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NAS CECIL FIELD
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LETTER REGARDING U S EPA REGION VI ADDITIONAL COMMENTS ON SITE 15 NON
TIME CRITICAL REMOVAL ACTION MEMORANDUM NAS CECIL FIELD FL
6/4/2012
U S EPA REGION IV

**NAS Cecil Field
OU5, Site 15
EPA Additional Comments on the Site 15 Non-Time Critical Removal Action
Memorandum, and the RTC for the TCRA Memdorandum**

From: Debbie Vaughn-Wright [<mailto:Vaughn-Wright.Debbie@epamail.epa.gov>]

Sent: Monday, June 04, 2012 2:30 PM

To: Klink, Linda

Cc: Sanford, Art F CTR NAVFACHQ, BRAC PMO; Grabka, David; Davidson, Mark E CIV NAVFACHQ, BRAC PMO; Jonnet, Mark; Coffman, Michelle; Simcik, Robert; Martin, Stacin CIV NAVFAC LANT, EV

Subject: Re: Site 15 draft NTCRA for review, Cecil Field JM09

Everyone:

I have gone over the revisions and the responses. Just a few points still remain.

- #3 comment response. Typo "to indicate that 40 CFR 266.2.2" Should be 266.202
- #5 comment response. Typo "... to the end of Section 11.A.4" should be "to the end of Section 11.A.3"
- #6 Comment Response was not complete and did not really address the concern. Please add the following sentence at the end of Section 11.A.4 "Lead contamination may still be present in some soils at Site 15, though not in sufficient quantities to pose a risk to the light recreational user."
- #20 Comment. Why didn't you simply use the example language given? Recommend removing the first sentence and first 2 bullets and replace with the first paragraph of the sample provided. The second paragraph of the example provided has already been added to the section.

(See attached file: 060112_Site15_NTCRA_Action_Memo_EPA edits.pdf)

Please feel free to call me if you have any questions or if the suggested edits are not clear.

Thank you,

Deborah Vaughn-Wright

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Date: 06/01/2012 12:13 PM

Subject: Site 15 draft NTCRA for review, Cecil Field JM09

Hi, all...

Attached for your review are the Non-Time Critical Removal Action (NTCRA) Action Memorandum and the associated comment response letter addressing the previous round of comments on the TCRA. This submittal is electronic only.

As you know from our May 15, 2012 teleconference, May 17, 2012 BCT meeting, and comments received from USEPA/USEPA Legal, the attached document is "new" (Rev. 0), considering the requested change from TCRA to NTCRA.

Upon receiving and addressing any remaining issues, the document will be finalized.

Thanks and enjoy the weekend.

(See attached file: 053012_RTC EPA Legal Comments on Draft Action Memo for MEC at Cecil Field Site 15.pdf)(See attached file: 060112_Site15_NTCRA_Action_Memo.pdf)

Comprehensive Long-term Environmental Action Navy

CONTRACT NUMBER N62470-08-D-1001



Rev. 0
06/12

**Draft
Action Memorandum
for
Non-Time Critical Removal Action
for
Operable Unit 5, Site 15
Blue 10 Ordnance Disposal Area**

**Naval Air Station Cecil Field
Jacksonville, Florida**

Contract Task Order JM09

June 2012



2155 Eagle Drive

North Charleston, South Carolina 29406

**DRAFT
ACTION MEMORANDUM
FOR NON-TIME CRITICAL REMOVAL ACTION
FOR
OPERABLE UNIT 5, SITE 15 - BLUE 10 ORDNANCE DISPOSAL AREA**

AT

**NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

**Submitted to:
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406**

**Submitted by:
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**CONTRACT NUMBER N62470-08-D-1001
CONTRACT TASK ORDER JM09**

June 2012

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ACTION MEMORANDUM
FOR NON-TIME CRITICAL REMOVAL ACTION
for
OPERABLE UNIT 5, SITE 15 - BLUE 10 ORDNANCE DISPOSAL AREA

This Action Memorandum documents the non-time critical removal action to be conducted under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 40 Code of Federal Regulations (CFR) 300.415, for munitions removal at Operable Unit 5, Site 15 – Blue 10 Ordnance Disposal Area at the former Naval Air Station Cecil Field, Jacksonville, Florida.

APPROVED: _____

DATE: _____

Mark Davidson
BRAC Environmental Coordinator
Naval Facilities Engineering Command Southeast

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NUMBER

- 1 General Location Map
- 2 General Site Arrangement
- 3 Removal Action Area

ATTACHMENT 2 - TABLES

NUMBER

- 1 Location-Specific ARARs and TBCs
- 2 Action-Specific ARARs and TBCs

ACRONYM LIST

ARAR	Applicable or Relevant and Appropriate Requirement
BCT	Base Realignment and Closure Cleanup Team
bgs	Below ground surface
BIP	Blow-In-Place
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSM	Conceptual Site Model
DDESB	Department of Defense Explosives Safety Board
DGM	Digital geophysical mapping
DMM	Discarded military munitions
DoD	Department of Defense
EE/CA	Engineering Evaluation/Cost Analysis
EM	Engineer Manual
EP	Engineer Pamphlet
FDEP	Florida Department of Environmental Protection
FFA	Federal Facility Agreement
FS	Feasibility study
GPS	Global positioning system
HA	Hazard assessment
HE	High explosive
HTRW	Hazardous, Toxic, and Radioactive Waste
IRP	Installation Restoration Program
JEDC	Jacksonville Economic Development Commission
LUC	Land use control
MC	Munitions constituents
MD	Munitions debris
MDAS	Material documented as safe
MDEH	Material documented as an explosive hazard
MEC	Munitions and explosives of concern
mm	Millimeter
MMRP	Military Munitions Response Program
MPPEH	Material potentially presenting an explosive hazard
MRP	Munitions Response Program
MRS	Munitions Response Site

NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAVSEA	Naval Sea Systems Command
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NERP	Navy Environmental Restoration Program
NOSSA	Naval Ordnance Safety and Security Activity
NOSSAINST	Naval Ordnance Safety and Security Activity Instruction
NPL	National Priorities List
NPW	Net present worth
NTCRA	Non-time critical removal action
O&M	Operation and maintenance
OE	Ordnance and Explosives
OP	Operations Pamphlet
OU	Operable unit
PA	Preliminary assessment
PAH	Polynuclear aromatic hydrocarbon
PMO	Program Management Office
RAB	Restoration Advisory Board
RAO	Remedial action objective
RBC	Risk-based concentration
RCRA	Resource Conservation and Recovery Act
RI	Remedial investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SE	Southeast
SI	Site inspection
SSC	Species of Special Concern
TBC	To be considered
TCLP	Toxicity Characteristic Leaching Procedure
TP	Technical Paper
TRPH	Total recoverable petroleum hydrocarbons
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UXO	Unexploded ordnance
YWWA	Yellow Water Weapons Area

I. PURPOSE

This Action Memorandum documents the non-time critical removal action (NTCRA) for munitions removal at Operable Unit (OU) 5, Site 15 – Blue 10 Ordnance Disposal Area at the former Naval Air Station (NAS) Cecil Field in Jacksonville, Florida. This Action Memorandum has been prepared in accordance with the remedial program requirements defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, the Superfund Amendments and Reauthorization Act of 1986 (SARA), the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), United States Environmental Protection Agency (USEPA) Superfund Removal Guidance for Preparing Action Memoranda (USEPA, 2009), Navy Environmental Restoration Program (NERP) Manual (2006), and Navy Munitions Response Program (MRP) Guidance (2005). This Action Memorandum serves as the decision document to conduct the removal action at Site 15 to remove MEC/MPPEH.

The objectives of the non-time critical removal action for munitions at Site 15 are as follows:

- Prevent and/or minimize the direct contact threat associated with munitions and explosives of concern (MEC)/material potentially presenting an explosive hazard (MPPEH) remaining on the ground surface and in the shallow subsurface.
- Ensure that Site 15 is safe for the specified land use.
- Minimize the impact of site activities on wetlands, threatened and endangered species, and other natural resources at Site 15.

These objectives will be accomplished during the NTCRA by removing surface and shallow subsurface MEC/MPPEH, munitions-related items, and metallic non-munitions debris within the former ordnance disposal area and along accessways at Site 15. Further, site surveys will be conducted prior to beginning the NTCRA to determine if any endangered or threatened species or Florida Species of Special Concern (SSC) are present at this site. Wetlands have been identified at Site 15; an inspection/survey will be conducted to verify previously surveyed wetland boundaries prior to beginning the NTCRA. Any suspect MEC or MPPEH encountered during removal activities will either be secured and treated in place with Blow-In-Place (BIP) operations or, if safe to transport, transported to a predetermined on-site detonation area prior to detonation.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

The following sections provide a brief description of the site and establish the conditions for the NTCRA; identify the physical location of the site; define site characteristics; identify conditions that may result in a release or threatened release into the environment of a hazardous substance, pollutant, or contaminant at the site; and define the National Priorities List (NPL) status of former NAS Cecil Field.

1. Removal Site Evaluation

The NTCRA described in this document addresses munitions removal at the Site 15 Munitions Response Site (MRS). In the 1980s, environmental investigations were initiated that included soil, groundwater, sediment, and surface water sampling. These investigations showed that Site 15 soil was contaminated with polynuclear aromatic hydrocarbons (PAHs), metals (arsenic and lead), and total recoverable petroleum hydrocarbons (TRPH). A Record of Decision (ROD) to address the chemical contamination was signed in 2008, and a remedial action was conducted in 2008 and 2009 to remove contaminated soil with concentrations of contaminants in excess of cleanup goals from 17 excavation areas. Chemical contamination at Site 15 has been addressed through the remedy (Tetra Tech, 2009).

An MEC Preliminary Assessment (PA)/Site Inspection (SI) (CH2MHill, 2007) indicated that there was potential for contact with MEC during the planned excavation and removal of contaminated soil (2008/2009 remedial activities). Therefore, because historical activities at Site 15 included munitions operations, a munitions survey was conducted for safety purposes in and around the planned soil excavation areas to address any MEC hazards. MEC and material documented as safe (MDAS) were located during the pre-excavation munitions survey and were removed from excavation areas before soil excavation operations commenced. In 2010, an MEC Remedial Investigation (RI) (Tetra Tech, 2011a) was conducted, and in 2011, a Supplemental MEC RI (Tetra Tech, 2011b) was conducted. Based on the results of these investigations, MEC/MPPEH potentially present at Site 15 are a concern, and the exposure pathway for potential human and ecological receptors is direct contact with munitions-related items in site media. A Feasibility Study (FS) was conducted to develop and evaluate response action alternatives, which was finalized in June 2012 (Tetra Tech, 2012).

2. Physical Location

NAS Cecil Field is located 14 miles southwest of Jacksonville, Florida. The majority of Cecil Field is located within Duval County, and the southernmost part of the facility is located in Clay County. Site 15 - Blue 10 Ordnance Disposal Area is located in the southwestern section of the former Yellow Water

Weapons Area (YWWA) of former NAS Cecil Field (Figure 1). The site is relatively flat. Figure 2 presents the general site arrangement of Site 15.

