, 2013
REPORT NO: 0413

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

- QC/H&S FADL
- Equipment Utilization
- Test Data
- Tailgate H&S log

FIELD ACTIVITY DAILY LOG



K1

Daily Log	Date:	2	21	13
	No.			
	Sheet	1 Of 1		

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- TGSM for Bunker and Sons who will be hauling soil from HA 37 to the landfill. Crews are setting up for loading and accepting soil at the landfill. Paul is setting up traffic signs and dust meters. Gate guard is staging at the site	
0800- QC dailies.	
0930- Set out for HA 37 site visit. Stockpile is almost done and Tim is scraping up the bottom. I emptied the rain gauge which had about 0.45" of water in it from the rain we received on Tuesday. I observed the last truck being loaded and I followed it to the landfill, I saw no traffic violations. Crew at HA 37 is setting up to continue screening the stockpile.	
1100- Last truck is being washed out at the landfill. Keith said he found nothing in the soil today. Landfill crew is cleaning up and some are preparing to return to HA 37 and others will be performing O&M around the landfill.	
1200- Lunch	
1300- Set out to Unit 3 to check on the DGM crew. Mark G is filling in for Gabe and is doing just fine. Also stopped at Chinook to observe HA 37 crew. They are working on screening the stockpile and appear to be moving along just fine.	
1430- Arrive at OU2 landfill to observe and photograph the quarterly perimeter probe monitoring being done by Eric/CB&I, I observed the sampling of SGP's 9F and 19F. All methane results were 0%.	
1530- Return to office to finish paperwork and do my weekly vehicle inspection.	
1700- Depart site.	
<i>Not Used</i>	
VISITORS ON SITE:	
Clinton Huckins	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	
PC/Clear	IMPORTANT TELEPHONE CALLS:
44-55	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQC&SM	DATE: 2/21/13

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	21	Feb	13
	No.			
	Sheet	1 Of 1		

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Hauling / Sifting Operations @ HA 37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	
<i>0645 - Morning Safety</i>	
<i>0700 - Arrived @ HA-37 for Hauling</i>	
<i>1045 - Hauling Completed</i>	
<i>1055 - Sifter Setup for Operations</i>	
<i>1135 - Lunch (JSA)</i>	
<i>1223 - Commenced Sifting Operations (25 Buckets)</i>	
<i>1236 - Stop Sifr.</i>	
<i>1250 - Start Sifr (25)</i>	
<i>1300 - Stop Sifr</i>	
<i>1315 - Start Sifr (25)</i>	
<i>1325 - Stop Sifr.</i>	
<i>1340 - Start Sifr (25)</i>	<i>MD - > 2" = 23 4" = 25</i>
<i>1352 - Stop Sifr.</i>	<i>MPPEH - 0</i>
<i>1406 - Start Sifr (25)</i>	<i>SEEDS - 0</i>
<i>1418 - Stop Sifr</i>	
<i>1436 - Break</i>	
<i>1458 - Start Sifr (25)</i>	
<i>1512 - Stop Sifr</i>	
<i>1533 - Start Sifr (25)</i>	<i>175 Buckets</i>
<i>1547 - Stop Sifr</i>	
<i>1600 - Cleaned up Equipment and left HA-37</i>	
<i>1700 - END of Day</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
<i>Clinton Huckins</i>	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Sunny, Breezy 60°</i>	** See Notes
SHAW PERSONNEL ON SITE: <i>NATE WELLS, Keith Jordan, Tim Erickson, Kirk Busse</i>	
SIGNATURE: <i>Nathan Busse</i>	DATE: <i>21 Feb 13</i>



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Monday, February 25, 2013
REPORT NO: 0415

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 37 F MAX. 56 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the screening of the stockpile at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Monday, February 25, 2013
REPORT NO: 0415

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

- QC/H&S FADL
- Equipment Utilization
- Test Data
- Tailgate H&S log

FIELD ACTIVITY DAILY LOG



K1

Daily Log	Date:	2	25	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for the day of HA 37 sifting the remaining stockpile, OU2 landfill O&M and MOUT site MEC removal.	
0730- QC dailies.	
0930- Set out on site visits.	
1000- While observing HA 38 from Chinook I heard on the radio that the UXO team found the last seed from the stockpile.	
1100- OU2 landfill inspection. O&M crew is removing trees from the cells and we have two dead pines on the northeast side of Area F that are falling on the perimeter fence and need to be removed. Met with Chuck on the Area E soil and he and Steve are making plans to get the soil recontoured in preparation of liner. Chuck agreed to have the crew remove the trees that may fall on the fence.	
1200- Arrive at HA 37. Crew is shut down for lunch. They are finding MD but still no MPPEH.	
1300- Checked MOUT site. Crews are making their way around the buffer zone.	
1400- Check on landfill crew again. They removed some willow trees on Area E that were getting fairly big.	
1500- Back at office for QC dailies, update QC seeding log and other paperwork.	
1700- Depart Site.	
<i>Not Used</i>	
VISITORS ON SITE: Clinton Huckins	
CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS: * See Notes	
WEATHER CONDITIONS: 37-56 PC/Clear	
IMPORTANT TELEPHONE CALLS: ** See Notes	
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM <i>Tom Ghigliotto</i>	DATE: 2/25/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	2	25	2013
	No.			
	Sheet	1 Of 1		

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0810 Moved to MOUT site - QC ops.			
0930 Completed QC on grids 38 / 39 / 40 / 41 / 50 / 51 / 52.			
0940 Moved to check on UXO teams.			
1200 Moved to HA-37 - Check on UXO team 2.			
1230 Moved to the office - Admin/Lunch.			
1330 Moved to the MOUT site - Check on UXO teams.			
1620 Moved to the office.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Sunny H 64		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce McC</i>		DATE: 2/25/2013	

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	25 Feb 13	
	No.		
	Sheet	1 of 2	

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>HA-37 Sifting Operations</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
<i>0645 - Morning Safety Meeting</i>	
<i>0700 - Load/Transport Gear</i>	
<i>0740 - Start Sifting (25 buckets)</i>	
<i>0750 - Stop Sift</i>	
<i>0810 - Start Sift (25)</i>	
<i>0823 - Stop Sift</i>	
<i>0843 - Start Sift (25)</i>	
<i>0855 - Stop Sift</i>	
<i>0912 - Start Sift (25)</i>	
<i>0926 - Stop Sift</i>	
<i>0939 - Start Sift (25)</i>	
<i>0951 - Stop Sift Found QC Seed 5φ-6φ</i>	
<i>1005 - Start Sift (25)</i>	
<i>1022 - Stop Sift</i>	
<i>1036 - Start Sift (25)</i>	
<i>1046 - Stop Sift</i>	
<i>1100 - Start Sift (25)</i>	
<i>1113 - Stop Sift</i>	
<i>1130 - Start Sift (25)</i>	
<i>1143 - Stop Sift</i>	
<i>1155 - Lunch</i>	
<i>1300 - Pushed pile w/ front-end loader</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
<i>Clinton Hudkins BTO-2</i>	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Sunny, 68°</i>	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: <i>Michael Reed</i>	DATE: <i>25 Feb 13</i>



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Tuesday, February 26, 2013
REPORT NO: 0416

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 38 F MAX. 64 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI completed the screening of the stockpile and went back to excavating the J and L grids at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

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Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Tuesday, February 26, 2013
REPORT NO: 0416

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

- QC/H&S FADL
- Equipment Utilization
- Test Data
- Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	2	26	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for the day of HA 37 sifting the remaining stockpile and move to L , OU2 landfill O&M and MOUT site work.	
0730- QC dailies.	
0900- Set out on site visits. Go to Units 2 and 3 to check on DGM crew. They are moving right along. Went up to Chinook to observe HA 37 stockpile screen. It looks like they are just about done.	
1030- Heard HA 37 crew is done with the stockpile so I will go back to the site. I collected photos of the screened soil. Crew is starting to move the screen plant, consolidate soil to make room for incoming soil from the J and L areas. Excavation will be completed in those areas and then the soil will be screened at the stockpile area. The A grids will not be screened.	
1230- Back at office. Read through HA 37 work plan again to confirm that crew does need to lay the <2" material out in 6" lifts and check it again visually and using instruments. I did find that in the plan except there is a typo that states soil will be placed in "0.5 inch lifts" which should have been 0.5 foot lifts. Spoke with Chuck, Kevin, Brad and Bruce and confirmed this.	
1330- Head to MOUT with Kevin. We checked on both UXO teams and looked at the vegetation removal and everything looked very good.	
1500- Arrive back at office and conduct email management.	
1600- Finish paperwork.	
1630- Depart site,	
<i>Not used</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
PC/Clear <i>38-64</i>	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: <i>2/26/13</i>
<i>Tom Ghigliotto</i>	

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	26	Feb	13
	No.			
	Sheet	1 Of		

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT: <i>Sifting + Excavation Operations @ HA-37</i>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
<i>0645 - Morning Safety Meeting</i>	
<i>0700 - Load/Transport Gear to HA-37</i>	
<i>0715 - JSA</i>	
<i>0730 - Pushed pile w/ Loader</i>	
<i>0800 - Start Sift (25 Buckets)</i>	
<i>0815 - Stop Sift</i>	
<i>0833 - Start Sift (25)</i>	
<i>0844 - Stop Sift</i>	
<i>0900 - Start Sift (25)</i>	
<i>0913 - Stop Sift</i>	
<i>0929 - Start Sift (25)</i>	
<i>0941 - Stop Sift</i>	
<i>0955 - Start Sift (25)</i>	
<i>1002 - Stop Sift</i>	
<i>1023 - Start Sift (19)</i>	<i>144 Total Buckets</i>
<i>1045 - Stop Sift</i>	
<i>1100 - R.F. Sifter Away cleaned area</i>	<i>MD < 2" = 29 > 2" = 49</i>
<i>1200 - Lunch</i>	<i>MPEH = 0</i>
<i>1245 - Begin Excavation</i>	<i>SEED = 0</i>
<i>1430 - Break</i>	
<i>1445 - Transported soil to Stockpile</i>	
<i>1700 - End of Day</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
<i>Clinton Huckins</i>	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
<i>Sunny 70°</i>	** See Notes
<i>CB+I</i>	
SHAW PERSONNEL ON SITE: <i>NATE WELLS, Keith Jordan, Tim Erickson, Kirk Busse</i>	
SIGNATURE: <i>[Signature]</i>	DATE: <i>2/26/13</i>



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Wednesday, February 27, 2013
REPORT NO: 0417

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 38 F MAX. 58 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the excavation of the J and L grids at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

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Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Wednesday, February 27, 2013
REPORT NO: 0417

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

- QC/H&S FADL
- Equipment Utilization
- Test Data
- Tailgate H&S log



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Thursday, February 28, 2013
REPORT NO: 0418

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 41 F MAX. 58 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the excavation of the J and L grids at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Thursday, February 28, 2013
REPORT NO: 0418

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

- QC/H&S FADL
- Equipment Utilization
- Test Data
- Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	2	28	2013
	No.			
	Sheet	1	Of	1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0800 Moved to MOUT site - Check on UXO teams.			
1200 Moved to the office - Lunch			
1320 Moved to the MOUT site - Check on UXO teams.			
1600 Moved to HA-37 - Check on UXO team 2.			
1625 Moved to the office.			
1630 Teams returned from the MRA - Vehicle and equipment maintenance.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Sunny H 72.		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce M. C.</i>		DATE: 2/28/2013	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Monday, March 04, 2013
REPORT NO: 0419

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 42 F MAX. 52 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in units 2 & 3. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the excavation of the J and L grids at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

18



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Monday, March 04, 2013
REPORT NO: 0419

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

/Tom Ghigliotto

Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	3	4	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for the day of excavation at HA 37, MEC removal at the MOUT and DGM in units 2 and 3.	
0800- QC Dailies	
**0913- Received a call from Dave Eisen. I informed him that the radium dial disposal team will be onsite today to start the disposal process of the radium dials and associated waste. He said he was on his way to Fort Hunter Liggett and to let them start and he will catch up with their progress tomorrow.	
1045- Thom arrives on site. He will be the Army's subcontractor to package, manifest and handle the disposal. Val will give him UXO awareness. Larry arrives too so we went out to the connex to look at the drums. Thom scanned them with his radiation meter and determined them to be very low level, even the two that contain the dials themselves. We will wait for Judy from the Army to arrive around 2 to hold a meeting to discuss our approach.	
1200- HA 37 crew is done with the L and J grid excavations and are now going to start setting up the screening after they take lunch.	
1300- Back at office to work on a HA 37 proposed haul route sampling map.	
1400- Help DGM crew find stainless steel bolts and install on towed array.	
1430- Discuss upcoming range sampling at Units 4, 11 and 12.	
1500- Radium dial meeting with Larry, Thom and Judy from the Army Rock Island. In short Judy is taking on the oversight to dispose of the radium dials and associated waste and will sign as the generator and Richard Schmitt will sign as the generator on the other non-radioactive manifests. They are going to repackage and label drums tomorrow and ship off on Wednesday. Judy, Thom and Larry are going to talk with Richard to go over these details.	
1600- HA 37 crew found the final seed. It came off the greater than 2" side of the trommel.	
1630- Depart Site	
<hr style="border: 1px solid blue;"/>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
42-52	** See Notes
Fog/Cloudy/PC	
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/4/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	4	2013
	No.			
	Sheet	1 Of 1		

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0800 Ethics training.			
0900 Moved to MOUT site - Check on UXO teams.			
1140 Moved to the office - Admin/Lunch.			
1310 Moved to the MOUT site - Check on UXO teams.			
1600 Moved to HA-37 - Check on UXO soil remediation/sift ops.			
1620 Moved to the office.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Cloudy H 57.		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce McC</i>		DATE: 3/4/2013	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Tuesday, March 05, 2013
REPORT NO: 0420

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 46 F MAX. 58 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the excavation of the J and L grids at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

15



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Tuesday, March 05, 2013
REPORT NO: 0420

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

- QC/H&S FADL
- Equipment Utilization
- Test Data
- Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	5	13
	No.			
	Sheet	1 Of 1		

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for the day of screening soil at HA 37, Start DGM at Unit 10 and MOUT site MEC removal around 100' buffer.	
0730- Update QC seeding log.	
0800- Larry and the radiation crew arrive on site. I'm going to let him use my GSA today and I'll ride with others until they are done for the day.	
0840- Jami arrives on site. We are going to Unit 10 to look at grids that had sand gillia and other sensitive habitat. We walked the grids that were identified and were able to confirm populations of sand gillia. It was decided that grids had enough sand gillia that it was best to avoid the grid entirely rather than try to gather DGM data around the populations.	
1030- Checked on the radiation disposal crew and they are just about done with consolidating and labeling drums.	
1130- Back at office to read through BRA sampling approach.	
1230- Lunch	
1300- Go to haz waste department with the rad crew to get manifests signed by Richard Schmitt for the pickup tomorrow.	
1415- Set out on site visits starting at HA 37 since they are on break. They have only found 5 pieces of MD but are finding a lot of dirt clods that are coming off the greater than 2" side but that are still processing ok.	
1530- Arrive at Unit 10. Explained to crew that they have to avoid the grids mentioned about. A map will be sent to Chuck N.	
1615- Arrive back at office to finish paperwork.	
1700- Depart Site.	
<i>Not used</i>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Cloudy/PC	** See Notes
	46-58
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/5/13
<i>Tom Ghigliotto</i>	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Wednesday, March 06, 2013
REPORT NO: 0421

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 46 F MAX. 56 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the excavation of the J and L grids at HA 37. ITSI

Test or control activities:

Final Inspection performed for HA 34 erosion control.
Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

60

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

 /Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG



Daily Log	Date:	3	6	13
	No.			
	Sheet	1 Of 1		

K1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0730- Arrive on site. Set up for radium dial project disposal.	
0800- Disposal crew is on site. Den Beste brought a semi truck and we have some concerns. First Val is worried about the over head line across Watkins Gate so we will check for clearance. Next we are concerned about the driver being able to turn the truck around at the connex box location.	
0930- Drive was able to get in safely and has staged and drums are starting to go into the truck. They are being placed in order of how they will be coming off since there are 3 landfill that they are going to. I collected photos of each drum, a pre-sweep of the empty truck to make sure no radiation was in the truck before we started, drums being loaded, the loaded truck with all 12 drums and a post sweep of our connex to make sure it is radiation free which it is. The truck and all of us went back to the office to complete manifests, placarding and custody sealing of the truck. Collected photos of truck with seals and placards. Gave Richard Schmitt the generator copies of manifests, copies to Army and Driver as well as mine.	
1145- Everything is done and I collect the last photo of the truck leaving our yard with placards in place.	
1230- Scan all manifests and send to Larry.	
1300- Write up Final Inspection for the erosion repair work performed at HA 34. Also marked up a map with proposed haul route samples at HA 37 in the area between the J and A grids.	
*1400- Take Final and map to Dave Eisen for signature and sample approval. Dave agreed with everything.	
**- Received a call from the Unit 10 DGM crew that they found a nest in the containment area. I told them to avoid while I call Jami.	
1445- Jami arrive and we went to Unit 10. The nest turned out to be an abandoned wood rat nest which she dismantled and allowed the DGM crew to continue.	
1600- Back at office. Finish paperwork	
1630- Depart site	
<hr style="border: 1px solid blue;"/>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	
Cloudy/PC	IMPORTANT TELEPHONE CALLS:
42-56	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/6/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	6	2013
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0810 Moved to MOUT site - Check on UXO teams and QC ops.			
1000 Completed QC on grids 28 / 27 / 26 / 25 / 24.			
1200 Moved to the office - Admin/lunch			
1340 Moved to the MOUT site - Check on UXO teams.			
1600 Moved to HA-37 - Check on sift ops.			
1620 Moved to the office.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Showers H 52.		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce McCl</i>		DATE: 3/6/2013	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Thursday, March 07, 2013
REPORT NO: 0422

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 46 F MAX. 56 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the excavation of the J and L grids at HA 37. ITSI

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

19

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

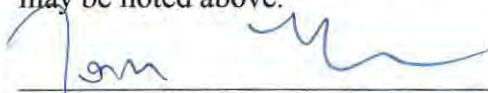
None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Monday, March 11, 2013
REPORT NO: 0423

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 37 F MAX. 58 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the excavation of the J and L grids at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Monday, March 11, 2013
REPORT NO: 0423

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 43 F MAX. 56 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued the excavation of the J and L grids at HA 37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

20

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

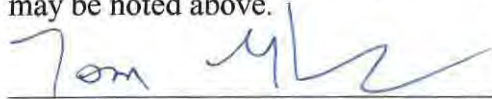
None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.