3. Site Characteristics

From the early 1940s to the mid-1950s, Site 15 was used as a 55-acre skeet and trap range occupying 1,000 feet by 2,400 feet. Munitions used at these ranges (skeet and lead shot) would not be expected to penetrate the ground surface. Ordnance was disposed of at Site 15 from the mid-1960s through 1977, and the resulting footprint of the site expanded to 85 acres. Disposal consisted of burning ordnance materials in a large metal burn chamber and static firing of rockets, so theoretical penetration depths do not apply. The majority of ordnance disposed of at the site was burned and included small arms munitions up to 20 millimeters (mm) in size, parachute and distress flares, Mark IV signal cartridges, rocket igniters, cartridge-activated devices, and 2.75-inch and 5-inch rockets. Rocket propellant also was reportedly placed on the ground and ignited in the area of the burn chamber. Rocket motors were disposed of by static firing of both 2.75-inch and 5-inch rockets from a firing pad located south of the burn chamber. An estimated 2.5 tons of ordnance were disposed of at the site each month; overall, an estimated 350 tons of ordnance were disposed of while the site was in operation. There is no known burial of ordnance at Site 15.

Until their removal in 2008, the ordnance burn chamber and static rocket firing pad located in the north-central portion of the site were the only structures related to historical activities that remained at the site. The burn chamber was a rounded, steel, tank-like container approximately 10 feet in length and 4 feet in height. The static rocket-firing pad was an L-shaped concrete structure approximately 10 feet long by 4 feet wide by 6 feet high. The ordnance burn chamber, an additional burn chamber found during remedial activities, and the firing pad were removed in 2008 as part of remedial activities. Several concrete building foundations (remnants of buildings that supported skeet and trap range activities) located in the area surrounding the burn chamber and firing pad were also removed in 2008.

Approximately 21,724 tons of contaminated soil was excavated, transported, and disposed from the 22 excavation areas located within 17 designated areas during the 2008/2009 removal actions. Contaminated soil was transported to Waste Management's Chesser Island Road Landfill in Folkston, Georgia, or Republic Services' Broadhurst Environmental Landfill in Screven, Georgia, for disposal.

Approximately 4,833 tons of excavated soil that exceeded toxicity characteristic leaching procedure (TCLP)-lead concentrations was treated with approximately 270 tons of Free Flow Reagent to meet toxicity characteristic criteria for disposal as non-hazardous waste. An additional 16,891 tons of non-hazardous excavated soil from the 22 excavation areas was also disposed at the above listed disposal facilities.

During 2008/2009 removal actions, recovered MEC was staged in a Type 2 high explosive (HE) storage magazine and disposed by open detonation within one of the excavation areas. Following MEC disposal, visible residual materials and/or impacted soil was recovered from the detonation site and managed, transported, and disposed with the above mentioned excavated soil. Post-MEC detonation site impact determination included the soil sampling and laboratory analyses from the detonation site after MEC detonations to ensure soil impacted by MEC detonations had been sufficiently removed.

4. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant, or Contaminant

Based on the results of several investigations, Site 15 is known and/or suspected to contain MEC, consisting of discarded military munitions (DMM) and unexploded ordnance (UXO), potentially presenting an explosive hazard. MEC represents a safety hazard and may constitute an imminent and substantial danger to on-site receptors, local populations, and the environment due to its explosive potential. The results of the MEC removal activities conducted in support of the 2008/2009 soil remedial action, MEC RI, and Supplemental MEC RI at Site 15 provide evidence that MEC is present at Site 15.

In addition, releases of hazardous constituents such as lead from discarded munitions from a former small arms, skeet, and trap range resulted in contamination of soil at Site 15 that was considered Resource Conservation and Recovery Act (RCRA) characteristic hazardous waste once generated. Some of those lead contaminated soils were excavated, treated and disposed off-site as part of the 2008/2009 removal actions described above.

5. NPL Status

The former NAS Cecil Field (USEPA ID FL5 170 022 474) was placed on the NPL by the USEPA in December 1989. Subsequent to this listing, the Navy, USEPA, and Florida Department of Environmental Protection (FDEP) entered into a Federal Facility Agreement (FFA) for NAS Cecil Field to address environmental concerns present at the facility. The Installation Restoration Program (IRP) and MRP are responsible for addressing these concerns and managing responses as appropriate to CERCLA and RCRA.

6. Maps, Pictures, and Other Graphic Representations

Maps depicting the facility and site location, site details, and removal action areas are presented in Attachment 1 to this Action Memorandum.

B. Other Actions To Date

1. Previous Actions

As previously stated, in the 1980s, environmental investigations were initiated that included soil, groundwater, sediment, and surface water sampling. Following an RI, which focused only on chemical contamination, PAHs, metals (arsenic and lead), and TRPH soil contamination were identified that required remediation, a ROD for OU 5, Site 15, was signed in June 2008 documenting selection of a remedy to address these chemical contaminants (Tetra Tech, 2008). This RI and ROD did not address MEC. The areas of soil contamination at Site 15 were primarily associated with the former ordnance disposal area and old skeet and trap range. Chemical contamination was found associated with these sources as well as with forest burn areas. Remedial activities were conducted in 2008 and 2009 in accordance with the ROD and included contaminated soil excavation (from 1.0 to up to 2.0 feet below ground surface [bgs]) in 17 areas which had contaminant concentrations in excess of cleanup goals, on-site solidification/stabilization of lead-contaminated soil, and off-site treatment and disposal of contaminated soil to allow low-intensity recreational reuse of the site (AGVIQ-CH2MHill, 2009). Chemical contamination at Site 15 has been addressed through the remedy (Tetra Tech, 2009). The chemical contamination investigation had also included munitions constituents (MC), except for nitroglycerin. Although nitroglycerin (propellant) was not investigated, soil in the potential area of concern was removed in the 2008/2009 soil removal effort from the area where propellants were expected, near the former burn chamber (reportedly, rocket propellant was placed on the ground, ignited, and presumed to be consumed). Note, the ordnance burn chamber, static rocket firing pad, and several concrete building foundations (remnants of buildings that supported skeet and trap range activities) located in the area surrounding the burn chamber and firing pad were removed in 2008.

Because historical activities at Site 15 included munitions operations, and based on the findings of an MEC PA/SI conducted in 2007, MEC removal was determined to be necessary before the 2008/2009 soil remedial action could proceed. MEC and MDAS (referred to as munitions debris [MD] in the PA/SI Report) were located during a munitions survey and were removed from the soil excavation areas before soil excavation operations commenced. To support the effort as part of the removal action, tree and vegetation clearance were conducted in portions of the site prior to soil excavation. The MEC related activities included a global positioning system (GPS)-surveyed subdivision of Site 15 into 100-foot by 100-foot grids, vegetation removal, MEC surface clearance, digital geophysical mapping (DGM) with an EM61-MK2 time-domain metal detection and DGM target anomaly identification, manual and mechanically-aided intrusive investigation of DGM target anomalies, and demolition of MEC items found in 114 grids (22 acres). The MEC/MPPEH clearance included 100 percent surface clearance and anomaly investigation, but only of the select grids where contaminated soil was to be excavated.

The table below provides a summary of the MEC items identified and removed during the 2008/2009 clearance activities. All of the MEC items were encountered in and around the former ordnance disposal area. Additionally, numerous MDAS items were encountered that were located in and around the former ordnance disposal area, in the former skeet and trap range area, and along access roads to the former ordnance disposal area.

MEC Items Identified During the 2008/2009 Soil Removal Action

MEC items found	Surface or Subsurface
One 20mm Target Practice Projectile Full Up	Subsurface
One 20mm TP Projectile Full Up	Surface
One M204 Practice Mine Fuze	Subsurface
Six M204 Practice Mine Fuzes	Subsurface
Two M204 Practice Mine Fuzes	Subsurface
Two M204 Practice Mine Fuzes and one M112 Photoflash Cartridge	Subsurface
One M208 20mm TP	Surface
Two 20mm TP Projectiles Full Up	Subsurface
Three M204 Practice Mine Fuzes	Subsurface
One 20mm Projectile HE	Subsurface
One Aircraft Launched Flare	Surface
Two Mk4 Spotting Charges	Subsurface
One M204 Practice Mine Fuze	Subsurface
Two M204 Practice Mine Fuzes	Subsurface
One BLU – 26/B Submunition Inert Bomblet	Subsurface
One M204 Practice Mine Fuze	Subsurface

In April and May 2010, an MEC RI was conducted practicing UXO avoidance (Tetra Tech, 2011a). Site 15 was divided into 100-foot grids building outwards from the grid system used previously during 2008 and 2009 soil removal activities. Both the ground surface and shallow subsurface (0 to 1 foot bgs) were investigated using detector-aided survey techniques only; no intrusive investigation was conducted although subsurface anomalies were identified. As the detector-aided survey along each transect was completed, the number of subsurface anomalies was counted and recorded by the field team; each transect was color coded (blue, green, yellow, red) based on the number of subsurface anomalies detected along it. The specific location of each subsurface anomaly comprising the count was not surveyed during the 2010 investigation. A summary of the MPPEH items (anticipated at that time to be MDAS) found on the ground surface during the 2010 MEC RI and the number of subsurface anomalies found along each transect was presented in the MEC RI Report (Tetra Tech, 2011a). The MEC RI, coupled with findings of MPPEH and MEC removed from the surface/subsurface during the 2008/2009

remedial activities, concluded that Site 15 contained MPPEH in the vicinity of the former ordnance disposal area.

Based on the detector-aided survey performed during the MEC RI, the density of surface MEC/MPPEH was characterized as low over the majority of the surface of Site 15. Thirteen MPPEH items (most suspected to be MDAS) were identified during the 2010 MEC RI. These items were located, inspected, identified, certified, and properly disposed of during the Supplemental MEC RI.

A Supplemental MEC RI was conducted in 2011 (Tetra Tech, 2011b) to address data gaps for the shallow subsurface by intrusively investigating and determining the sources of shallow subsurface anomalies (0 to 1 foot bgs) detected during the 2010 MEC RI outside of areas already known to have contained MEC items (former ordnance disposal area). Three remaining subsurface data gap areas were investigated during the Supplemental MEC RI: the bike path/asphalt access road; the high density anomaly area outside the former ordnance disposal area, and the MEC RI grid boundary. The former ordnance disposal area and the area within approximately 200 feet of the disposal area were not included in the Supplemental MEC RI because it was already known that these are areas of concern for recreational users at the site.

Based on the color designation (blue, green, yellow, red) signifying the number of subsurface anomalies identified during the 2010 MEC RI detector-aided surface survey, a statistically determined varying number of subsurface anomalies were randomly acquired during the Supplemental MEC RI, along 100-foot spaced transects in each of the three data gap areas. Anomalies were excavated using hand tools. The Site 15 Supplemental MEC RI included the evaluation of 103 transects, each 100 feet in length, and the excavation of 132 target subsurface anomaly locations. Only one of the 132 hand digs resulted in a munitions-related find: a small caliber bullet located along the eastern investigation boundary, which was certified as MDAS; non-munitions metal was responsible for other anomalies. In addition, MPPEH items remaining on site, after being identified during the 2010 MEC RI, were revisited, inspected, certified, and removed from the site. From the 2010 MEC RI and 2011 Supplemental MEC RI combined, a total of nine items were certified as MDAS items. The remaining six of the MPPEH items were certified as non-munitions-related scrap or electrical parts.

No MEC/material documented as an explosive hazard (MDEH) were found at Site 15 during the MEC RI or the Supplemental MEC RI; however, a full clearance of the surface and subsurface of all grids was not conducted. Because of the documented removal of MEC from the site in the past, there is potential for MEC/MPPEH to exist at Site 15 on the ground surface and in the subsurface. Because no MEC/MDEH were encountered in the high-density anomaly areas outside of the former ordnance disposal area, no burial pits or trench areas are suspected. At the 2010/2011 MEC RI grid boundary, because only a single

small caliber small arms bullet was identified, the site boundary has been adequately defined, as statistically supported. Although to date MEC has not been encountered, the bike path/asphalt access road remains of interest because of the potential for high public foot traffic there.