/Tom Ghigliotto

Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	3	12	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for the day of HA 37 screening of stockpile, MOUT site MEC removal and Unit 10 containment area DGM.	
0800- QC dailies	
1000- Head to landfill to check perimeter. Toured around entire landfill and across the tops and found no problems. The landfill O&M crew are switching over to help the HA 37 crew with deconning the screening plant. They are loading some rock to run through the screen to assist in the removal of caked soil. I went to HA 37 next and the crew has started cleaning the unit and preparing the site to haul tomorrow. Went to Unit 10 to check on the DGM crew. They are still working grids on the south side of the unit	
1200- Back at office and start looking through BRA sampling information and setting up the project since we want to start next Monday.	
1300- Lunch	
1400- Head out to HA 37. Crew is still cleaning the screen which I collected photos of operations. I went out into the zone to put flags in the ground for the 5 haul route samples between the J and A grids. I was with Paul so he is aware of the flagged locations. Crew is finishing up the cleaning of the screen. All water in in the stockpile area and the area will be sampled when we sample the stockpile area and final haul route to the A grids.	
1600- Return to office. Continue preparing for BRA sampling.	
1700- DEPART Site.	
<div style="font-size: 2em; color: blue; opacity: 0.5;"> Nox used </div>	
VISITORS ON SITE:	
Clinton Huckins	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Marc Edwards	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	
PC/Clear	IMPORTANT TELEPHONE CALLS:
43-56	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSCM	DATE:
Tom Ghigliotto	3/12/13



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Wednesday, March 13, 2013
REPORT NO: 0425

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 45 F MAX. 70 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

Bunker and Son, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI transported soil from HA 37 to the OU2 landfill.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

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Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Wednesday, March 13, 2013
REPORT NO: 0425

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

 /Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG



Daily Log	Date:	3	13	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for day of hauling sol from HA 37 to the landfill, MOUT site MEC removal and reaq at HA 38.	
0730- Work on BRA preparatory package.	
0930- After talking to Chuck I checked the library and confirmed there are two versions of the landfill expansion report. I talked to Audrey and it is on the list of to do's to go through the library and make sure we remove all old versions of reports and replace with the latest approved versions of reports.	
1000- Set out on site visits. Start out by going to HA 37 to observe hauling operations. Trucks are being loaded at HA 34 and I followed one to the landfill and watched it dump. I saw QC or safety issues during my inspections.	
1130- Lunch	
1230- QC dailies.	
1400- Internal BRA sampling meeting.	
*1515- Arrive at BRAC to talk to Dave Eisen. Kevin and I discussed the idea of collecting and analyzing the surface and 1 foot samples from Units 4, 11 and 12. This was save time in sampling twice due to 14 day holding times and to ultimately have a better site chacterization for the Army to present to the agencies. Dave agreed with the approach.	
1545- Back at office and finishing paperwork and putting BRA prep together.	
1700- Depart site.	
<i>Not used</i>	
VISITORS ON SITE: CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:	
Clinton Huckins	
Marc Edwards	* See Notes
WEATHER CONDITIONS: IMPORTANT TELEPHONE CALLS:	
PC/Clear / Fog 45-70	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/13/13



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Thursday, March 14, 2013
REPORT NO: 0426

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 42 F MAX. 62 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued remediation at HA 37, specifically in the A grids.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

15



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Thursday, March 14, 2013
REPORT NO: 0426

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

 /Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	14	13
	No.			
	Sheet	1 Of 1		

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for day of remediation at HA 37, MOUT site MEC removal and reaq at HA 38.	
0730- Finalize the Units 4, 11 and 12 BRA sampling preparatory package. Update Project QC Inspections log and back up.	
**0900- Conference call with Chuck Clyde and Mick Williams regarding QA and QC of liner installation. In short Mick is fine with me overseeing the contractor and doesn't see the need for full time QA in the field or to have the same level of effort as we have in the past. However we have a detailed QA/QC plan so if we plan to deviate from that we'll need to redo the plan.	
1030- Set out on site vists. Go to HA 37 and crew is excavating the A grids. Checked on Unit 10 dgm crew and they are working around the containment area.	
1200- Lunch'	
1300- Email and photo management.	
*1430- Working with Karen and Jami for BRA setup. Jami has some grids of concern so I'm having Karen overlay proposed sample locations to see if we have any issues.	
1515- QC dailies	
1700- Depart site.	
<i>Not Used</i>	
VISITORS ON SITE:	
Clinton Huckins	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Marc Edwards	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	
Fog/Cloudy/PC	IMPORTANT TELEPHONE CALLS:
42-62	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE:
<i>Tom Ghigliotto</i>	3/14/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	14	2013
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA Work Order Number: 01

FIELD ACTIVITY SUBJECT: H&S

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS, Subject: QC

0630 Safety and SUXOS Brief

0700 Worked on admin.

0830 Went home sick.

VISITORS ON SITE: CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
SHAW's SPECIAL ORDERS AND IMPORTANT DECISIONS:

WEATHER CONDITIONS: Sunny H 73. IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: See tailgate

SIGNATURE: *Bruce M'Q* DATE: 3/14/2013



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Monday, March 18, 2013
REPORT NO: 0425

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 46 F MAX. 56 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued remediation at HA 37, specifically in the A grids.

Test or control activities:

Preparatory Meeting and Initial phase inspection Units 4, 11 and 12 BRA sampling. Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

30



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Monday, March 18, 2013
REPORT NO: 0425

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:


None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	18	13
	No.			
	Sheet	1 Of		2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Email management and set up for preparatory meeting.	
0800- Conduct Units 4, 11 and 12 BRA sampling preparatory meeting.	
0900- Continued set up for sampling. We still are waiting for containers, the GPS and most importantly the coordinates of proposed samples. I have an email into Karen Black but she's been on vacation and returns today so I'm hoping she can get to my request soon.	
1000- Set out on site visits. Started at HA 37 where crew is excavating the A grids and hauling to the stockpile area where the stockpile is being checked by a UXO tech and then pushed up to make as much room as possible. Grade check looked good but I want to make sure soil that is being loaded into the off-road truck is staying in the remediation zone. A small bit of soil is lost while the excavator is turning from the excavation to the truck. What I'm seeing is soil coming off the bucket but it is staying in the zone. My concern is if wind increases and or shifts in direction.	
1100- Check on HA 38. Flags are in the ground and ready for investigation. Went to check on the DGM and Bio crews next at Unit 10. On the way Steve and I noticed broken glass and plastic along with packets of anti fog wipes. At first it looked like a vehicle accident scene so we called safety one and agreed to meet in 20 minutes. We went to unit 10 where DGM crew is working and Jami is looking at Unit 7 grasslands. Went back to the intersection of Orion and Watkins gate where we found the broken glass. Upon further investigation I noticed that the light from the forklift was removed and was probably smashed on the road there. Val called BRAC on the radio so we left the scene.	
1200- Lunch	
1230-Back at office and sample supplies have arrived but no answer on coordinates yet. I decided to get crew together and go out to look at proposed sample locations based upon map. More importantly I wanted to go to Unit 4 and look at possible bias samples based upon field conditions. In all of 4 I found a potential 3-4 locations but will get USACE input. Will have a map generated for the grids in Unit 12 and other areas to make sure we are not impeding and areas of concern.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Fog/Cloudy/PC	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/18/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	18	13
	No.			
	Sheet	2 Of		2

PROJECT NAME: FORT ORD, CA		Work Order # 01
FIELD ACTIVITY SUBJECT:		
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		
1600- Back at office after going to BRAC and now I have the GPS unit. I took out all batteries and put them on chargers. Have coordinates and will set up to complete process.		
1700- Depart site		
<i>Not used</i>		
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins		SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards		* See Notes
WEATHER CONDITIONS:		IMPORTANT TELEPHONE CALLS:
Fog/Cloudy/PC		** See Notes
SHAW PERSONNEL ON SITE:		
SIGNATURE: Tom Ghigliotto/CQCSM		DATE: 3/18/13
<i>Tom Ghigliotto</i>		



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Tuesday, March 19, 2013
REPORT NO: 0426

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 46 F MAX. 64 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued remediation at HA 37, specifically in the A grids. ITSI performed reconnaissance and sampling as part of Basewide Range Assessment of Units 4, 11 and 12.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

15

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.



Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	19	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for the day. Start out by getting files to Chuck to load into the Leica, look at maps generated by Andrew of lead areas in Unit 4 and go over Unit 12 maps with biological concerns.	
0830- Head out into the field. We will be going to Unit 4 to sample then Unit 11. While at Unit 4 we moved sample number 2 a few feet so it was in front of the firing point and not in the disturbed road. I chose one bias sample which I showed to Marc and Bart. It was a mound approximately 8' feet high and 6-8 around. It had bullets, casings, burned wood debris and other material. We actually found four places in the vicinity but only the mound was sampled. We then moved to the western end of Unit 4 and while I was showing USACE my thoughts from the firing points the recon crew called and said they found the range fan sign for the eastern end of HA 28. Marc and I could clearly tell it didn't match the sample map and we could potentially have more of the range which was never sampled. He requested me to write an email to Dave Eisen to explain. We did some more recon and I would like to sample one more area where we found bullets, the APC used to be and there are no previous sampling in the area.	
1200- Lunch	
1300- Jami is on site and we're going to go to Unit 12 to sample and go to the sample in the grid that is has sand gillia. We found bullets all around the first location so I asked Paul to include metals analyses. There are bullets all around the south side where the silhouettes were as well as a lot of 40 mm MD. In the next 6 locations the amounts of bullets was either much less or none at all.. I decided to collect a bias sample for explosives in the area where the gamma goat targets were. There was MD and other debris there but we didn't see much evidence of bullets. I was having some GPS issues at various times.	
1600- Depart ranges and head to office. We over areas in Units 4 and 11 with Jami to make sure I'm not planning to collect samples in any areas with habitat concerns. Chuck N downloaded the GPS and does appear that some points did not save correctly. I will reshoot them in the morning while Paul is putting out dust monitors.	
1700- Depart site.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Fog/Cloudy/PC	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE:
	3/19/13



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Wednesday, March 20, 2013
REPORT NO: 0427

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 49 F MAX. 62 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued remediation at HA 37, specifically in the A grids. ITSI performed reconnaissance and sampling as part of Basewide Range Assessment of Units 4, 11 and 12.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

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FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	3	20	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for day of recon and sampling. Chuck N detected a problem with my GPS points I collected yesterday so I will go back to Unit 12 and recollect the points.	
0830- Downloaded new data and there is still a problem. I did a test in the parking lot and I'm doing everything right as the test worked fine. I will return to the field to try collecting them again because I want to make sure I'm doing it correctly before moving ahead with sampling and GPS collection in Unit 11.	
1030- Data has been collected correctly and verified so we will move on to sampling Unit 11 proposed locations while doing recon for bias sample locations. All locations have frag in and around the sample areas and some locations are in craters. We looked around the target boxes in the Unit near the road and found obvious bullets even using the White metal detector.	
1240- I have located and flagged all sample locations which were cleared by Keith and ready to be sampled. He and Paul will continue with sampling while I return to the office to download data and return the GPS unit to Cary.	
1315- GPS data was all good and Chuck N will send to Karen to plot. I returned GPS unit to Cary at BRAC. Went back to office to look at maps of Unit 4.	
1400- Went to Unit 4 to do additional recon specifically around the area of HA 28. While walking I didn't see much obvious evidence of bullets or targets. However when we used the White metal detector Keith was getting rings everywhere. We scratched the surface and found there were bullets under the duff and surface. As we increased our area we continued to find bullets. We then found a steel target post which matched up with the DGM map and there were bullets all around it. As walked behind the target line we continued to find bullets all the way to hillside behind the target line which is typical of a range. I flagged some proposed sample locations which I plan to have USACE look at and approve.	
1615- Arrive at HA 37. Crew is digging in the A grids and moving along well. After shut down USACE arrived. We discussed hauling tomorrow and trying to finish up the excavation. USACE directed ITSI to remove the debris from the range.	
1720- Back at office, finish paperwork and depart site.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
David Eisen	
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
49-62	** See Notes
Rain/Cloudy/PC	
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/20/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	20	2013
	No.			
	Sheet	1 Of 1		

PROJECT NAME: FORT ORD, CA Work Order Number: 01

FIELD ACTIVITY SUBJECT: H&S

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS, Subject: QC

0630 Safety and SUXOS Brief

0700 Worked on admin.

0710 Move to the mount site - QC ops.

0825 Completed QC on grids 6 / 7 / 8 / 9 / 10 - Moved to the office.

0845 Work complete for the day - PTO.

VISITORS ON SITE: CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
SHAW's SPECIAL ORDERS AND IMPORTANT DECISIONS:

WEATHER CONDITIONS: Partly Cloudy H 64. IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: See tailgate

SIGNATURE: *[Signature]* DATE: 3/20/2013



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Thursday, March 21, 2013
REPORT NO: 0428

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 47 F MAX. 56 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued remediation at HA 37, specifically in the A grids. ITSI performed reconnaissance and sampling as part of Basewide Range Assessment of Units 4, 11 and 12.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

101

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

 /Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	21	13
	No.			
	Sheet	2 Of		2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for day of recon. Paul is setting up trucking signs and Keith is helping move the scaffolding at HA 37 while I review DGM and dig maps of Units 11 and 12 to use for our last recon of the sites to pick bias locations. I also talked with Brad and Val and told them my thoughts of where we should sample and see if they had any other areas. Brad showed me an area in Unit 11 that he remembered had a large accumulation of bullets which I didn't know about. He circled the area on a map and we will check that area today. I also received a 3D map of the DGM data of both Units which we will use too.	
0900- Using DGM data I'm having Chuck plot the proposed bias sample locations along with the collected samples on a map which I will use for recon and to present at the MMRP.	
1000- Set out to Units 11 and 12. Went to Unit 11 to start looking around the target boxes. As we searched behind the boxes we visually did not see any but using the White metal detector they were ringing off. Keith scrapped the soil an inch or two bullets were there. We continued working our way further from the target and we still finding bullets. We did not dig any deeper to see how far they went, as soon as it was determined to be a bullet and not frag or other metal material we moved out further from the target box to get an idea of how far they go. We reached the top of the hill and still finding bullets. At the top there is a washout/gully which has casings and bullets that appear to have been taken there by water flow. We went to the north and started down the hill towards the set of target boxes that are in the range and pop up towards the top. A ledge is there that appears was man made to be level and wraps around the ridge. There are many bullet casings all along the ridge which appears to be a former firing line area. UXO tech says it probably was also used to shoot larger than small arms at the targets in the range which are all in full view of the firing point. After seeing the entire area it appears this was an area used to train soldiers how to fight up the hill from HA 31 and hold the hill from both sides.	
1215- Back at office and spoke to Brad and Val. I explained what we observed and both think it is logical.	
1230- Make copies of maps I want to present at the MMRP meeting.	
**1300- MMRP meeting. After the BRA presentation Dave Eisen requested a map showing the proposed sample locations	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
David Eisen	
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
PC/Clear	** See Notes
47-56	
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/21/13



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Monday, March 25, 2013
REPORT NO: 0429

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 47 F MAX. 55 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

Bunker and Sons, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued remediation at HA37 and performed hauling of soil from HA 37 to the OU2 landfill. ITSI performed reconnaissance and sampling as part of Basewide Range Assessment of Units 4, 11 and 12.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

4/1



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Monday, March 25, 2013
REPORT NO: 0429

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG



K1

Daily Log	Date:	3	25	13
	No.			
	Sheet	1 Of		2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for day of recon. Paul is setting up trucking signs and dust tracks while I try to do email management.	
0800- Go to BRAC to get GPS from Cary. He needs it back this afternoon so we will go out and obtain all the proposed sample locations so they can be mapped and get approval by USACE.	
0830- Still not able to send or receive email. Since I'm having the same issue with my phone I assume the problem is in Walnut Creek. I tried to call the helpdesk but got no answer. Going to load up and start field recon.	
0900- Arrive at Unit 11. We will be collecting GPS points for proposed samples. We started by searching the areas that are down range of the target boxes in the middle of the Unit. We found some areas by using the White metal detector and a small hand held unit the Keith is using. The bullets are just under the surface and we did not dig to see how deep they are. We also looked in front of the target box and bullets were visible on the surface and beneath, We will recommend 3 samples in this area. We went to the target boxes near Mercury on the south side of the unit. We found two proposed sample locations which would also be down range behind the target and were based upon lead bullets found. These samples should show if the unit has any lead issues. Lastly two explosive locations were identified based upon previous APC's or hard targets which were heavily damaged and had a lot of MD and frag in the vicinity. We went to Unit 4 next to GPS in 9 proposed spots. Four locations are from the face of the former range, one at a target location and three from behind it to the back of the firing line. The last sample is from the corner of the Unit where an APC was location which was damaged. All nine of these locations had bullets in the area or just beneath the surface. Unit 12 has two locations based upon MD, bullets and target.	
1230- Return to office. Ask Chuck to download data and send to Karen to make a map to show USACE.	
1300- Return GPS to Cary at BRAC.	
1330- Karen is out today so Chuck is working on making the best map he can which should be fine for this purpose. Final maps of actual sample locations will be generated as well any new features found during recon.	
**1430- Showed Marc the proposed sample maps and he is Ok with locations but wants Dave and Chris to approve too.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
David Eisen	
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
47-55	** See Notes
Cloudy/Fog/PC	
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/25/13

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	3	25	13
	No.			
	Sheet	2 Of		2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
<p>**1515- Back at office. There is some question on a haul route sample where one result was 6,900 ppm but the duplicate showed somewhere in the 200 ppm range. Dave Eisen is requesting to resample the area. My recommendation would be to have the lab reanalyze them and see what the results show. I spoke with Eric and he is going to talk with Dave to see what USACE wants. After emails went back and forth it was decided to run that samples that are at the lab.</p> <p>**1611- Received authorization from Marc that we can proceed with sampling the proposed additional samples at Units 4, 11 and 12. I will let Paul know so he can prepare for sampling tomorrow.</p> <p>1630- Go back to BRAC to get our GPS back from Cary so I can use it tomorrow.</p> <p>1715- Put batteries on chargers, finish paperwork and depart site.</p>	
<p style="font-size: 2em; color: blue;">Not used</p>	
VISITORS ON SITE:	
Clinton Huckins	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Marc Edwards	SPECIAL ORDERS AND IMPORTANT DECISIONS:
David Eisen	* See Notes
WEATHER CONDITIONS:	
Cloudy/Fog/PC	IMPORTANT TELEPHONE CALLS:
	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/25/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	25	2013
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0840 Move to the mount site - Check on UXO teams and QC ops.			
1030 Completed QC on grids 66 / 67 / 68 / 69 / 70 / 71 / 72.			
1210 Moved to the office - Admin/Lunch.			
1330 Moved to the MOUT site - Check on UXO teams.			
1600 Moved to the office.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Partly Cloudy H 55.		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bence McD</i>		DATE: 3/25/2013	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Tuesday, March 26, 2013
REPORT NO: 0430

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 43 F MAX. 59 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

Bunker and Sons, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued remediation at HA37 and performed hauling of soil from HA 37 to the OU2 landfill. ITSI performed reconnaissance and sampling as part of Basewide Range Assessment of Units 4, 11 and 12.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Tuesday, March 26, 2013
REPORT NO: 0430

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

/Tom Ghigliotto

Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG



Daily Log	Date:	3	26	13
	No.			
	Sheet	1 Of		2

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for day of sampling additional BRA locations, hauling soil from HA 37 to the OU2 landfill and MOUT site MEC removal. Paul has to put out signs and dust tracks and I will work on setting up the government GPS backpack since Cary does not need to borrow our any longer. I will also work on catching up on dailies.	
**0749- Received a call from Chuck C and Marc. USACE is requesting a sample to be collected from the hot spot at HA 37 at 6" which is the proposed excavation depth to make sure it is clean. We decided to also collect a 1' sample to analyze if the 6" sample results are greater than 225 ppm. The 6" sample will be placed on a rush turn around.	
0815- Spoke with Paul and Eric to let them know about the HA 37 sampling which takes priority over BRA samples. Paul and Keith will go to HA 37 and collect samples. I'm working with Chuck N to finalize the set up of our GPS and prepare to collect the BRA samples.	
0900- QC dailies	
1000- Set out to start sampling. We will start in Unit 4. The Polaris is down so we'll have to walk and carry sample supplies. I am going to GPS every exact location as well as new features like the target in Unit 4 and the target boxes in Unit 11.	
1130- Having GPS issues where it doesn't seem to be locking on to the base station. Going to HA 37 to troubleshoot with DGM crew while Paul and Keith continue sampling. Switched back to base station antenna and GPS is working perfectly. I met back up with sampling crew and completed Unit 4 and moved to Unit 11. I surveyed in the target boxes so final map will be correct and continued with sampling.	
1430- Finish sampling for the day so Paul can collect dust tracks. I will go to HA 37 to collect photos of DGM crew and check on hauling activities. Huck complained trucks were not going fast enough so I followed one back to the landfill and found he was doing the speed limit. Once at landfill I used the GPS to help Steve put out control points for grade checking.	
1630- Back at office. Put batteries on chargers and finish paperwork for the day. We have 4 samples left to collect at 11 & 12.	
1710- Depart site.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Cloudy/Fog/PC 43-59	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/26/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	26	2013
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0840 Move to the mount site - Check on UXO teams and QC ops.			
1030 Completed QC on grids 59 / 60 / 63 / 64 / 65.			
1210 Moved to the office - Admin/Lunch.			
1330 Moved to the MOUT site - Check on UXO teams.			
1600 Moved to the office.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Partly Cloudy H 57.		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce McC</i>		DATE: 3/26/2013	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Wednesday, March 27, 2013
REPORT NO: 0431

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 45 F MAX. 67 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

Bunker and Sons, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued remediation at HA37 and performed hauling of soil from HA 37 to the OU2 landfill. ITSI performed reconnaissance and sampling as part of Basewide Range Assessment of Units 4, 11 and 12.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

18

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	3	27	13
	No.			
	Sheet	1	Of	1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for day of sampling additional BRA locations, hauling soil from HA 37 to the OU2 landfill and MOUT site MEC removal. Paul is setting out dust tracks and Keith is escorting a group of meteorologists to the MOUT site while I work on email management, GPS set up and QC dailies.	
0800- Load up GPS and supplies and head out to Units 11 and 12 to collect our final samples, The two locations on Unit 11 are from former APC and target areas where a significant amount of MD was found. Samples will be analyzed for explosives only. The two areas from Unit 12 area from a former silhouette target where we saw MD and bullets and from the northwest side of the Unit where lots of MD was found as well as many digs. We also saw bullets in that location so both samples will be analyzed for metals and explosives.	
1030-Finished sampling and head to HA 37. Crew is hauling soil and will return to excavation once complete. I followed a truck back to the office and saw no safety or QC issues. Once back at office I gave GPS to Chuck N to have points down-loaded and sent to Karen to make maps.	
1130- Lunch	
1215- Set back out on site visits. Go to Unit 10 to check on DGM crew. They are moving along well and having no issues. Go back to HA 37 where crew has started to remove the stockpile floor while hauling soil. UXO tech has not seen anything while watching soil being loaded. Since I have heard complaints about trucks going too fast and too slow I will follow one back to the landfill. During the trip I didn't see any problems. The truck was doing the speed limit in post areas and slowed down around the blind turns as directed. While at landfill the crew is accepting soil and using the sheep's foot compactor while pushing soil with the dozer. Toured perimeter of landfill and found no problems.	
1600- Back at office. Finish paperwork	
1700- Depart site.	
Not Used	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Cloudy/PC	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE:
	3/27/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	3	27	2013
	No.			
	Sheet	1	Of	1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0840 Move to the mount site - Check on UXO teams and QC ops.			
1030 Completed QC on grids 29 / 30 / 31 / 32 / 33.			
1210 Moved to the office - Admin/Lunch.			
1330 Moved to the MOUT site - Check on UXO teams.			
1600 Moved to the office.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Partly Cloudy H 61.		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce M. C.</i>		DATE: 3/27/2013	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Thursday, March 28, 2013
REPORT NO: 0432

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 49 F MAX. 64 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

Bunker and Sons, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI continued remediation at HA37 and performed hauling of soil from HA 37 to the OU2 landfill.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

16

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	3	28	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for day of HA 37 hauling and remediation, MOUT site MEC removal and DGM in Unit 10.	
0730- Brad and I discuss the QA seed that was missed at the MOUT site. He is going to write a CAR. Apparently the team did not use either the White or EM-61 for various reasons like terrain and excess bullet accumulation. Brad told team all team leaders that if a decision like that is made in the field that he and UXOQCs needs to be informed and their approval is required. In addition whatever decisions are made they need to be documented for future reference.	
0830- Spoke with Kevin regarding HA 37 post remediation MEC Removal. He and Dave Eisen discussed an approach that is different than our straight forward plan. It was decided that we could discuss all changes and document them through the mutual understanding during the preparatory meeting as opposed to writing a FWV.	
0915- Set out to do inspections of sites. Start at HA 37. Crew is hauling soil that is being excavated from the stockpile area. The two hot spots have been excavated. I need to talk to Chuck to see what the plan is for cleaning up the soil on the area between the stockpile and front of the range. We used contaminated soil to build up that area which needs to be removed. I went to Unit 10 to check on the DGM crew. They are working on the north side of the unit and are having no issues. Went to MOUT site next. I didn't stop the crews but watched from a far and collected some photos. Went to landfill next. Trucks are coming in and dumping while crew is pushing it out and placing in lifts and compacting using the sheep's foot.	
1130- We are starting to wash out trucks since we are done with hauling. Crew at HA 37 will start deconning the A35 and excavator. The loader is being worked on by the Volvo mechanic and will also be going off rent.	
1230- Back at office to work on paperwork. Paul has turned in the BRA packet and I will go through it and organize so I can send a copy to Larry Friend and have Audrey post it on the portal.	
1400- Set back out to HA 37. Crew is still deconning equipment. Went to landfill and crew is cleaning up and compacting.	
1600- Back at office to finish daily.	
1630- Depart site.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
49-64	** See Notes
Cloudy/PC	
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 3/28/13



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Monday, April 01, 2013
REPORT NO: 0433

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 48 F MAX. 63 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

Bunker and Sons, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI performed site decon at HA37.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
WERS-011	4/1/13	4/1/13	4/1/13

20



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 2 of 2
Date: Monday, April 01, 2013
REPORT NO: 0433

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

 /Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

- QC/H&S FADL
- Equipment Utilization
- Test Data
- Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	4	1	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for day of equipment decon at HA 37, landfill maintenance, MOUT site MEC removal and Unit 10 DGM.	
0730- Go through CAR for the latest missed QA seed and work on QC dailies.	
0830- Set out on site visits. Head to HA 37 first where crew is washing off equipment and preparing everything to go off rent. Team 3 is in the area too and said they will be sorting small arms and move to demo prep so they should not be in the area to do other sorting which would cause the construction crew to depart the area. Went to Unit 10 next. DGM crew is working the north side of the containment area and moving along well. Go to MOUT site. Collected photos of Team 1 in a very steep grid but they are using the EM-61 and Bruce was onsite. Head up the back of HA 34 just to check the site. The rain gauge has 0.10" and the site looked good. There is grass growing but it is very sparse in some areas. The steep slope has more growth than I've ever seen. Steve got a call from Dan that there is a change in plans and his crew may have to move to HA38 if team 3 needs to start sorting today. Went back to HA 37 to inform crew. They area taking down the scaffolding to send back. Arrive at landfill where crew is compacting and pushing soil to winterize until we start the liner install. Drove perimeter road and over the cells and found no issues.	
1130- Return to office. Work on getting signatures to finalize the CAR. Brad will work on the CAP for this CAR.	
1230- Return to landfill to check progress and everything looks very good.	
1300- Lunch	
1330- Return to office. Bruce is in the field so I will take the CAR to him for a signature. Went to the ESL and found him.	
1430- Scan and email CAR to client and management.	
1500- Return to HA 37. I need to talk to Marc about stockpile sampling.	
1600- Return to office. Finish paperwork.	
1715- Depart site.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Rain/Cloudy/PC	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 4/1/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	4	1	2013
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on admin.			
0840 Move to the mount site - Check on UXO team 1 and QC ops. .			
1030 Completed QC on grids 45 / 46 / 47 / 48 / 49.			
1040 Moved to the ESL - Check on small arms op.			
1210 Moved to the office - Admin/Lunch.			
1330 Moved to the MOUT site - Check on UXO team 1.			
1410 Moved to the ESL - Check on small arms op.			
1600 Moved to the office.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Partly Cloudy H 66.		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce M'CO</i>		DATE: 4/1/2013	



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Tuesday, April 02, 2013
REPORT NO: 0434

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 45 F MAX. 58 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

Bunker and Sons, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI performed site decon at HA37. ITSI performed post remediation MEC removal at HA 38.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

16

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	4	2	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for the day of HA 37 and 38 site clean up, landfill O&M, MOUT site MEC removal, UXO sorting and Unit 10 DGM.	
0800- Set out site visits. Went to MOUT site first. I found UXO Team 1 down in a deep ravine. They have found an area with excessive 3.5" practice rockets and parts. They are going to 4' and still finding them. They have contacted Bruce and Brad & they know they are only going to 4'. I was there at 0835 and they have already filled 9 buckets. They are going through the soil and removing everything then will place the clean soil back in the excavation. I heard on the radio that another team was at HA 38 doing post remediation MEC Removal. I went there next. There is a construction crew cleaning up the site at the stockpile while the UXO team is in the back of the range. I went out to UXO team and collected photos of a dig. They found a rifle grenade which may be MPPEH but most likely is MD.	
1000- Back at office. Put together all the BRA paperwork to scan for Larry.	
1100- Having computer issues, called helpdesk.	
1215- Finally got computer resolved and get online and emails	
1230- Lunch	
1300- Return to site. Called helpdesk again and resolved Adobe issue so I can sign documents electronically. Work on BRA paperwork to get on a thumb drive so Audrey can send a set to Larry Friend and place on the portal.	
1400- Head to HA 37 to place proposed stockpile sample flags in the ground. USACE and I decided upon 3 locations. Paul will collect a surface sample and 6" sample to be archived at the lab and run only if the surface is >225 ppm.	
1500- Checked landfill and TTU and found no issues with either.	
1600- Back at office to finish paperwork.	
1700- Depart site.	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Fog/Cloudy/PC 45-58	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM 	DATE: 4/2/13



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Wednesday, April 03, 2013
REPORT NO: 0435

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 45 F MAX. 66 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

Bunker and Sons, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI performed site decon at HA37. ITSI performed post remediation MEC removal at HA 38.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

26

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

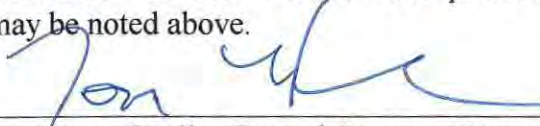
None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	4	3	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Preparatory meeting for demolition	
0730- Review and send out CAP for internal review.	
0800-- QC dailies	
0900- Head out on site visits. Start at the MOUT site where crew is now on the steep slope of the hillside. They are still finding lots of MD. Lanes are laid out and being swept using schonstedts and Whites. Went to HA 37 next where crew is putting out flag and doing reacquire in the A grids currently. Went to HA 38 next and crew is doing post remediation MEC removal and have only found MD so far.	
1200- Return to office. Spoke with Kevin in regards to resolving internal comments to the CAP. He will work with Brad on it.	
1230- Lunch	
1300- Return to site. Discuss upcoming preparatory meetings with Brad and Kevin. We need to schedule preps for the Blue line buffer and the post remediation MEC removal of HA 37. Even though we had a prep for it conditions have changed and we should have a meeting to discuss and document changes as well as familiarize the crew with procedures.	
1400- Going out with Jami and Kevin to locate, GPS and check for any biological issues with the latrines in Unit 21	
1430- Set out to Unit 21. We found 3 latrines which are hazards and do not have buildings around them. I used the GPS so we can make sure Cary has the locations for the base wide database.	
1615- Return to site. Give GPS unit to Chuck to download. Finish paperwork.	
1700- Depart site.	
Not used	
VISITORS ON SITE:	
Clinton Huckins	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Marc Edwards	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	
Fog/Cloudy/PC	IMPORTANT TELEPHONE CALLS:
45-66	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 4/3/13



Contract No. W912DY-10-0024
Work Order No. 1

K-1 WERS
Page 1 of 2
Date: Thursday, April 04, 2013
REPORT NO: 0436

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 51 F MAX. 66 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

Bunker and Sons, subcontractor to ITSI for soil hauling services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOUT site 100' buffer. ITSI performed DGM in Unit 10. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI performed site decon at HA37. ITSI performed post remediation MEC removal at HA 38.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

17

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

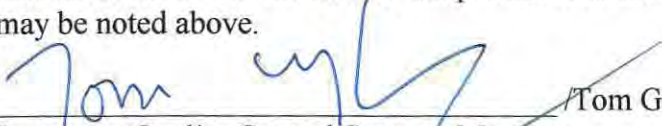
None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.



Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

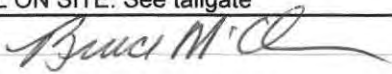
QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	4	4	2013
	No.			
	Sheet	1	Of	1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC / SUXOS	
0630 Safety and SUXOS Brief			
0700 Worked on Admin - Sent daily ops report.			
0800 Move to HA-37 - Scrap ops.			
1200 Lunch			
1430 Moved to the office - Drop off time sheets for UXO team 3.			
1530 Moved to HA-37.			
1600 Scrap ops complete - Sorted 22,520 lbs.			
1605 Moved to the office.			
1630 Teams returned from the MRA - Equipment and vehicle maintenance.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Cloudy AM Rain H 60.		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: 		DATE: 4/4/2013	

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 49 F MAX. 57 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the MOU site 100' buffer. ITSI performed reacquire at HA 37. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI performed post remediation MEC removal at HA 38.

Test or control activities:

Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.


_____/Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	4	8	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for the day of OUI2 landfill O&M, completion of MOUT site buffer, UXO sorting, reacquire at HA 37 and DGM QC of HA 38.	
0730- Work on sending notifications of Preparatory meetings for tomorrow. Work on packages too.	
0945- Preparatory packages are complete. Will make copies for tomorrow's meetings.	
1015- Set out on site visits. Go to HA 37 first. UXO team is sorting MD on the pad while the DGM crew is doing reacquire. Went to MOUT site next. Crew is in the grid where they missed the QA seed just to do a re-sweep and make sure nothing else was missed. They have not found anything. Went to OU2 landfill next where crew is exposing the TTU header pipe to take out any saddles which are holding water. Other two man crew is doing limbing and weed whacking.	
1300- Lunch	
1330- Back at office. Kevin needs to revise the FWV for the 100 foot buffer so I will wait to complete the second prep package.	
1400- Back at landfill. Crew is moving along well. We now have one 3 man crew working on the header because Dusty went home sick.	
*1500- Went to the OU2 treatment plant to talk to Mark Fisler. He confirmed that he had vandalism at the landfill on Saturday. Apparently he had a low point leak detector alarm go off and when he went to the vault he found it opened and the leak detector was stolen. Dan looked all around the landfill as did Steve and I and we found no signs of vandalism.	
*1600- Back at office. I will use the unsigned FWV to complete the preparatory package and make copies of both. Kevin is going to talk to Dave Eisen to make sure USACE is ok with using the unsigned FWV.	
1700- Depart site.	
VISITORS ON SITE: CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
WEATHER CONDITIONS: IMPORTANT TELEPHONE CALLS:	
Fog/Rain/Cloudy/PC/windy	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 4/8/13

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 43 F MAX. 62 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the Unit 4 100' buffer. ITSI performed reacquire at Unit 4. ITSI performed the operation and maintenance of the OU2 landfill including the realignment of the TTU header pipe. ITSI performed the operation and maintenance of the TTU. ITSI performed post remediation MEC removal at HA 37.

Test or control activities:

Preparatory meeting and Initial Phase Inspection for HA 37 Post Remediation MEC Removal.

Preparatory meeting and Initial Phase Inspection for Units \$, %a, 6 and 9 100 foot Buffer. Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

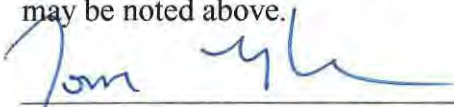
None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.



/Tom Ghigliotto

Contractor Quality Control Systems Manager

Attachments:QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	4	9	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- Set up for the day of TTU header pipe realignment, Units 4, 5A, 6 and 9 100 foot buffer MEC removal, Reacquire at Unit 4 and post remediation MEC removal at HA 37.	
0800- Conduct Preparatory meetings for Units 4, 5A, 6 and 9 100 foot buffer MEC removal and HA 37 post remediation MEC removal.	
0900- Talk with Jami regarding the habitat checklist for Units 4 and 6- Bart has requested any equipment going from 6 to 4 be deconned to avoid the potential of pampass grass cross contamination. SUXOS was informed and an email was sent.	
1000- Jami also requested that the flagging at the MOUT site be removed and I will do it when I do my final inspection.	
1030- Set out to landfill then Hertz to pick up a smaller bucket for the HA 37 crew.	
1230- Return to office to work on photo management.	
1430- Start to work on OU2 landfill liner installation QC Inspection and testing log.	
1500- Break to go get progress and photos of landfill crew. Steve said there were sections that had saddled one up to 3". They are repairing the line as they go to ensure there is fall to the condensate tank.	
1600- Return to office to continue to work on QC log for liner installation.	
1700-Depart site.	
<div style="font-size: 2em; color: blue; opacity: 0.5;">Not Used</div>	
VISITORS ON SITE:	
Clinton Huckins	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Marc Edwards	SPECIAL ORDERS AND IMPORTANT DECISIONS:
	* See Notes
WEATHER CONDITIONS:	
43-62	IMPORTANT TELEPHONE CALLS:
/Cloudy/PC/Windy	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 4/9/13

Contractor Quality Control Daily Report

LOCATION OF WORK: Fort Ord, California

WEATHER: (CLEAR) (FOG) (P.CLOUDY) (CLOUDY) (RAIN) (WINDY)

TEMPERATURE: MIN. 49 F MAX. 67 F

1. Contractor/Subcontractor and their area of responsibility:

Innovative Technical Solutions Inc. (ITSI), Prime Contractor

CB&I, subcontractor to ITSI for remediation and O&M services.

PAM Environmental, subcontractor to ITSI for Quality Control services.

DDA, subcontractor to ITSI for biological monitoring services.

2. Operating plant/equipment with hours worked, idle, or down for repair.

Thermal Treatment Unit (TTU) is operating this week. See weekly/monthly summaries sent via e-mail, also available by request.

3. Work performed today (Location/description/by whom).

ITSI performed MEC investigation in the Unit 4 100' buffer. ITSI performed reacquire at Unit 4. ITSI performed the operation and maintenance of the OU2 landfill. ITSI performed the operation and maintenance of the TTU. ITSI performed post remediation MEC removal at HA 37.

Test or control activities:

Final Inspection was performed for the MOUT site 100 foot buffer.
Follow up inspections were performed for all activities.

Corrective Action Requests Outstanding:

CAR	Date Issued	Action Completed	Date Closed
None			

4. Materials Received:

None.

5. Submittals reviewed:

None.

6. Off-site surveillance activities:

None.

7. Job safety evaluations:

None.

8. Instructions received and conflicts with plans or specifications, special occurrences:

None.

9. Contractor's verification statement:

CERTIFICATION: I certify that the above report is complete and correct and that I or my representative have inspected all work identified on this report performed by Shaw and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.

 /Tom Ghigliotto
Contractor Quality Control Systems Manager

Attachments:

QC/H&S FADL
Equipment Utilization
Test Data
Tailgate H&S log

FIELD ACTIVITY DAILY LOG

K1



Daily Log	Date:	4	24	13
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA	Work Order # 01
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,	
0630- TGSM	
0700- QC dailies	
0800- Head to HA 37. Crew is over excavating one hot spot in the former stockpile area. The excavation will be done using a backhoe and the GSA dump truck and will be a 10' X 10' X 6" deep by direction of the USACE. Soil will be hauled to the landfill and placed in the area to be capped. Lonnie is on site this week for routine 3 month O&M of the TTU.	
1030- Back at office. Found out our USACE safety inspection went very well. Work on QC dailies.	
1200- Safety training on the warehouse forklift.	
1300- Head back to landfill to check on lonnie at the TTU. He is just finishing greasing the second motor. He said he hasn't found any major issues. Biggest thing is the louver is froze on the eastern side of the flare. He talked to Dan and it will be repaired.	
1400- Back at office to write up finals for the MOUT site buffer and HA 38.	
1500- Get signatures from Huck and Marc to complete final inspections of the MOUT site and HA 38.	
1600- Email management.	
1700- Depart site.	
<div style="font-size: 2em; color: blue; opacity: 0.5;"> Nox used </div>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER
Clinton Huckins	SPECIAL ORDERS AND IMPORTANT DECISIONS:
Marc Edwards	* See Notes
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
PC/Clear 49-67	** See Notes
SHAW PERSONNEL ON SITE:	
SIGNATURE: Tom Ghigliotto/CQCSM	DATE: 4/24/13



FIELD ACTIVITY DAILY LOG

K1

Daily Log	Date:	4	24	2013
	No.			
	Sheet	1 Of		1

PROJECT NAME: FORT ORD, CA		Work Order Number: 01	
FIELD ACTIVITY SUBJECT: H&S			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS,		Subject: QC	
0630 Safety and SUXOS Brief			
0700 Worked on Admin.			
0750 Moved to Unit 4 - Check on UXO team 3.			
1050 Moved to HA-37 - Check on UXO team 1.			
1200 Moved to the office - Lunch/Admin.			
1320 Moved to Unit 4 - Check on UXO team 3.			
1610 Moved to the office - Admin.			
1645 Teams returned from the MRA.			
1710 Work complete for the day.			
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER	
SHAW's		SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Sunny H 69		IMPORTANT TELEPHONE CALLS:	
PERSONNEL ON SITE: See tailgate			
SIGNATURE: <i>Bruce Mc</i>		DATE: 4/24/2013	

Appendix D

USACE Form 948s

U.S. ARMY ENGINEER DISTRICT, SACRAMENTO



**ORDNANCE AND EXPLOSIVE
QUALITY ASSURANCE MEMO CESPCK FORM 948**

**TO: Innovative Technical Solutions
W912DY-10-D-0024**

DATE Mar 07, 2013

**Control Number:
030713**

**PROJECT NUMBER:
Task Order No. CM01**

**PROJECT LOCATION:
Former Fort Ord, CA
MOUT Site**

SUSPENSE:

SUBJECT ITEMS(S) (Check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Work Plan | <input checked="" type="checkbox"/> Quality Assurance |
| <input type="checkbox"/> Safety Violation | <input type="checkbox"/> Other |
| <input type="checkbox"/> Safety Comments | |

DESCRIPTION: Conducted subsurface clearance QA at MOUT Site on 29 grids this week. No failures, see attached list

Prompt correction or compliance with contract specifications is requested. A written response is required in the action taken block.

HUCKINS.CLINTON
JOHN.1071096765

Digitally signed by
HUCKINS.CLINTON.JOHN.1071096765
DN: c=US, o=U.S. Government, ou=DoD,
ou=PKI, ou=USA,
cn=HUCKINS.CLINTON.JOHN.1071096765
Date: 2013.03.14 13:53:54 -0700

**USACE Site Representative
Clinton J Huckins,
OE Safety Specialist**

**Bruce
McClain**

Digitally signed by Bruce McClain
DN: cn=Bruce McClain, o=ITSI
Gilbane, ou=UXOQCS,
email=bmccain@itsi.com, c=US
Date: 2013.03.25 09:16:03 -0700

**RECEIPT ACKNOWLEDGED
Contractors Representative**

ACTION TAKEN:

U.S. ARMY ENGINEER DISTRICT, SACRAMENTO



**ORDNANCE AND EXPLOSIVE
QUALITY ASSURANCE MEMO CESPCK FORM 948**

TO: Innovative Technical Solutions W912DY-10-D-0024	DATE Apr 5, 2013	Control Number: 040513
PROJECT NUMBER: Task Order No. CM01	PROJECT LOCATION: Former Fort Ord, CA MOUT Site	
SUSPENSE:		

SUBJECT ITEMS(S) (Check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Work Plan | <input checked="" type="checkbox"/> Quality Assurance |
| <input type="checkbox"/> Safety Violation | <input type="checkbox"/> Other |
| <input type="checkbox"/> Safety Comments | |

DESCRIPTION: Conducted subsurface clearance QA at MOUT Site on 61 grids this week. No failures, All seeds recovered. See attached list

Prompt correction or compliance with contract specifications is requested. A written response is required in the action taken block.

HUCKINS.CLINTON
Digitally signed by
HUCKINS.CLINTON.JOHN.1071096765
DN: c=US, o=U.S. Government, ou=DoD,
ou=PKI, ou=USA,
cn=HUCKINS.CLINTON.JOHN.1071096765
Date: 2013.04.09 13:43:27 -07'00'
.JOHN.1071096765

**Bruce
McClain**

Digitally signed by Bruce McClain
DN: cn=Bruce McClain, o=ITSI
Gilbane, ou=UXOQCS,
email=bmccclain@itsi.com, c=US
Date: 2013.04.09 15:58:47 -07'00'

**USACE Site Representative
Clinton J Huckins,
OE Safety Specialist**

**RECEIPT ACKNOWLEDGED
Contractors Representative**

ACTION TAKEN:

Appendix E



Explosives Accountability

Form M-11

EXPLOSIVES USAGE RECORD

Team Number: UXO-3 Date: 4-3-13

Team Leader: Nate Sanabia Project: Font Ord 07202.2001

EXPLOSIVES ISSUED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
None1, Roll, 2500ft	2	080C12W1	JEW
Perforators, 19g	28	4-11-12A	JEW
Detonating Cord (100gr/ft)	150	310C11G1	JEW
Detonator ØMS	2	12MA12X1	JEW
EXPLOSIVES EXPENDED			
Signature of Team Leader: 			
Item	Quantity	Lot Number	Checker's Initials
None1, Roll, 2500ft.	2	080C12W1	JEW
Perforators, 19g	28	4-11-12A	JEW
Detonating Cord (100gr/ft)	150	310C11G1	JEW
Detonator ØMS	2	12MA12X1	JEW
EXPLOSIVES RETURNED			
Signature of SUXOS:			
Item	Quantity	Lot Number	Checker's Initials
None			

Senior Bradley J Olson
UXO Supervisor

4-3-13
Date

Appendix F

*MOUT Site Buffer
Explosives Safety Submission*



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
US ARMY DEFENSE AMMUNITION CENTER
1 C TREE ROAD
MCALESTER OK 74501-9053

JMAC-ESM

20 December 2012

MEMORANDUM FOR US Army Corps of Engineers, Environmental and Munitions Center of Expertise, CEHNC-EMM, P.O. Box 1600, Huntsville, AL 35807-4301

SUBJECT: DDESB Approval, Explosives Safety Submission, Munitions and Explosives of Concern, Remedial Action, MOUT Site Buffer, Former Fort Ord, CA

1. References:

a. Memorandum, CEHNC-EMM, 3 December 2012, subject: Explosives Safety Submission (ESS), Munitions and Explosives of Concern (MEC) Remedial Action (RA) for Former Fort Ord, MOUT Site Buffer, CA, November 2012.

b. DoD 6055.09-M, Ammunition and Explosives Safety Standards, 29 Feb 08, administratively reissued August 4, 2010.

c. Memorandum, DDESB-PE, dated 20 December 2012, subject: DDESB Approval of Explosives Safety Submission, Remedial Action of Military Operations in Urban Terrain Site Buffer, Former Fort Ord, Monterey County, CA (Encl).

2. The subject Explosives Safety Submission, transmitted by reference 1.a, has been reviewed in accordance with reference 1.b. Reference 1.c provides Department of Defense Explosives Safety Board (DDESB) final approval. This approval will be made part of the administrative record for the site.

3. As required by DoD 6055.09-M, V7.E4.3.1.1.7, submit an after action report (AAR) to our office for review and forwarding to DDESB after this approved Removal Action is complete.

4. The POC is Charlotte Curtis, JMAC-ESM, DSN 956-8742, commercial (918) 420-8742, email charlotte.g.curtis.civ@mail.mil.