The primary area of concern at Site 15 remains the former ordnance disposal area. The results of the Supplemental MEC RI were consistent with the conceptual site model (CSM), which indicated that munitions items on the ground surface and in the shallow subsurface would be primarily in and around the former ordnance disposal area and decrease in density toward the site boundary. Based on the 2008/2009 removal action and results of the 2011 Supplemental MEC RI intrusive investigation, the source of the subsurface anomalies appears to be primarily non-munitions related scrap metal, possibly MDAS; MEC items are expected to be present near the former ordnance disposal area, albeit at low density. The primary exposure pathway at Site 15 is direct contact with items on the ground surface, and to a lesser extent the shallow subsurface (0 – 1 foot bgs), based on the permissible low-intensity land use activities.

Recommendations from the MEC RI and Supplemental MEC RI for Site 15 were to proceed to an FS, taking into consideration two areas of concern: the former ordnance disposal area, which has a high potential for one or more MEC items to be present at the ground surface and shallow subsurface; and the remaining areas of the site, which includes access roads serving as high traffic areas for human receptors.

An FS Report was prepared which describes the formulation and evaluation of remedial alternatives to remove MEC/MPPEH and munitions-related debris from Site 15 (Tetra Tech, 2012). Within the FS report, the results of previous investigations were used to develop and evaluate potential remedial alternatives to reduce risks to human health and the environment that have been identified at Site 15. The FS established remedial action objectives (RAOs) and cleanup goals; screened remedial technologies; and assembled, evaluated, and compared a No Action alternative and three active remedial alternatives each with three options (options A, B, and C).

2. Current Action

There are currently no activities being conducted at Site 15. However, land use controls (LUCs) are in place as specified in the LUC RD for Site 15 approved by USEPA and FDEP (Tetra Tech, 2009). Existing LUCs limit site uses to low-intensity recreational uses including activities such as hiking, biking, horseback riding, birding, and hunting. Medium- (picnicking and camping) and high-intensity (children's playgrounds and contact sports) recreational, residential, and commercial/industrial uses are not permitted. No man-made attractions can be provided that would entice people, particularly small children, to frequently visit the site, which is consistent with the property's proposed reuse as a natural resource

corridor. LUCs already in place also prohibit excavation of soil from Site 15 without prior written approval from the Navy, USEPA, and FDEP.

C. State and Local Authorities' Roles to Date

1. State and Local Actions

The environmental activities at Site 15 are being conducted under CERCLA authority and the NAS Cecil Field FFA dated 1990. The NAS Cecil Field Project Team includes representatives from the Navy Base Realignment and Closure (BRAC) Program Management Office (PMO) Southeast (SE), Naval Facilities Engineering Command (NAVFAC) Atlantic, USEPA Region 4, and FDEP. USEPA is the regulatory agency with oversight of CERCLA sites on the NPL where there is an FFA in place, including the former NAS Cecil Field. The Navy is the lead agency for performing cleanup at the former NAS Cecil Field with oversight by USEPA and FDEP. NAVFAC Atlantic provides technical guidance and management for all environmental projects at the former NAS Cecil Field.

The USEPA and FDEP have been involved in planning and reviewing site investigation reports and this Action Memorandum. Comments on this Action Memorandum were solicited from USEPA and FDEP. Involvement by all parties in the planning process will continue throughout the NTCRA activities through meetings and correspondence.

2. Potential for Continued State/Local Response

USEPA Region 4 and FDEP will continue to be involved in CERCLA-related and Military Munitions Response Program (MMRP)-related environmental activities at Site 15 until completion of the remedy.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

Section 300.415 of the NCP, 40 Code of Federal Regulations (CFR) Section 300.415, outlines the factors to be considered in determining the appropriateness of a removal action. Section 300.415, paragraphs (b)(2)(vi) and (b)(2)(viii) apply to the current situation at this site. The paragraphs are provided below:

300.415 (b)(2)(vi) - "Threat of fire or explosion."

300.415 (b)(2)(viii) - "Other situations or factors that may pose threats to public health or welfare or the environment."

Site 15 contains MEC, which represents a safety hazard and may constitute an imminent and substantial danger to on-site receptors and local populations due to its explosive potential. The munitions removal action will be conducted to clear munitions explosives hazards from the surface and shallow subsurface and to mitigate the explosive safety hazard or risk to human health and the environment.

Since the closure of NAS Cecil Field in September 1999, most of the facility has been transferred to the Jacksonville Port Authority (now Jacksonville Aviation Authority) and City of Jacksonville. According to the Jacksonville Economic Development Commission (JEDC) Reuse Plan, the former base will have multiple uses but will be used primarily for aviation-related activities. The JEDC provided for future use of the facility to include a natural and recreational corridor. The Navy will transfer the Site 15 parcel to the City of Jacksonville through the Department of Interior; the property will be used as a low intensity recreational area. The Navy and the grantee will be responsible for ensuring that the LUCs remain in place and that activities are compatible with land use.

B. Threats to the Environment

Threats to the environment are also outlined in Section 300.415 of the NCP, 40 CFR Section 300.415. Section 300.415, paragraphs (b)(2)(vi) and (b)(2)(viii) also apply when considering threats to the environment that currently exists at this site. If left in place, MEC would present continued risk to flora and fauna and could be a source of contamination in soil due to leaching over time.