CURTIS.CHARLOTTE.
GRACE.1108719091
CHARLOTTE G. CURTIS
MEC Team Action Officer
Explosives Safety Knowledge, MEC and
Chemical Division
US Army Technical Center for Explosives
Safety

Digitally signed by
CURTIS.CHARLOTTE.GRACE.1108719091
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI,
ou=USA, cn=CURTIS.CHARLOTTE.GRACE.1108719091
Date: 2012.12.20 09:37:44 -0600

JMAC-ESM

SUBJECT: DDESB Approval, Explosives Safety Submission, Munitions and Explosives of Concern, Remedial Action, MOUT Site Buffer, Former Fort Ord, CA

CF (w/encl):

Office of the Director of Army Safety (DACS-SF/Mr. Patton and Mr. Walker), 223 23rd Street,
Crystal Plaza 5, Suite 980, Arlington, VA 22202

Office of the Deputy Assistant Secretary of the Army for Environment, Safety, and Occupational
Health, Special Assistant for Munitions, (DASA-DESOH/Mr. King), 110 Army Pentagon,
Washington, DC 20310-0110

U.S. Army Corps of Engineers (CESO/Ms Roberts), 20 Massachusetts Avenue, NW,
Washington, DC 20314-1000



**DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD
4800 MARK CENTER DRIVE, SUITE 16E12
ALEXANDRIA, VIRGINIA 22350-3606**

DEC 20 2012

DDESB-PE

MEMORANDUM FOR DIRECTOR, U.S. ARMY DEFENSE AMMUNITION CENTER
ATTENTION: JMAC-ESM

SUBJECT: DDESB Approval of Explosives Safety Submission, Remedial Action of Military Operations in Urban Terrain Site Buffer, Former Fort Ord, Monterey County, CA

- References:
- (a) DAC JMAC-ESM Memorandum of 3 December 2012, Subject: Request DDESB Approval, Explosives Safety Submission, Munitions and Explosives of Concern, Remedial Action, MOUT Site Buffer, Former Fort Ord, CA
 - (b) Email from Mr. Walt Zange (USACE), to Ms. Kristene Bigej (DDESB), dated 6 December 2012, Subject: RE: Fort Ord MOUT Site Buffer ESS
 - (c) DoD 6055.09-M, DoD Ammunition and Explosives Safety Standards, date varies by volume
 - (d) DDESB TP-15, Approved Protective Construction, Revision 3, May 2010

The Department of Defense Explosives Safety Board (DDESB) Staff has reviewed the subject explosives safety submission (ESS) forwarded by reference (a), as clarified by reference (b), against the requirements of reference (c). Based on the information provided, approval is granted for removal and treatment of material potentially presenting an explosive hazard (MPPEH) and munitions and explosives of concern (MEC) at Former Fort Ord, Monterey County, CA. This approval is based on the following:

- a. The efforts addressed in this ESS involve manual unintentional detonation operations (to include mechanized unintentional detonation operations employing anomaly avoidance) and intentional detonations supporting munitions response actions within Munitions Response Area (MRA) Military Operations in Urban Terrain (MOUT) Site Buffer.
- b. The intended future land use for the MRA MOUT Site Buffer is habitat reserve once it is transferred to the Bureau of Land Management.
- c. The munition with the greatest fragmentation distance (MGFD) for the MRA MOUT Site Buffer is the 81mm M43A1 Mortar; the minimum separation distance (MSD) for teams for manual unintentional detonation operations is 46 feet (ft) based on K40 of the 81mm M43A1B1 Mortar; the MSD for nonessential personnel from manual unintentional detonation operations is 227 ft based on the hazardous fragment distance of the 81mm M43A1B1 Mortar;

and the MSD for all personnel from intentional detonations is 1,579 ft based on the maximum fragment distance of the MGF. D.

d. Collection points and consolidated shots are authorized provided the Army ensures usage of reference (d), paragraph C6.2.7.5.

e. The use of sandbags and water mitigation systems is authorized as an engineering control for intentional detonations involving the MEC identified in reference (a) provided the Army ensures usage per reference (d), paragraph C6.2.7.5.

f. The use of the Miniature Open Front Barricade is authorized as an engineering control for unintentional detonation operations involving the MEC identified in reference (a) provided the Army ensures usage per reference (d), paragraph C6.2.7.5.

g. Demolition materials, per reference (a), will be stored in DDESB approved facilities.


h. Chemical agent identification set (CAIS) kits (i.e., K951/2, K953/4 and K955) that contain dilute chemical agents or industrial chemicals will be treated as a hazardous waste. If other CAIS, a munition with an unknown fill, or chemical warfare material is encountered, all work will cease pending Army assessment of the need to submit a Chemical Safety Submission.

i. 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.

j. MPPEH will be inspected and classified as material documented as safe prior to release to the public.

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 ESS must be submitted to DDESB for review and approval.

The point of contact for this action is Ms. Kristene Bigej, (571) 372-6705, DSN 372-6705, E-mail address: kristene.a.bigej.civ@mail.mil.


CURTIS M. BOWLING
Chairman
DDESB



Explosives Safety Submission

**MUNITIONS AND EXPLOSIVES OF CONCERN
NON TIME CRITICAL REMEDIAL ACTION**

MOUT SITE BUFFER

FORMER FORT ORD, CALIFORNIA

Worldwide Environmental Remediation Services Contract

Contract No. W912DY-10-D-0024

Task Order No. CM01

BRAC

NOVEMBER 2012

Prepared by ITSI Gilbane Company
for
U.S. ARMY CORPS OF ENGINEERS
Sacramento District

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Appendix B	Calculation Sheets

1.0 *Background*

1.1 *Site Location*

The former Fort Ord is located in northwestern Monterey County, California, approximately 80 miles south of San Francisco (see Figure 1). The Impact Area Munitions Response Area (MRA) is located within the Historical Impact Area in the southwestern portion of the former Fort Ord. This Explosive Safety Submission addresses two units within the Impact Area MRA. The Impact Area MRA consists of 6,560 acres of the 8,000 acre Historical Impact Area. This area was formerly referred to as the Multi-Range Area but is now referred to as the Impact Area MRA and is addressed as such herein. The Historical Impact Area is bounded by Eucalyptus Road to the north, Barloy Canyon to the east, South Boundary Road to the south, and General Jim Moore Road to the west (see Figure 2).

The Military Operations in Urban Terrain (MOUT) Site Buffer is located in the northeastern section of the Impact Area MRA and falls within the Munitions Response Site (MRS) – Bureau of Land Management (BLM). Figure 1 provides a general site layout of the MOUT Site and Buffer.

The overall scope of work in the areas addressed by this submission entails a technology-aided surface and subsurface munitions and explosives of concern (MEC) removal across approximately 22 acres of the MOUT Site Buffer. Surface and subsurface MEC removal will be performed using Schonstedt magnetometers.

A Land Disposal Site Plan (LDSP) (U.S. Department of the Army [Army], 1994) and seven LDSP Amendments have been approved for former Fort Ord to date. In addition, two Time Critical Removal Action Explosives Safety Submissions (ESSs), and eight ESSs for non Time Critical MEC remedial action have been submitted and approved for areas of the former Fort Ord. The LDSP, LDSP Amendments, and ESSs do not address the MOUT Site Buffer footprint, and do not overlap with this ESS. Permanent fuel breaks in close proximity to the MOUT Site Buffer are addressed in an ESS approved in November 2011.

This munitions response (MR) is intended as the final remedy for the MOUT Site Buffer. However, the approach presented addresses only the physical hazards to humans from MEC. The potential risks associated with munitions constituents are being addressed under the Basewide Range Assessment program (Shaw Environmental, Inc./MACTEC Engineering and Consulting, Inc. [MACTEC], 2006) and are covered under LDSP Amendment 6.

This work is being performed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

This ESS is being prepared in accordance with the U.S. Army Engineering and Support Center, Huntsville (USAESCH) Data Item Description WERS-003.01 Safety Submissions and Engineering Manual (EM) 385-1-97 (USACE, September 2008 and errata sheet 3, June 2009 and July 2009).

**Table 1-1
Munitions Response Areas**

Area	Total Acreage	Munitions Response Action	Institutional Controls
Impact Area MRA – MOUT Site Buffer	22 acres	Surface and Subsurface MEC removal.	Land Use Control Plan to be developed following Munitions Response (MR) Action.

1.2 Site Description

1.2.1 Terrain and Vegetation

The MOUT Site Buffer is composed of sandy soils in rolling terrain dominated by central maritime chaparral vegetation types. Habitat types occurring within the units are primarily central maritime chaparral, with some areas of grasslands, coastal scrub, and oak woodland. The terrain and vegetation will not hinder the proposed removal activities. Mechanical equipment will be used to cut vegetation to an initial height of approximately 18". Prior to this initial cut a visual survey of the area will be performed by Unexploded Ordnance (UXO) escorts to locate and mark any visible surface MEC items. The initial cut will be followed by a second survey of the area by Unexploded Ordnance (UXO) escorts to ensure any MEC items located on the surface are marked and avoided. Following the MEC survey, a second cut to a maximum height of 6" or less will be performed before starting any surface removal activities.

1.2.2 Soil Conditions

The near-surface geology of the units consists of Pleistocene-age dune deposits that are up to 250 feet thick. The dune deposits form the characteristic low rolling hills seen throughout the Impact Area MRA. It is noted that soil conditions are not expected to hinder the remediation.

1.3 Site History

The Impact Area MRA, which includes the MOUT Site Buffer, includes a large number of ranges that have various historical uses, designs, and characteristics. Over the years, various types of munitions have been used during training activities that may have impacted the MOUT

Site Buffer, including hand grenades, projectiles, rockets, mines, and small arms. Select ranges were used for small arms training activities only, while other ranges are characterized as multi-use. The firing ranges were located along the perimeter of the Historical Impact Area such that weapons firing was generally directed toward the center of the Historical Impact Area. Training activities at the Impact Area MRA ceased after the closure of Fort Ord in 1994.

The MOUT Site Buffer is in close proximity to, or contains portions of, the range fans for the MOUT Site (MRS-28), Mock Up Village/Combat in Cities (Range 75), and the MOUT Complex (Range 35). Table 2-1 lists the former ranges that occur within or in close proximity to the MOUT Site Buffer.

**Table 1-2
Ranges Associated with the MOUT Site Buffer**

Range	Military History and Training Activities
MOUT Site (MRS-28)	This site includes Impossible City, a mock city. Several Buildings within the city were live fire small arms sites. A tire house with sand-filled tires was constructed. Live small arms fire and use of high explosives was authorized. Thus, this area might have been used as an EOD area. The preliminary USA database dated October 2000 shows that many military munitions items, both MEC and munitions debris, were recovered.
Mock Up Village/Combat in Cities (Range 75)	Range was labeled as Mock up Village in 1940s. Mock up Village is labeled on 1947 7.5 min quadrangle photo map of Seaside. In the 1950s the area is labeled as Combat in Cities. This area was investigated as part of HA-35A. Reconnaissance complete. No Further Action.
MOUT Complex (Range 35)	This area is part of MRS-28.

1.4 Current and Future Land Use

The MOUT Site Buffer is currently designated for transfer to BLM as habitat reserve under the *Installation-Wide Multispecies Habitat Management Plan (HMP) for Former Fort Ord* (USACE, 1997), which describes special land restrictions and habitat management requirements within habitat reserve areas. Habitat reserve areas support special status plant and animal species that require implementation of mitigation measures during Army cleanup activities identified in the Habitat Management Plan to ensure compliance with the Endangered Species Act and to minimize potential adverse impacts to listed species. Based on information provided by BLM, the reuse of the area as a habitat reserve is anticipated to include a variety of activities including:

- Road and trail management and maintenance;
- Habitat enhancement, including prescribed burning;
- Fuel break construction and management;
- Use of administrative areas;
- Habitat monitoring and educational programs;

- Species-specific monitors and habitat enhancement; and
- Recreational access on established routes.

1.5 Project Area

The MOUT Site Buffer is a portion of Munitions Response Site – Bureau of Land Management (MRS-BLM). Much of the information described below was extracted from the *Final, Track 3 Record of Decision, Impact Area Munitions Response Area, Track 3 Munitions Response Site, Former Fort Ord, California* (Track 3 ROD) (Army, 2008), and the *Final Work Plan, Remedial Design/Remedial Action (RD/RA), Track 3 Impact Area Munitions Response Area, Former Fort Ord* (USACE, 2009).

1.5.1 General

A description of the project area is provided in Section 1.1 and shown in Figure 2. This ESS covers the surface and subsurface MR actions for the MOUT Site Buffer after which land use controls will be implemented. This remedy will achieve substantial risk reductions. The presence of munitions in the MOUT Site Buffer was evaluated in detail in the *Track 3 Remedial Investigation/Feasibility Study (RI/FS)* (MACTEC, 2007b), which resulted in the *Track 3 ROD* (Army, 2008), which selected an MR remedy. This ESS is for the implementation of the selected remedy in the MOUT Site Buffer.

1.5.2 Historical and Characterization Data Analysis

Previous investigations have been performed in close proximity to the MOUT Site Buffer. Additionally, MEC has been historically found in the vicinity of the MOUT Site Buffer as incidental finds or during site preparation activities such as vegetation cutting. These items are shown in Table 1-3 and on Figure 3.

1.5.3 Selected Munitions Response Actions

The selected MR action for the MOUT Site Buffer was designed to address current or potential explosive safety risks to human health and the environment from MEC. Based on many years of site experience, the presence of MEC in the MRA does not appear to be a concern in terms of explosive safety risks to ecological receptors. Potential human health and ecological risks related to any munitions constituent soil contamination from small arms and military munitions ranges are being addressed under the Basewide Range Assessment (Shaw Environmental Inc./MACTEC, 2006) program. The activities to be performed are summarized below:

- Conduct vegetation cutting within the MOUT Site Buffer. Grass and oak woodland areas will receive only the minimal amount of cutting required to facilitate technology-aided surface and subsurface MEC removal.

- Conduct manual (Schonstedt-assisted) surface and subsurface MEC removal within the MOUT Site Buffer. Surface and subsurface MEC removal will be conducted following completion of vegetation clearance.
- Implementation of Land Use Controls (not addressed in this ESS).

1.5.3.1 Land Use Controls

The property will not be transferred until MEC remedial actions have been completed. Prior to property transfer and during the implementation of the remedial action, the Army will provide MEC recognition and safety training as needed, provide UXO-Qualified personnel support for intrusive work or escort services as needed, weed abatement support, site security and access management (maintain gates, fences and signs). Site security measures include maintenance of the existing perimeter fence and monitoring for the evidence of trespassing; these activities will continue to be reported to the regulatory agencies as part of the MRS Security Program annual reports. Specific decisions about fences and the scope of post-transfer periodic inspections will be finalized after review of the remedial action report and consideration of information obtained during the remedial action. Detailed implementation procedures will be presented as part of the development of a Land Use Controls Plan and an amendment to the ESS will be submitted after the Land Use Controls Plan is finalized.

1.6 Reason for Munitions and Explosives of Concern

A discussion of the site history including the activities that led to MEC being present on the property is provided in Section 1.3.

2.0 Maps

The figures are included in Appendix A. Figure 1 shows the MOUT Site Buffer location within the Impact Area MRA at the Former Fort Ord. Figure 2 shows a map of the MOUT Site Buffer. Figure 3 shows MEC previously recovered within and in close proximity to the MOUT Site Buffer. Figure 4 show the quantity distance (Q-D) arcs that will be used during the MEC removal action and the associated Q-D arcs for intentional demolition activities at the MOUT Site Buffer.

3.0 Explosive Safety Quantity-Distance

3.1 Munition with Greatest Fragmentation Distance

The munition with the greatest fragmentation distance (MGFD) selected was the item with the greatest minimum separation distance (MSD)/exclusion zones (EZs) anticipated in the MOUT

Site Buffer. Figure 4 shows the Q-D arcs that will be used during the MEC removal action and the associated Q-D arcs for intentional demolition activities at the MOUT Site Buffer.

The MGF D selected for The MOUT Site Buffer is the 81 mm high explosive mortar, M43 series.

During the course of the MEC removal action, if MEC with a greater fragmentation distance is encountered, the MSD will be adjusted in accordance with Department of Defense Explosives Safety Board (DDESB) Technical Paper (TP) 16 “Methodologies for Calculating Primary Fragment Characteristics” (a copy of this document will be available on site). Q-D arcs will be adjusted accordingly and an amendment to this ESS will be submitted for approval.

**Table 3-1
Minimum Separation Distances**

Munitions	MSD/Exclusion Zones (ft) from Fragmentation Data Review Forms						
	For Unintentional Detonations ¹			For Intentional Detonations ¹			
	Team Separation Distance (K40)*	Hazardous Fragmentation Distance (HFD) (ft)	To Sides & Rear Using MOFB or OFB	Maximum Fragment Distance (MFD) without Engineering Controls (ft)	Using Sandbag Mitigation (ft)	Using Water Mitigation (ft)	Using Buried Explosion Module (BEM)*
MOUT Site Buffer							
Mortar, 81 mm, high explosive, M43A1	43	209	74^A	1579	200	200	NA
Mortar, 81 mm, high explosive, M43A1B1	46	227	74^A	1427	200	1.320	NA

Notes:

1 - See Appendix B for Fragmentation Data Review Forms.

^A MOFB - Based on HNC-ED-CS-S-98-8 Revision 1, March 2010

Miniature Open Front Barricade (MOFB)

Open Front Barricade (OFB)

*Columns not included in EM 385-1-97 errata sheet #3

The value in **bold** is the distances used for unintentional detonation. Intentional detonation distances will be based on the actual item recovered.

lbs = pounds

ft = feet or foot

mm = millimeters

3.2 Munitions and Explosives of Concern Area(s)

The MSDs identified by the Fragmentation Database Review Forms, April 2012 (DDESB) for the munitions anticipated in the MOUT Site Buffer are presented in Table 3-1. The outer boundaries of the MSD arcs for the MOUT Site Buffer are depicted on the Q-D map in Figure 4. The Hazardous Fragmentation Distance will be used as the MSD for all unintentional detonations. Engineering controls will be implemented during intentional detonations and will be based on the item found. Sandbag mitigation will only be used for items with munition specific calculations completed in accordance with the specific Fragmentation Data Review Form. See paragraph 7.3 for additional information on the use of this engineering control. All MSD restrictions will be applied during all MEC operations.