IV. ENDANGERMENT DETERMINATION

A qualitative hazard/risk assessment was performed as part of the Supplemental MEC RI to assess the current explosive hazards to human receptors at Site 15, in accordance with Munitions and Explosives of Concern Hazard Assessment Methodology (USEPA, 2010). The MEC Hazard Assessment (HA) was based on the 2011 Supplemental MEC RI and historical information obtained from the 2010 MEC RI and prior 2008 and 2009 MEC activities in support of the contaminated soil remedial action. A qualitative assessment was not completed for MC because chemical contamination at Site 15 was addressed during the remedial action performed in 2008 and 2009. Site 15 has two distinct areas, the former ordnance disposal area and the remainder of the site (particularly areas around access roads, which are relatively high traffic areas for human receptors). Therefore, the site was divided into two subunits (Subunit 1 and 2, respectively) to perform the MEC HA, as allowed by USEPA guidance (2010). The MEC HA output is a score and a hazard level that is used to evaluate current site conditions relative to expected changes in the site that would result from the NTCRA.

The MEC HA score for the baseline/current conditions in Subunit 1 is 865, which corresponds to a relative Hazard Level of 1, indicating that the former ordnance disposal area has the greatest potential for

explosive hazard conditions. This HA score was based on the historical use of the former ordnance disposal area, the potential for MEC to be located on the ground surface and in the subsurface, and the potential for human receptors, with full access to the site, to be exposed to MEC. The MEC HA score for the baseline/current conditions in Subunit 2 is 605, which corresponds to a relative Hazard Level of 3, indicating that the area outside the former ordnance disposal area has a moderate potential for explosive hazard conditions. This HA score was based on the historical use of this area as a skeet range, and possible kickout or surface disposal area, and the low probability that MEC/MPPEH are present in this area, which reduces the potential for human receptors to be exposed to MEC/MPPEH. However, because a full surface clearance has not been performed, there is still a possibility that MEC/MPPEH are present in this area.

After the NTCRA is completed, the MEC HA score for Subunit 1 would be 470, which corresponds to a relative Hazard Level of 4, indicating a low potential for explosive hazard conditions to exist in the former ordnance disposal area. The MEC HA score for Subunit 2 would be 335, which corresponds to a relative Hazard Level of 4, indicating that the area outside of the former ordnance disposal area has a low potential for explosive hazard conditions once the NTCRA has been completed.

MEC due to explosive potential presents imminent and substantial danger, thus the removal action described in this Action Memorandum is necessary to address this situation.

V. PROPOSED ACTION AND ESTIMATED COST

A. Proposed Action

The Navy's preferred remedy (identified in the FS as Alternative 2C) is Areas of Concern, Select Surface and Shallow Subsurface MEC and Anomaly Removal with mechanical excavation and manual investigation and removal.

1. Proposed Action Description

The tasks associated with the NTCRA at Site 15 (Tetra Tech, 2012) are as follows:

- Any required permits, including Emergency Detonation Permit, will be obtained prior to beginning remedial activities.
- Site surveys will be conducted prior to beginning removal action activities to determine if any endangered, threatened, or Florida SSC are present.

- Wetlands have been identified at Site 15; an inspection/survey will be conducted to verify previously surveyed wetland boundaries.
- The former ordnance disposal area will be subdivided into 100-by 100-foot grids, as shown in blue on Figure 3. Transects will be prepared on either side of the accessways as shown in orange on Figure 3.
- Brush cutting and clearance activities will be conducted, as necessary, to prepare the site. It is assumed that vegetation clearance in wetland areas will not be required.
- Visual and detector-aided (hand-held magnetometer) surveys of the ground surface of all grids and transects will be conducted to locate surface munitions-related items. Digital geophysical surveys using electromagnetic systems will be conducted within the former ordnance disposal area to determine the locations of anomalies.
- Each shallow subsurface anomaly marked during surveying, 10 feet along each side of accessways, as shown on Figure 3, (and possibly within the former ordnance disposal area) will be intrusively investigated using manual tools and techniques to a maximum depth of 1 foot bgs.
- Mechanical excavation and manual inspection of all soil from each grid within the former ordnance disposal area will be conducted, as necessary, to a maximum depth of 1 foot bgs (previously adequately characterized). The soil will be directly laid by the excavator on the ground surface adjacent to the excavation grid. All soil will be managed within/directly adjacent to the excavation grid. The excavated material will then be manually investigated by UXO Technicians for MEC/MPPEH and non-munitions related items using visual and detector-aided surveys, UXO Technicians will perform a 100-percent detector-aided surface survey of all of the spread soil. All MEC/MPPEH items and non-munitions related debris identified will be manually removed. Upon completion of each excavation area, or at the end of each day, the cleared soil will be backfilled into the original excavation grid area. The process will continue for each excavation grid area.
- Munitions-related items (including MEC, MDEH, and MDAS) will be manually removed and treated on site via detonation with donor explosives as necessary where MEC/MDEH is encountered from the ground surface, from the subsurface during intrusive anomaly investigation, and from excavated soil. A soil sample will be collected from the ground surface after any detonation. Metallic non-munitions debris from any detonation will also be removed. No soil will be removed with the munitions-related items and non-munitions debris items; any soil clinging to the items will be removed in place.

Munitions-related items removed during this removal action will be characterized and then disposed off-site as either solid or hazardous waste.