3.3 Demolition Explosives

3.3.1 Explosive Storage Magazines

An explosives storage magazine has been sited and approved by DDESB for explosive storage at Fort Ord. The location of the magazine is presented in LDSP Amendment 4, dated June 2007.

3.4 Planned or Established Demolition Areas

MEC recovered during the course of the removal action will be blown-in-place (BIP) or incorporated into consolidated shots within the removal grids.

3.5 Footprint Areas

3.5.1 Blown-in-Place

The MSD for BIP operations will be as shown in Table 3-1 as designated for intentional detonations. The greater distance of the maximum fragmentation distance or K328 will be used for all intentional detonations unless approved engineering controls are used to reduce that distance. The applicable MSD using engineering controls specified in the Fragmentation Data Review Forms determined using DDESB TP-16 will be implemented for mitigated intentional detonations.

3.5.2 Collection Points

Collection points are those areas within the MRS only used to temporarily accumulate MEC determined acceptable to move by the Senior Unexploded Ordnance Supervisor (SUXOS) and Unexploded Ordnance Safety Officer (UXOSO) pending destruction using consolidated shots. It is currently anticipated that destruction will be performed weekly or at less frequent intervals as dictated by need. This approach minimizes downtime for the UXO Teams, and allows for proper coordination with the clients and base support. MEC items at collection points must be laid out as shown in "Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites". The maximum NEW at a collection point will be limited such that

the K40 overpressure distance for the total NEW does not exceed the Hazardous Fragmentation Distance for the area. Consolidating multiple MEC is anticipated for this project. MEC items will be properly guarded as needed until demolition operations can be conducted.

3.5.3 *In-Grid Consolidated Shots*

If determined acceptable to move by the SUXOS and UXOSO, consolidating multiple MEC is anticipated for this project. USAESCH publication “Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites,” dated March 2000 will be used and a copy of this report will be available on site. The NEW for a consolidated shot will be limited such that the K328 overpressure distance for the total NEW (including donor charges) does not exceed the MSD for the intentional detonation.

3.6 *Maximum Credible Event*

It is not anticipated that any explosive soil as defined in DoD 6055.9-M, V7.E4.4 will be encountered. Any suspected explosive contaminated soil will be sampled. If explosive soil is confirmed it will be isolated in a manner protective of the environment and a remediation plan will be designed by contractor personnel in consultation with the Range Support Center (RSC). The MSD will be calculated using DoD 6055.09-M V7.E4.5.8.3.7.4.2.

4.0 *Types of Munitions and Explosives of Concern*

Table 1-3 lists the MEC items recovered during previous actions within and adjacent to the MOUT Site Buffer in addition to the maximum depth at which these items were identified.

**Table 4-1
Recovered MEC Items and Maximum Penetration Depths
MOUT Site Buffer**

Items	Numbers of MEC Items Recovered from MOUT Site Buffer	Maximum Depth of MEC Items Recovered (inches)	Maximum Geophysical Detection Depth (Inches bgs)
Fuze, grenade, hand, M204 series	1	0	NA
Grenade, hand, practice, M69	1	0	28
Grenade, hand, practice, M21	1	0	24
Grenade, hand, smoke, M48	1	0	NA
Grenade, hand, fragmentation, M67	3	0	28
Grenade, hand, fragmentation, MKII	1	0	24
Projectile, 40mm, high explosive, M381	1	0	16
Projectile, 40mm, practice, M407A1	2	0	16
Projectile, 40mm, parachute, star, M662	1	1	16
Projectile, 81mm, mortar, high explosive, M43 series	1	0	35

Items	Numbers of MEC Items Recovered from MOUT Site Buffer	Maximum Depth of MEC Items Recovered (inches)	Maximum Geophysical Detection Depth (Inches bgs)
Signal, illumination, ground, M125 series	1	0	17

5.0 *Start Date*

The projected start date for this project is on or around 1 January 2013.

6.0 *Munitions and Explosives of Concern Migration*

Winters in the vicinity of the project area are generally mild, and only reach freezing temperatures on a very short-term basis, if at all. Therefore there is no concern about migration due to frost heave in the areas where removal to depth of detection is implemented.

7.0 *Detection Equipment and Response Techniques*

7.1 *Removal Depth*

The work specified in this MOUT Site Buffer ESS includes vegetation clearance, and technology-aided surface and subsurface MEC removal in an approximate area of 22 acres of the MOUT Site Buffer (see discussion in Section 1.5.3). Subsurface MEC removal will be conducted in all accessible areas. Any areas deemed to be inaccessible to subsurface MEC removal will be documented.

7.2 *Detection Equipment*

A combination of one or more of the following detection technologies will be used at this site.

7.2.1 *Analog Mag and Dig using Flux-Gate Magnetic Gradiometers*

- Schonstedt Ga52-CX

7.2.2 *Analog Mag and Dig using Electromagnetic Induction*

- Whites/MineLab metals detectors

7.2.3 *Digital Geophysical Mapping Using Time-Domain Electromagnetic Induction.*

- Geonics EM61 Mk2A

7.3 Sweep Procedures

The personnel operating detection equipment will demonstrate proficiency with the instruments before site work begins. The site will be divided into grids for administrative and MEC/munitions debris tracking purposes. The search lanes will be optimized based on site conditions and terrain. Search lanes will be delineated with line, flags, marking paint and/or marking tape.

7.4 Exclusion Zone Control

Prior to initiation of on-site MEC operations, all nonessential personnel will be removed to a location outside the EZ, which will be based on the MSD (see Table 3-1) and will remain outside the EZ until all MEC operations are completed. While preparing MEC for detonation, the UXOSO will ensure that the number of personnel on site is kept to the minimum required to safely accomplish the disposal mission. Once MEC operations commence, positive control of the EZ will be maintained and only essential personnel will be allowed inside the EZ. The Q-D arcs for the work areas in the MOUT Site Buffer are shown in Figure 4. The roads that are within the EZs are Army roads with relatively low traffic densities. During MEC operations, non-essential personnel will be prevented from entering the EZ on these roads by a combination of road closures and the use of spotters who will notify the UXO personnel to stop work when a vehicle approaches the EZ boundary. When an inhabited building is within the EZ of the day's work area, the occupants will be provided protection by evacuation and/or the use of engineering controls.

7.5 Intrusive Investigation

Only UXO qualified personnel and UXO Tech Is under supervision of UXO qualified personnel will perform investigation and excavation of anomalies. Earth moving machinery (EMM) may be used to assist in removing the overburden within 12 inches to the side of the anomaly followed by use of trowels to remove the remaining overburden.

7.6 Quality Control and Quality Assurance

A quality program provides procedures for controlling and measuring the quality of all work performed during all site activities. All quality control (QC) and quality assurance (QA) activities will be performed and documented in accordance with all applicable technical/professional standards; the approved Work Plan and MEC-UFP-QAPP.

8.0 Disposition Techniques

8.1 Demolition Operations

All MEC items requiring detonation will be marked pending blow-in-place or consolidated disposal. For consolidated shots, the procedures in Section 3.5.3 will be followed. All explosive operations will be supervised by the SUXOS and coordinated with the USACE on-site Ordnance and Explosives Safety Specialist. All explosive operations will follow the procedures outlined in TM 60A-1-1-31 and the EM 385-1-97, “Safety and Health Requirements Manual,” 15 September 2008 with five Errata Sheets dated 1 June 2009, 1 June 2009, 13 July 2009, 16 July 2009, and 21 April 2010, respectively. Demolition operations will be performed on an as-needed basis. Items will be properly guarded as needed until demolition operations can be conducted. Authority to initiate demolition operations will rest solely with the SUXOS. The UXOSO will be responsible for ensuring all personnel have been accounted for and that the area is secure prior to authorizing the detonation of explosive charges. The SUXOS will ensure that the local Police and Fire Department are notified of an impending demolition shot.

8.2 Explosive Storage, Accountability, and Transportation

Explosives will be stored at the Fort Ord explosive storage location. Total control of explosives will be maintained while the explosives are on site. All vehicles transporting explosives will be properly inspected, equipped, and placarded prior to the loading of explosives onto the vehicle, and DD Form 626 “Motor Vehicle Inspection” completed.

8.3 Engineering Controls

Engineering controls for demolition will be used as delineated in the “Use of Sand Bags for Mitigation of Fragmentation and Blast Effects due to Intentional Detonation of Munitions,” HNC-ED-CS-S 98-7 and Amendment 1, dated August 1998 and February 2011, respectively; the DDESB memo “Clarifications Regarding Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions,” dated November 29, 2010; or the “Use of Water for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions”, HNC-ED-CS-S-00-3, dated September 2000. Sandbag mitigation will only be used for items with munition specific calculations completed in accordance with the specific Fragmentation Data Review Form. In addition, jet perforators will be used in accordance with “Safety Advisory: Use of Jet Performator During Intentional Detonation while Using Sand Bag Mitigation for Engineering Controls” (USACE, November, 2011). A copy of HNC-ED-CS-S-98-7 and HNC-ED-CS-S-00-3 and the safety advisory will be available on site if these engineering controls are to be used.

8.4 Scrap Procedures

8.4.1 Inspection and Certification

Material potentially presenting an explosive hazard (MPPEH) procedures will be in accordance with DoDI 4140.62 and EM1110-1-4009.

All MPPEH will be assessed and its explosives safety status determined and documented prior to transfer within the U.S. Department of Defense or release from U.S. Department of Defense control. Prior to release to the public, MPPEH will be documented by authorized and technically qualified personnel as Material Documented as Safe after a 100% inspection and an independent 100% re-inspection to determine that it is safe from an explosives safety perspective.

8.5 Alternative Disposal Techniques

No off-site destruction of recovered MEC is anticipated for this MEC removal action. All detonations will occur within the project area. No other disposal techniques are anticipated for this MEC removal action.

9.0 Environmental, Ecological and Cultural Considerations

The MOUT site buffer is within the Natural Resource Management Area which is designated for transfer to BLM as undeveloped habitat reserve under the HMP (USACE, 1997). The HMP describes special land restrictions and habitat management requirements within habitat reserve areas. Habitat reserve areas support special status plant and animal species protected under the Endangered Species Act that require implementation of mitigation measures identified in the HMP to minimize potential adverse impacts to listed species. As described above in Section 1.2, the site consists primarily of central maritime chaparral (CMC), with some areas of grasslands, coastal scrub, and oak woodland.

CMC is a HMP-protected habitat and contains numerous species listed as protected in the HMP. Baseline studies conducted in 2011 identified the presence of two HMP annual plant species, sand gilia (*Gilia tenuiflora* ssp. *arenaria*) and Monterey spineflower (*Chorizanthe pungens* var. *pungens*), within the MOUT site buffer (Tetra Tech, Inc., 2012). No Yadon's piperia (*Piperia yadonii*) has been identified within the site; however, this species has been observed less than 0.5 mile from the site and has the potential to occur in the CMC habitat. Two HMP wildlife species may occur within the MOUT site buffer, black legless lizard (*Anniella pulchra* ssp. *nigra*) and California tiger salamander (CTS; *Ambystoma californiense*). Two ponds known to support CTS breeding are present within 0.02 mile of the site.

Mitigation measures to reduce impacts to protected species are taken from the HMP (USACE, 1997) and three Biological Opinions provided by the U.S. Fish and Wildlife Service to address

Army clean-up activities (U.S. Fish and Wildlife Service, 1999, 2002, and 2005). Mitigation and other environmental protection measures that shall be applied during this project are summarized here:

- Work shall be restricted to the smallest area possible to limit unnecessary disturbance of habitat.
- Use of existing roads shall be used wherever possible and use of vehicles off roads shall be minimized to the greatest extent feasible. Placement of all access roads, staging areas, and other appurtenant facilities will attempt to avoid areas containing HMP plant and wildlife species and maritime chaparral vegetation.
- Populations of Monterey spineflower and sand gilia shall be avoided to the greatest extent feasible. If populations of Yadon's piperia or other HMP annual species are identified during MEC removal, these populations shall also be avoided to the greatest extent feasible.
- Employees shall attend a biological and natural resource training conducted by a staff biologist prior to work at the site. Trainings shall include information on the rare, threatened, and endangered species on the site, including a description of the species, their protected status, and a list of measures to be implemented to avoid and reduce impacts to these species and their habitat.
- All encounters of CTS and black legless lizard shall be reported to the staff biologist immediately. All encounters shall be documented, locations recorded using GPS, and the animals relocated by the staff biologist to appropriate habitat, using the correct handling techniques. Reports shall be submitted to the Army for each encounter

The work site shall be monitored for erosion control issues. If erosion problems occur as a result of the work, appropriate erosion control methods shall be employed.

Cultural considerations have been accounted for in the HMP.

10.0 Technical Support

10.1 Military Support

No recovered chemical warfare materiel (RCWM) is suspected at this site. However, if a munition with an unknown filler is found, or if a MEC item cannot be positively identified, the on-site USACE project team will notify the local point of contact (POC) as designated in the workplan. The local POC will contact and facilitate Explosive Ordnance Disposal response. The local POC will contact 20th SUPCOM CBRNE Emergency Operations Center at 410-436-6200. If the item is RCWM or has an unknown liquid filler, the on-site USACE project team will notify the Chemical Warfare Design Center at USAESCH.

10.2 Contractor

All on-site Contractor UXO personnel will meet the training and minimum experience required by DDESB TP-18, *Minimum Qualifications for Unexploded Ordnance (UXO) Technicians and Personnel* (DDESB, 2004b).

11.0 Residual Risk Management

11.1 Land Use Controls

Following completion of all MR work, the Army will evaluate the work completed against planned reuse activities and the suitability of selected Land Use Controls. The Army will include the results of this evaluation in a remedial action completion report that it provides to U.S. Environmental Protection Agency and Department of Toxic Substances Control. This report is an Federal Facility Agreement primary document; as such, selected Land Use Controls may be modified, when appropriate, with the approval of the regulatory agencies. Specific decisions about fences and the scope of post-transfer periodic inspections will be finalized after review of the report and consideration of information obtained during the remedial action. Detailed implementation procedures will be presented as part of the development of a Land Use Controls Plan and an amendment to the ESS will be submitted after the Land Use Controls Plan is finalized.

11.2 Long-Term Management

Recurring reviews will be conducted every five years after implementation of the selected MR actions. This effort will be performed to determine if the MR actions continue to be protective of human health, safety and the environment. Recurring reviews will also provide an opportunity to assess the applicability of new technology for addressing previous technical impracticability determinations. The review will evaluate specific factors that may impact the continued effectiveness of the response. These factors may include such things as changes in physical conditions at the MOUT Site Buffer or changes in public accessibility. If no changes have taken place, the areas will continue to be monitored at the specified intervals.

12.0 Safety Education Program

Site-wide Land Use Controls including a UXO Safety Education Program were selected for the MOUT Site Buffer. These are discussed in further detail in Section 1.5.3.1. The Fort Ord Community Relations Program and Site Security Program both have UXO Safety Education Programs. The Community Relations Program offers UXO Safety awareness training to schools located in close proximity to the former Fort Ord. The Site Security Program describes UXO

awareness training that is available to contractors conducting any ground intrusive operations on the former Fort Ord.

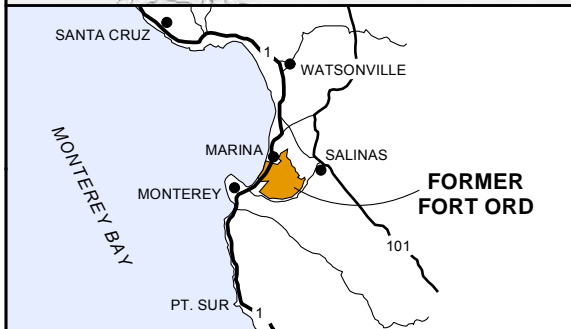
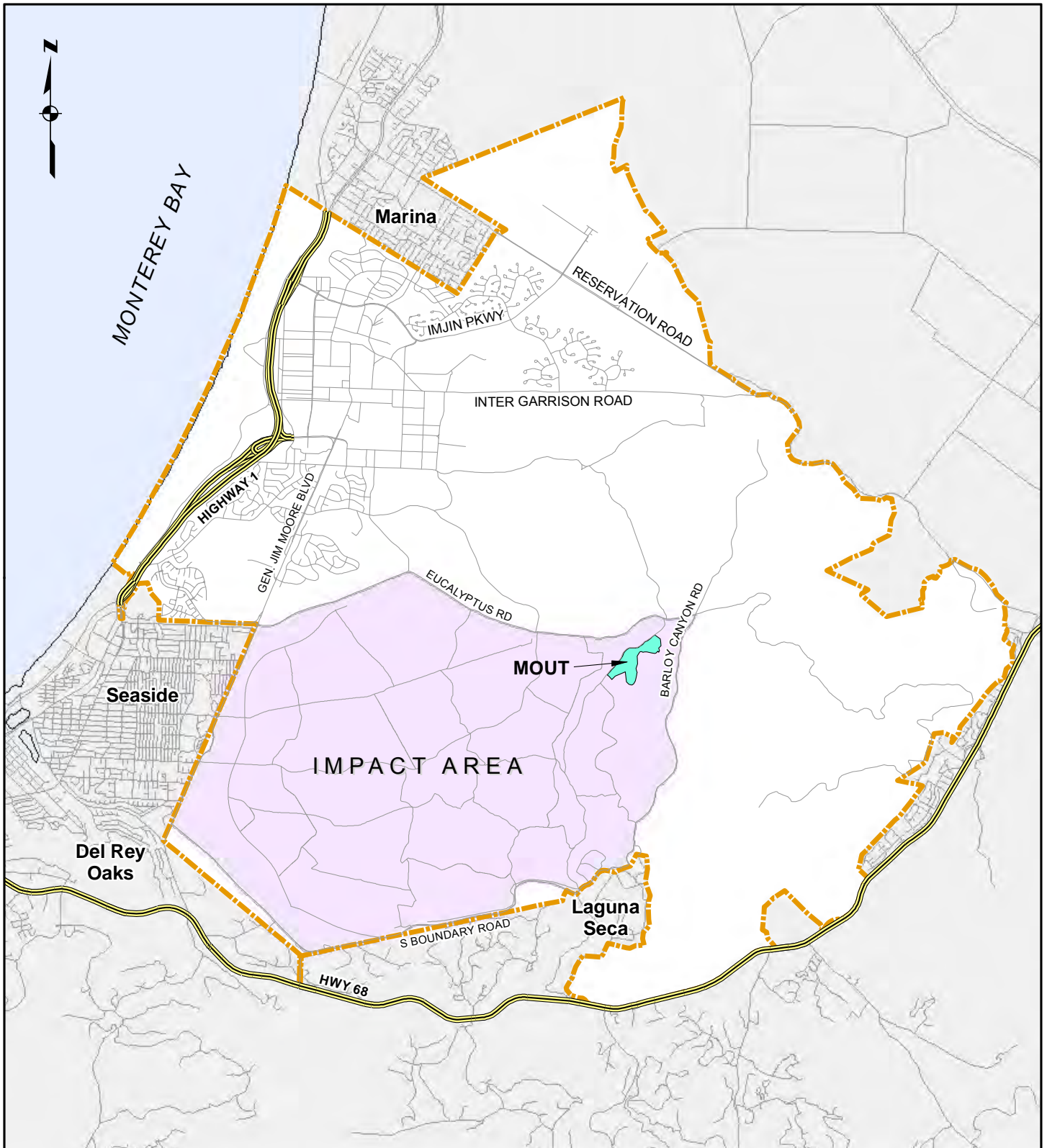
13.0 Stakeholder Involvement

Stakeholder involvement has been solicited throughout the remedy selection process. This has included public meetings and notification. Public concerns pertaining to the recommended action for the MOUT Site Buffer were addressed at these meetings and in the responsiveness summary included with the *Track 3 ROD* (Army, 2008). The California Department of Toxic Substances Control and the U.S. Environmental Protection Agency have been actively involved in remedy selection process and concurred with the selected remedy. All the requirements for public involvement associated with the remedy selection under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 have been met.

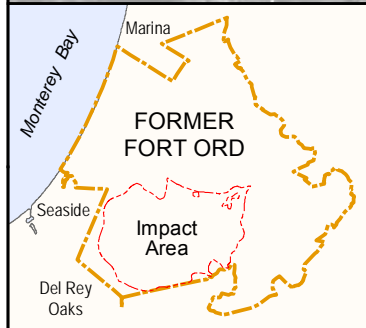
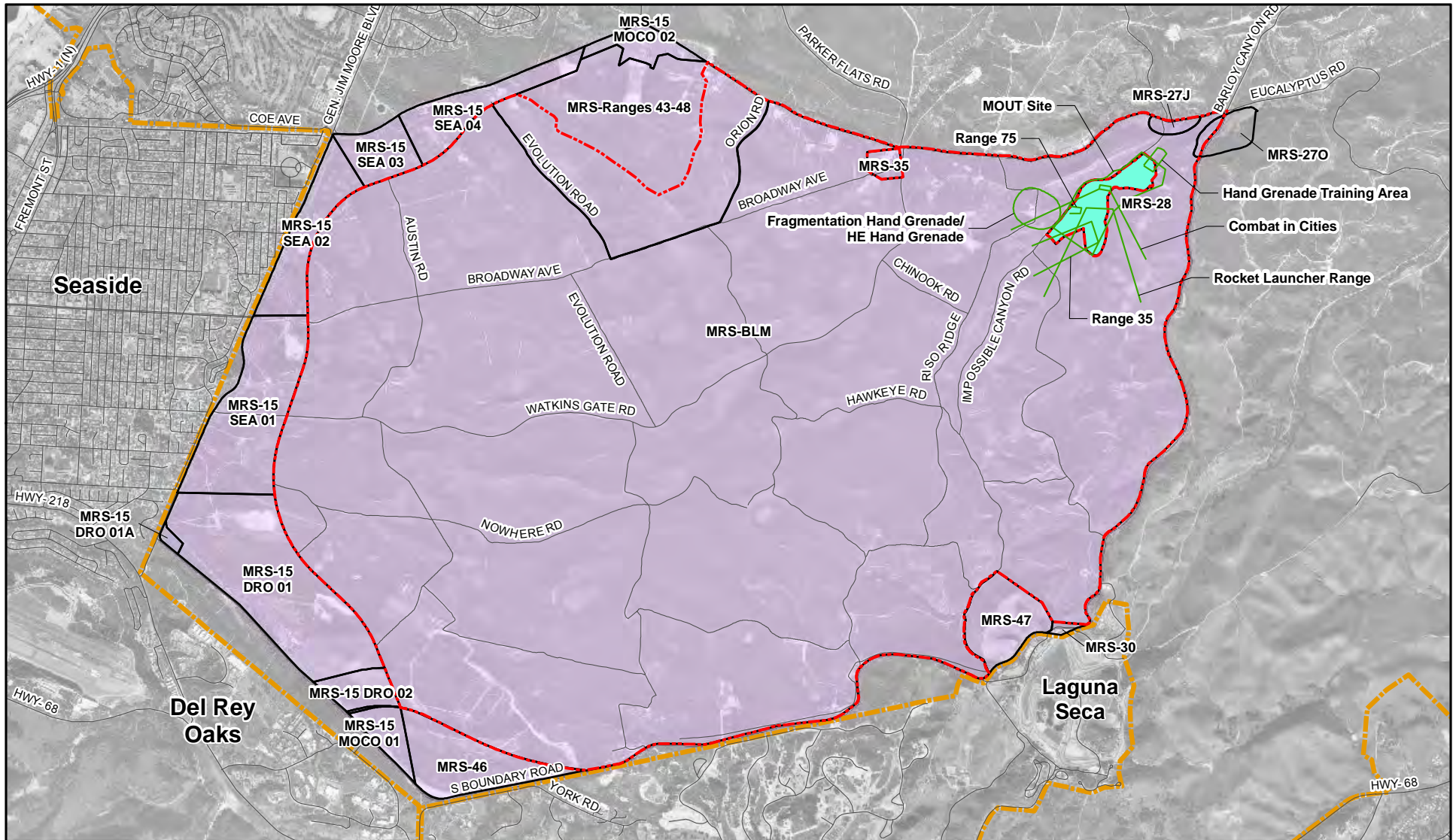
14.0 Contingencies

No contingencies have been identified for the MOUT Site Buffer removal action. However, if changes are identified, they will be addressed by amendments to this ESS.

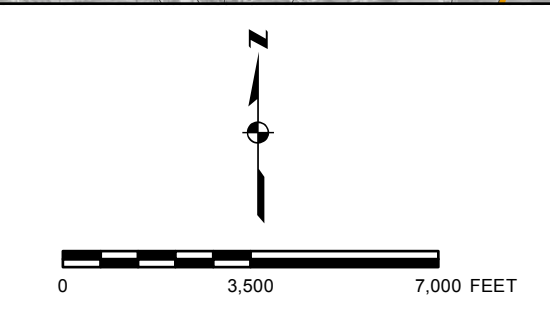
Appendix A
Figures



U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 1	IMPACT AREA LOCATION MAP SHOWING FORMER FORT ORD	
DATE 8/22/2012	PROJECT NUMBER 141234	FILE NAME SEE FOOTER



- Ranges
- MOUT
- Munitions Response Site
- Impact Area MRA
- Historical Impact Area
- Former Fort Ord Boundary

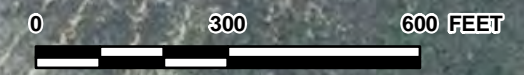


U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 2	LOCATION MAP MOUT	
ITSI Gilbane	Shaw	
DATE 8/22/2012	PROJECT NUMBER 141234	FILE NAME SEE FOOTER

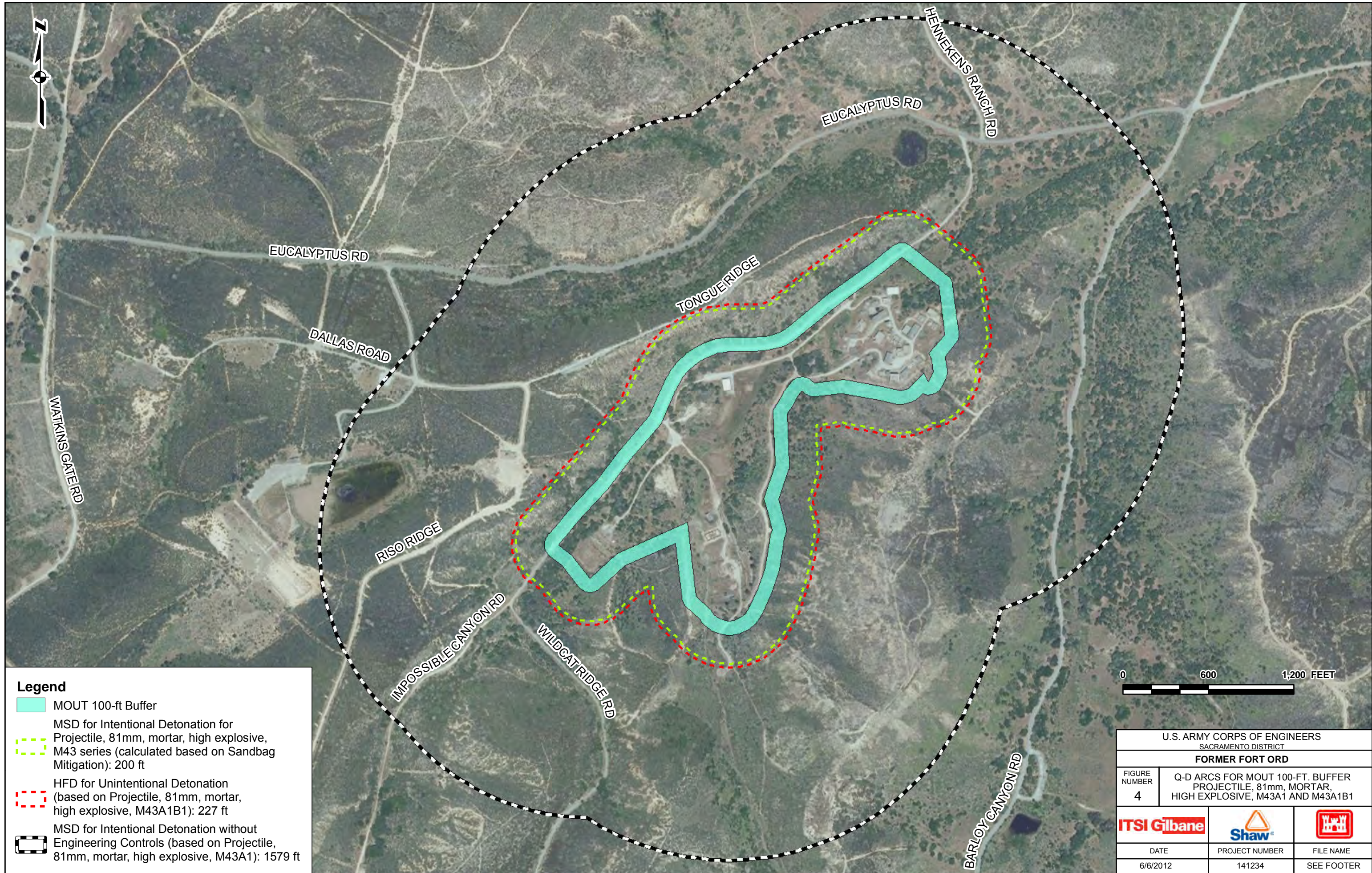


Legend

- MOUT 100-ft Buffer
- Previous MEC Found**
- Fuze, grenade, hand, M204 series
- Grenade, hand, fragmentation, M67
- Grenade, hand, fragmentation, MK II
- Grenade, hand, practice, M21
- Grenade, hand, practice, M69
- Grenade, hand, smoke, M48
- Projectile, 40mm, high explosive, M381
- Projectile, 40mm, parachute, star, M662
- Projectile, 40mm, practice, M407A1
- Projectile, 81mm, mortar, high explosive, M43 series
- Signal, illumination, ground, M125 series

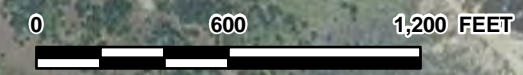


U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER	PREVIOUS MEC FOUND MOUT 100-FT. BUFFER	
3		
DATE	PROJECT NUMBER	FILE NAME
6/6/2012	141234	SEE FOOTER



Legend

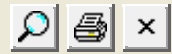
- MOUT 100-ft Buffer
- MSD for Intentional Detonation for Projectile, 81mm, mortar, high explosive, M43 series (calculated based on Sandbag Mitigation): 200 ft
- HFD for Unintentional Detonation (based on Projectile, 81mm, mortar, high explosive, M43A1B1): 227 ft
- MSD for Intentional Detonation without Engineering Controls (based on Projectile, 81mm, mortar, high explosive, M43A1): 1579 ft



U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER	Q-D ARCS FOR MOUT 100-FT. BUFFER PROJECTILE, 81mm, MORTAR, HIGH EXPLOSIVE, M43A1 AND M43A1B1	
4		
DATE	PROJECT NUMBER	FILE NAME
6/6/2012	141234	SEE FOOTER

Appendix B
Calculation Sheets

Fragmentation Data Review Form



Database Revision Date 4/2/2012

Category:

Munition:

Case Material:

Fragmentation Method:

Secondary Database Category:

Munition Case Classification:

DODIC:

Date Record Created:

Record Created By:

Last Date Record Updated:

Individual Last Updated Record:

Date Record Retired:

Munition Information and Fragmentation Characteristics

Explosive Type:

Explosive Weight (lb):

Diameter (in):

Cylindrical Case Weight (lb):

Maximum Fragment Weight (Intentional) (lb):

Design Fragment Weight (95% Unintentional) (lb):

Critical Fragment Velocity (fps):

Theoretical Calculated Fragment Distances

HFD [Hazardous Fragment Distance: distance to no more than 1 hazardous fragment per 600 square feet] (ft):

MFD-H [Maximum Fragment Distance, Horizontal] (ft):

MFD-V [Maximum Fragment Distance, Vertical] (ft):

Overpressure Distances

TNT Equivalent (Pressure):

TNT Equivalent Weight - Pressure (lbs):

Unbarricaded Intraline Distance (3.5 psi), K18 Distance:

Public Traffic Route Distance (2.3 psi); K24 Distance:

Inhabited Building Distance (1.2 psi), K40 Distance:

Intentional MSD (0.0655 psi), K328 Distance:

Note: Per V5.E3.2.2.1 of DoD 6055.09-M the minimum sited K328 distance may be no smaller than 200 ft.

Sandbag and Water Mitigation Options

TNT Equivalent (Impulse):

TNT Equivalent Weight - Impulse (lbs):

Kinetic Energy 10^6 (lb-ft²/s²):

Single Sandbag Mitigation

Required Wall & Roof Thickness (in):

Expected Max. Throw Distance (ft):

Minimum Separation Distance (ft):

Double Sandbag Mitigation

Required Wall & Roof Thickness (in):

Expected Max. Throw Distance (ft):

Minimum Separation Distance (ft):

Water Mitigation

Minimum Separation Distance (ft):

Water Containment System:

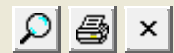
Note: Use Sandbag and Water Mitigation in accordance with all applicable documents and guidance. If a donor charge larger than 32 grams is utilized, the above mitigation options are no longer applicable. Subject matter experts may be contacted to develop site specific mitigation options.