- Site restoration activities, including revegetation of the excavation area, will be conducted after all removal action activities are complete.
- Visual and detector-aided surface inspections will be conducted annually along access roads, bike paths, and walking trails within the removal action area. Surface removal of metallic munitions and non-munitions debris will be conducted, as necessary. The need for annual inspections will be evaluated after five annual inspections and will be reduced to one inspection every 5 years if no MEC/MDEH are identified; 5-year inspections will be ended after one 5-year inspection with no MEC/MDEH identified.
- Application of existing LUCs at Site 15 include:
 - LUCs already in place as specified in the LUC RD for Site 15 approved by USEPA and FDEP (Tetra Tech, 2009):
 - LUCs already in place that limit site uses to low-intensity recreational uses including activities such as hiking, biking, horseback riding, birding, and hunting. Medium- (picnicking and camping) and high-intensity (children's playgrounds and contact sports) recreational, residential, and commercial/industrial uses are not permitted. No man-made attractions can be provided that would entice people, particularly small children, to frequently visit the site, which is consistent with the property's proposed reuse as a natural resource corridor. LUCs already in place also prohibit excavation of soil from Site 15 without prior written approval from the Navy, USEPA, and FDEP.
 - New LUCs that will be added to the remedy for Site 15:
 - Caution/UXO Hazard warning signs will be posted along access roads, bike paths, and walking trails to warn that munitions-related items may be present.
 - A Public Educational Program is warranted to warn the visiting public (hikers or hunters) of the potential presence of ordnance, the importance of not disturbing (yet reporting) suspect items observed within the project site, and the importance of not conducting intrusive activities. The Public Education Program may include any or all of the following: signage, periodic public safety awareness meetings and/or distribution of educational media to local police, fire departments, and libraries, where they would be available to the public.

Figure 3 presents the munitions removal action area; the previously established LUC boundaries for Site 15 are presented on Figure 2.

The details of the removal action summarized will be presented in a Remedial Action Work Plan for OU 5, Site 15 – Blue 10 Ordnance Disposal Area.

2. Contribution to Remedial Performance

The NTCRA will mitigate the explosive safety hazard and risk to human health and the environment via removal and treatment of MEC, MDEH, and MDAS and will also remove metallic non-munitions debris from the site. In addition, annual inspections and removals will be conducted, as necessary, and LUCs will be implemented at Site 15. These actions will mitigate the potential explosive safety hazards to the public. The removal as described in this Action Memorandum is consistent with the selected remedial action and will contribute to the remedial performance by removing MEC, reducing risk to human health and the environment and will thereby allow the site to be utilized for the intended use as low-intensity recreational area.

3. Description of Alternative Technologies

An FS for munitions removal (Tetra Tech, 2012) was developed which considered a no action alternative (Alternative 1) along with several other active removal action alternatives including: Areas of Concern, Select Surface and Shallow Subsurface MEC and Anomaly Removal (Alternative 2); All Surface and Shallow Subsurface MEC and Anomaly Removal (Alternative 3); and, All Surface and Shallow Subsurface MEC Removal (Alternative 4). Each of these active removal action alternatives had three different options for handling excavated soil; off-site hazardous soil disposal (Option A), on-site hazardous soil treatment and off-site non-hazardous soil disposal (Option B), and, mechanical excavation and manual investigation and removal (Option C). All alternatives were evaluated and compared for overall protection of human health and the environment, compliance with applicable or relevant and appropriate requirements (ARARs), long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, and cost. The selected NTCRA Alternative 2C, Areas of Concern, Select Surface and Shallow Subsurface MEC Anomaly Removal with mechanical excavation and manual investigation and removal, was considered to be the most effective and adequately protective technology for the munitions removal action work at Site 15. The NTCRA was chosen primarily based on protection of human health and the environment and cost. Based on the results of the MEC HA described in Section IV, this alternative provides the same amount of protectiveness as the other more extensive alternatives and at the lowest cost. Additionally, this alternative is easily implementable.

4. Engineering Evaluation/Cost Analysis

An Engineering Evaluation/Cost Analysis (EE/CA) was not developed because all of the required information is presented in the FS for munitions removal that evaluated several response actions to address MEC at Site 15 (Tetra Tech, 2012).

5. Applicable or Relevant and Appropriate Requirements

~~The term ARARs is defined in the NCP (40 CFR §300.5) as follows:~~

- ~~• Applicable requirements mean those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable.~~
- ~~• Relevant and appropriate requirements mean those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not applicable to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be relevant and appropriate.~~

ARARs are classified into three broad categories based on the manner in which they are applied during a removal action. These categories are as follows:

- Chemical-specific ARARs were developed to provide health- or risk-based concentration (RBC) limits for environmental media. These limits are specific for an individual chemical or group of chemicals, and often these ARARs are used to determine the extent of site remediation. Chemical-specific ARARs may be concentration-based cleanup goals or may provide the basis for calculating such levels. In cases where no chemical-specific ARAR exists, chemical advisories may be used to develop removal objectives.

- Location-specific ARARs are considered in view of natural or man-made site features. These ARARs are intended to limit activities within designated areas.
- Action-specific ARARs pertain to the implementation of a given remedy. These ARARs control or restrict hazardous substance- or pollutant-related activities and are considered when specific removal activities are planned for a site.

Chemical contamination at Site 15 has previously been addressed for the intended land use; therefore, there are no chemical-specific ARARs or To Be Considered (TBC) criteria for this removal action. The NTCRA documented in this Action Memorandum will comply with ARARs to the extent practical. Tables 1 and 2 of Attachment 2 provide federal and state location-specific and action-specific ARARs and TBCs for the proposed NTCRA at Site 15.

i. Munitions Response Requirements and Guidance

In addition to the ARARs provided above, the following munitions guidance documents are cited as guidance to be followed during conduct of the removal action (additional munitions guidance documents will be followed as necessary). The most updated and recent guidance will be reviewed and followed at the time of the removal action.

- Department of Defense (DoD) Instruction 4140.62, Material Potentially Presenting an Explosive Hazard, which defines policy and responsibilities for management and disposition of MPPEH.
- Naval Sea Systems Command (NAVSEA) Operations Pamphlet (OP) 5, Ammunition and Explosives Safety Ashore, which addresses the characteristics and hazards of ammunition, explosives, and other related hazardous materials and specifies standardized safety regulations for all operations where ammunition and explosives are or are intended to be present.
- Naval Ordnance Safety and Security Activity (NOSSA) Instruction (NOSSAINST) 8020.15B, Explosives Safety Review, Oversight, and Verification of Munitions Responses, which assigns responsibility and establishes procedures and reporting for requirements to enable NOSSA to provide effective review, oversight, and verification of the explosives safety aspects of munitions responses.
- DoD 6055.9-STD, DoD Ammunition and Explosives Safety Standards, which establishes uniform safety standards applicable to ammunition and explosives, to associated personnel and property,

and to unrelated personnel and property exposed to the potential damaging effects of an accident involving ammunitions and explosives.