Minimum Thickness to Prevent Perforation

	Intentional	Unintentional
4000 psi Concrete (Prevent Spall):	<input type="text" value="6.61"/>	<input type="text" value="3.98"/>
Mild Steel:	<input type="text" value="1.27"/>	<input type="text" value="0.77"/>
Hard Steel:	<input type="text" value="1.04"/>	<input type="text" value="0.63"/>
Aluminum:	<input type="text" value="2.59"/>	<input type="text" value="1.60"/>
LEXAN:	<input type="text" value="6.62"/>	<input type="text" value="5.05"/>
Plexi-glass:	<input type="text" value="4.99"/>	<input type="text" value="3.49"/>
Bullet Resist Glass:	<input type="text" value="4.22"/>	<input type="text" value="2.87"/>

Item Notes

Fragmentation Data Review Form



Database Revision Date 4/2/2012

Category:

Munition:

Case Material:

Fragmentation Method:

Secondary Database Category:

Munition Case Classification:

DODIC:

Date Record Created:

Record Created By:

Last Date Record Updated:

Individual Last Updated Record:

Date Record Retired:

Munition Information and Fragmentation Characteristics

Explosive Type:

Explosive Weight (lb):

Diameter (in):

Cylindrical Case Weight (lb):

Maximum Fragment Weight (Intentional) (lb):

Design Fragment Weight (95% Unintentional) (lb):

Critical Fragment Velocity (fps):

Theoretical Calculated Fragment Distances

HFD [Hazardous Fragment Distance: distance to no more than 1 hazardous fragment per 600 square feet] (ft):

MFD-H [Maximum Fragment Distance, Horizontal] (ft):

MFD-V [Maximum Fragment Distance, Vertical] (ft):

Overpressure Distances

TNT Equivalent (Pressure):

TNT Equivalent Weight - Pressure (lbs):

Unbarricaded Intraline Distance (3.5 psi), K18 Distance:

Public Traffic Route Distance (2.3 psi); K24 Distance:

Inhabited Building Distance (1.2 psi), K40 Distance:

Intentional MSD (0.0655 psi), K328 Distance:

Note: Per V5.E3.2.2.1 of DoD 6055.09-M the minimum sited K328 distance may be no smaller than 200 ft.

Sandbag and Water Mitigation Options

TNT Equivalent (Impulse):

TNT Equivalent Weight - Impulse (lbs):

Kinetic Energy 10^6 (lb-ft²/s²):

Single Sandbag Mitigation

Required Wall & Roof Thickness (in):

Expected Max. Throw Distance (ft):

Minimum Separation Distance (ft):

Double Sandbag Mitigation

Required Wall & Roof Thickness (in):

Expected Max. Throw Distance (ft):

Minimum Separation Distance (ft):

Water Mitigation

Minimum Separation Distance (ft):

Water Containment System:

Note: Use Sandbag and Water Mitigation in accordance with all applicable documents and guidance. If a donor charge larger than 32 grams is utilized, the above mitigation options are no longer applicable. Subject matter experts may be contacted to develop site specific mitigation options.

Minimum Thickness to Prevent Perforation

	Intentional	Unintentional
4000 psi Concrete (Prevent Spall):	<input type="text" value="6.62"/>	<input type="text" value="3.98"/>
Mild Steel:	<input type="text" value="1.24"/>	<input type="text" value="0.77"/>
Hard Steel:	<input type="text" value="1.02"/>	<input type="text" value="0.63"/>
Aluminum:	<input type="text" value="2.56"/>	<input type="text" value="1.60"/>
LEXAN:	<input type="text" value="6.55"/>	<input type="text" value="5.05"/>
Plexi-glass:	<input type="text" value="4.93"/>	<input type="text" value="3.49"/>
Bullet Resist Glass:	<input type="text" value="4.21"/>	<input type="text" value="2.87"/>

Item Notes

Appendix G

Responses to Comments

RESPONSES TO COMMENTS

Document: Draft, MOUT Site Buffer Munitions and Explosives of Concern ,
Remedial Action Technical Information Paper,
Former Fort Ord, California

Commenting Organization: Department of Toxic Substances Control

Name: Ed Walker

Date of Comments: 02/24/14

Comment 1

The TIP provides a sufficient description of the work accomplished to meet the remedial action objectives. Section 7.2 titled MEC Item Description and Distribution states "The observed distribution of munitions and explosives of concern (MEC) throughout the MOUT Site Buffer does not indicate the presence of a heavily impacted range or ranges within the MOUT Site Buffer." Based on the data presented in the TIP several of the grids showed relatively high concentrations of munitions debris (MD) and MEC when compared to the buffer grids on average. While MEC tended to be found more frequently in grids with higher MD concentrations MEC is found in low MD concentration grids as well. While the data collected during the remedial activity does not suggest the MOUT site is as heavily impacted as other portions of the impact area, the data does suggest the area is a range where MEC was used and is suspected to be present. DTSC does not agree with the sentence "The observed distribution of MEC throughout the MOUT Site Buffer does not indicate the presence of a heavily impacted range or ranges within the MOUT Site Buffer," and recommends it be removed from the TIP.

Response to Comment

The sentence "The observed distribution of MEC throughout the MOUT Site Buffer does not indicate the presence of a heavily impacted range or ranges within the MOUT Site Buffer," has been removed. The grids along the southwestern edge of the MOUT Site Buffer exhibiting greater than 100 pounds of MD per grid as shown on Figure 5 are in an extremely steep area. Based on observations by field teams during subsurface MEC removal activities, the MD in these grids did not appear to have occurred as a result of range activities, but appear to have been placed in these grids as a form of erosion control.

RESPONSES TO COMMENTS

Document: Draft, MOUT Site Buffer Munitions and Explosives of Concern , Remedial Action Technical Information Paper, Former Fort Ord, California

Commenting Organization: EPA

Name: Lewis Mitani

Date of Comments: 01/14/14

General Comment 1

The Draft Military Operations in Urban Terrain (MOUT) Site Buffer Munitions and Explosives of Concern (MEC) Remedial Action Technical Information Paper (hereinafter referred to as the "Draft MOUT MEC RA TIP") notes that a significant portion of the northwestern portion of the buffer is covered by the asphalt of Impossible Canyon Road. It further indicates that the remedial action did not address the potential for MEC to be present under the surface of this asphalt. Action should be taken by the Army to ensure that any maintenance of the asphalt roadway involving intrusive activities under the asphalt include appropriate precautions to avoid contact with MEC that may be present.

Response to Comment

As noted in Section 2.5.6 2 of the Final Non-Burn Areas SSWP, subsurface MEC removal activities were not planned for asphalted areas. If intrusive activities to include maintenance are required on Impossible Canyon Road in the future, UXO construction support will be provided per the Track 3 Record of Decision.

General Comment 2

Appendix C, Daily Quality Control (QC), Safety, and Senior Unexploded Ordnance Supervisor (SUXOS) Forms, to the Draft MOUT MEC RA TIP, contains 220 pages of the aforementioned documents, but the majority of the information contained therein refers to unrelated activities and remedial operations in process at other Former Fort Ord sites. This extraneous information makes these documents difficult to relate to activities at the MOUT Buffer Site. Please review Appendix C and provide a process for either removing the unrelated information or for highlighting the information related to the MOUT Buffer Site Remedial Action.

RESPONSES TO COMMENTS

Response to Comment

The Field Activity Daily Logs included in Appendix C correlate to the actual days when MOUT Site Buffer field work addressed in the TIP occurred. These forms are submitted as a group to USACE as one daily project deliverable. While the Contract Quality Control Site Manager (CQCSM), UXO Safety, and Senior UXO Supervisor complete the forms daily, they may or may not include reference to MOUT Site Buffer field work on the same day. Appendix C has been reviewed and updated to eliminate reports that do not address MOUT Site Buffer work and to ensure they appear in chronological order.

Specific Comment 1

Section 2.4, Regulatory Status, Page 8: The first paragraph of this section states that, "After 1975, the 7th Infantry Division was based at Fort Ord." While this statement that the division was present in 1975 is correct, the official U.S. Army History notes that the 7th Infantry Division was "Activated 21 October 1974 at Fort Ord, California." Please correct the cited statement to reflect the presence of portions of the division at Fort Ord in 1974. Also, please correct this statement in Section 2.5, Site Features and History of Military Munitions Use, and at any other locations where it appears in the Draft MOUT MEC RA TIP and its appendices.

Response to Comment

The text in each section will be revised to indicate that the 7th Infantry Division was activated in 1974 at Fort Ord.

Specific Comment 2

Section 7.2, MEC Item Description and Distribution, Page 18: This section discusses two pits of buried MEC items (discarded military munitions) recovered during the remedial action. The last sentence of the section notes that, "One pit contained nine M228 practice hand grenade fuzes, and the other pit contained 78 M1 flamethrower ignition cylinders." The number of M228 practice hand grenade fuzes appears to be the total of these items found throughout the site and not just those found in the burial pit. Figures 5 and 6 and Table 7 show that the burial pit in grid MOUT86 contained seven of these fuzes and two additional fuzes were found in grids MOUT21 and MOUT84. Please review the cited section and figures and correct them as necessary to make them consistent.

RESPONSES TO COMMENTS

In addition, this section states that, "The observed distribution of MEC throughout the MOUT Site Buffer does not indicate the presence of a heavily impacted range or ranges within the MOUT Site Buffer." The construction of this sentence could result in an interpretation that there were no ranges present in the MOUT Site Buffer. The conclusion that no "heavily impacted range" is present in the site is supported by the removal action results. However, the results do not necessarily indicate that no ranges of any type are present in the MOUT Site Buffer. Please revise the cited statement to preclude the noted misinterpretation.

Response to Comment

Section 7.2 will be revised to indicate that one pit contained seven M228 practice hand grenade fuzes. Additionally, the reference in the second section of the comment regarding the indication of the presence of a heavily impacted range or ranges will be removed in its entirety.

Appendix H

Responses to Comments

RESPONSES TO COMMENTS

Document: Draft, MRS-BLM Unit 28 Munitions and Explosives of Concern Remedial Action Report, Former Fort Ord, California, May 2018

Commenting Organization: United States Environmental Protection Agency (EPA)

Name: Maeve Clancy

Date of Comments: July 5, 2018

General Comment 1:

The Draft MRS BLM Unit 28 Munitions and Explosives of Concern (MEC) Remedial Action Report, Former Fort Ord, California, dated May 2018 (hereinafter be referred to as the "D MRS BLM Unit 28 MEC RAR"), uses multiple titles for the document. The forwarding memorandum identifies the document as the "Draft MRS-BLM Unit 28 Munitions and Explosives of Concern, Remedial Action Report, Former Fort Ord, California." However, the document attached for review is also identified as the "Draft Final MRS BLM Unit 28 Munitions and Explosives of Concern (MEC) Remedial Action Report, Former Fort Ord, California" on the document title page. Please correct this discrepancy on the succeeding versions of the document.

Response to General Comment 1:

Succeeding versions of the document will be consistent with regard to titles.

General Comment 2:

The D MRS BLM Unit 28 MEC RAR contains a list on Figure 6 (Location of UXO with Sensitive Fuzes) of "MEC Items Encountered/Removed" in Unit 28. Included in this list is "Cartridge, 40mm, high explosive, M383." By definition, cartridges are not UXO as they have not been fired, although they are MEC. They should be classed as discarded military munitions (DMM). This is also true for the cartridges noted in Table 4, MEC Items Found During Surface Removal, and Table 6, MEC Recovered During Remedial Action, which are labeled as UXO instead of DMM.

The fact that some of the recovered cartridges may have been cycled through the firing weapon does not make them UXO. In the interest of safety, it may be reasoned that these items should be treated as UXO from a hazard point of view, but the items should still be classed as DMM and not as UXO per the definitions of the two terms as provided in sections 101(e)(5) and 2710(e)(2) of Title 10, United States Code. A similar allowance is made for munitions ejected (i.e., kickouts) from open burn/open detonation activities by the U.S. Army Technical Center for Explosives Safety (USATCES). Their chart entitled "Military Munitions-Related Terms - How do

RESPONSES TO COMMENTS

they apply to specific types of material?" labels these items DMM, but includes a footnote suggesting that they be handled as UXO from a safety perspective.

Please review the cited figure and tables and correct them as noted above. Also, please correct the title of the figure (i.e., change "UXO" to read "MEC") to match the title of the listing provided in the legend. Include a footnote to the figure that identifies the cited cartridges as DMM but suggests that they be handled as UXO from a safety viewpoint. In addition, please correct all other locations throughout the D MRS BLM Unit 28 MEC RAR where Cartridge, 40mm, high explosive, M383, is listed as UXO instead of DMM.

Response to General Comment 2:

Tables, figures and the document have been modified to indicate Cartridge, 40mm, high explosive, M383, are DMM and not UXO. For safety considerations, these 40mm items were handled as UXO.

General Comment 3:

The areas where the surface clearing and geophysical mapping were not conducted due to accessibility/safety issues generally did not have a significant number of MEC located in the vicinity. The inaccessibility of these areas indicates that few persons will attempt to enter them; and this, combined with the low MEC distribution in the general vicinity of these areas, favors a low potential for encounters. However, in the future, the Army should consider the need for specific ICs [institutional controls] for these areas, and other Track 3 areas where surface clearance and geophysical mapping were not conducted (increased signage, inspections after rain events, etc.).

Response to General Comment 3:

The selected remedy includes land use controls (LUCs) that apply to the Track 3 Impact Area MRA as a whole. These LUCs include access management measures. As described in *Final Work Plan Remedial Design (RD)/ Remedial Action (RA), Track 3 Impact Area MRA, MEC Removal, Former Fort Ord, California* (Administrative Record number: OE-0660K) and its draft update (Administrative Record number: OE-0929), at the completion of all remedial actions in the Impact Area MRA, the Army will evaluate the work completed against planned reuse activities and the suitability of the selected LUCs. The selected LUCs may be modified, when appropriate, with the approval of the regulatory agencies.

Specific Comment 1:

Section 1.3 Project Personnel and Subcontractors, Page 3: This section's referral to a specific document reads, "Technical Paper 18, Minimum Qualifications for Personnel

RESPONSES TO COMMENTS

Conducting Munitions and Explosives of Concern Related Activities (Department of Defense Explosives Safety Board [DDESB], 2015)." The correct date for the latest version of the document cited is 1 September 2016. Please correct this date here and in Section 12, References.

Response to Specific Comment 1:

As noted in Section 1.3, the 2015 version Technical Paper 18 was in effect at the time the work was conducted. The Reference Section identifies the 2015 version. A note has been added to the reference section: "The 2015 version was the controlling document at the time the work was performed. The current, 2016 publication, was subsequently issued by DDESB."

Specific Comment 2:

Section 5.1, Technology-Aided Surface MEC Removal, Page 15: The second sentence in this section reads, "Technology-aided surface MEC removal in the remainder of Unit 28 tarted April 2016 and was completed in May 2017." The word "tarted" appears to be incorrect and should read "started." Please make this correction.

Response to Specific Comment 2:

The correction has been made.

Specific Comment 3:

Table 2, Ranges Associated with Unit 28, Page unnumbered: The Military History and Training Activities column of the Range 39-MOUT Complex row of the table makes reference to the use of "HE fragments grenades" at that range complex. The items should be listed as "fragmentation hand grenades." Please make this correction.

Response to Specific Comment 3:

The correction has been made as requested. The information in Table 2 is based on a summary table in Basewide Range Assessment (BRA) report (BW-2300L). A footnote has been added to Table 2 to identify the BRA report as the source of the information in Table 2.

RESPONSES TO COMMENTS

Document: Draft, MRS-BLM Unit 28 Munitions and Explosives of Concern Remedial Action Report, Former Fort Ord, California, May 31 2018

Commenting Organization: Department of Toxic Substances Control (DTSC)

Name: Vlado Arsov

Date of Comments: July 9, 2018

Specific Comment 1:

Document page 38, Chapters 7.2, 7.2.1, and Appendix D: “7.2 Quality Assurance. QA is conducted by the USACE Ordnance and Explosives Safety Specialist (OESS) and the USACE QA Geophysicist.

7.2.1 Analog Quality Assurance. USACE Surface Removal Quality Assurance Documentation is provided in Appendix D. All completed surface removal grids passed QA surveys and were accepted by USACE.”

Please include a short summary of the QA process and findings similar to Quality Control process in 7.1, 7.1.1 and 7.1.2.

Please provide Appendix D and its significance. Could you give a short explanation of what Appendix D, USACE Surface Removal Quality Assurance Documentation data is representing?

Response to Specific Comment 1:

The document has been updated with complete Appendix D.

Section 7.2.1 has been revised as follows: USACE Surface Removal Quality Assurance Documentation is provided in [Appendix D](#). This appendix includes a table documenting when work grids in Unit 28 were subjected to surface removal quality assurance surveys. The USACE OESS independently conducted analog survey of at least 10% of each completed surface removal grid. All completed surface removal grids passed QA surveys and were accepted by USACE.

RESPONSES TO COMMENTS

Specific Comment 2:

Document page 31, Chapter 11: “Short term recommendations for the area within Unit 28 where MEC items with sensitive fuzes were removed (the southern third of Unit 28) are as follows:

- Areas where MEC with sensitive fuzes were located will be monitored with *enhanced procedures* during annual surface area monitoring.”

Please describe the “enhanced procedures.” Please include any staff, technology or methods involved in these procedures.

Response to Specific Comment 2:

Enhanced monitoring procedures involve observing more than 10 percent of the visible surface area within 100 feet of the location of UXO with sensitive fuzes that were previously removed. The procedure is described in reports of annual surface monitoring (the most recent report is for 2017, Administrative Record number: OE-0847H).