- DoD 4160.21-M-1, Defense Demilitarization Manual, which sets demilitarization policy, prescribes uniform procedures for assigning demilitarization codes to DoD property, and directs methods for completing demilitarization.
- Engineer Manual (EM) 1110-1-4009, Military Munitions Response Actions, which provides procedures to be used to perform engineering and design activities for all phases of the MMRP. Chapter 14, Work Plans, provides guidance regarding preparation and review of work plans for munitions response actions.
- Engineer Pamphlet (EP)-75-1-2, Munitions and Explosives of Concern Support During Hazardous, Toxic, and Radioactive Waste (HTRW) and Construction Activities, which provides procedural guidance, technical specifications, personnel and training requirements, and health and safety criteria for MEC support during HTRW and construction activities.
- The following United States Corps of Engineers (USACE) guidance documents published by the United States Army Engineering and Support Center in Huntsville, Alabama:

Basic Safety Concepts and Considerations for Munitions and Explosives of Concern Response Action Operations, EP 385-1-95a.

Munitions and Explosives of Concern Support During Hazardous, Toxic, and Radioactive Waste and Construction Activities, EP 75-1-2, 01.

Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites.

Engineering and Design – Ordnance and Explosives Response EM 1110-1-4009.

- Department of Defense Explosives Safety Board (DDESB); Minimum Qualifications for UXO Technicians and Personnel, Technical Paper (TP) 18, which provides minimum qualification standards for personnel conducting DoD UXO-related operations.

6. Project Schedule

Activities	Dates (MM-DD-YY)	
	Anticipated Date of Initiation	Anticipated Date of Completion
Action Memorandum	5-01-12	6-19-12
Remedial Action Work Plan	4-30-12	6-14-12
Field Work	6-25-12	7-24-12
Remedial Action Closure Report	7-23-12	9-21-12
After Action Report	7-23-12	9-11-12
Public Notice	6-20-12	6-20-12
Public Comment Period	6-20-12	7-20-12

B. Estimated Costs

Based on the FS, the estimated capital costs for the proposed NTCRA at Site 15, which will be borne by the Navy, will be approximately \$2,004,000 including planning documents, field work, and reporting. Operation and maintenance (O&M) costs will be \$37,000, and the net present worth (NPW) for the NTCRA will be \$2,041,000.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If no action is taken or if the action is delayed, munitions items present at Site 15 would pose a potential explosive safety hazard and risk to current receptors, including the public during future day-to-day activities and ecological receptors.

VII. PUBLIC INVOLVEMENT

Cecil Field Restoration Advisory Board (RAB), which is composed of concerned citizens and is supported by the Cecil Field BRAC Cleanup Team (BCT), meetings are held as needed to notify the public of significant milestones in the environmental cleanup program at the base. In accordance with 40 CFR 300.415(n), a notice of availability of the Administrative Record File will be published in the local newspaper (Florida Times-Union). The notice will also inform the public of the 30-day public comment period. Pertinent documents from the Administrative Record File will be made available for public review at the Information Repository located at the Former Memorial Chapel, 6112 New World Avenue, Cecil Commerce Center, Jacksonville, Florida, 32221 (phone: 904.777.1900).

VIII OUTSTANDING POLICY ISSUES

There are no outstanding policy issues.

IX. ENFORCEMENT

The Navy has taken responsibility for development and implementation of the NTCRA. The NTCRA at Site 15 meets the substantive requirements of applicable requirements and governing regulations.

X. RECOMMENDATION

This decision document presents the selected NTCRA for munitions removal at Site 15 at the former NAS Cecil Field in Jacksonville, Florida, developed in accordance with CERCLA and the MMRP, as amended, and is consistent with the NCP. This decision document is based on work that was completed by the Navy and on the Administrative Record for the site. The Navy is funding this project. Conditions at the Site meet the NCP Section 40 CFR 300.415(b)(2) criteria for removal action and the Navy, in consultation with USEPA and FDEP, recommend the response action commence as soon as practicable due to the potential threat to human health and the environment.

REFERENCES

AGVIQ-CH2MHill (AGVIQ-CH2MHill Constructors, Inc. Joint Venture III), August 2009. Remedial Action Completion Report – Soil Removal Action for Operable Unit 5, Site 15, Blue 10 Ordnance Disposal Area, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for Naval Facilities Engineering Command, Southern Division, North Charleston, South Carolina.

CH2MHILL, 2007. Preliminary Assessment/Site Inspection Report for Past Use of Munitions and Explosives of Concern for Blue Ordnance Disposal Area (Site 15), Former Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for Naval Facilities Engineering Command, Southeast.

Navy, 2005. Navy Munitions Response Program (MRP) Guidance. June.

Navy, 2006. Navy Environmental Restoration Program Manual. August.

Tetra Tech, 2008. Record of Decision for Operable Unit 5, Site 15 - Blue 10 Ordnance Disposal Area, Naval Air Station Cecil Field. Tetra Tech. June.

Tetra Tech, 2009. Land Use Control Remedial Design, Operable Unit 5, Site 15, Naval Air Station Cecil Field. Tetra Tech. May.

Tetra Tech, 2011a. MEC Remedial Investigation Report for Munitions Response Program at OU 5, Site 15, Naval Air Station Cecil Field. Prepared for BRAC PMO, North Charleston, South Carolina. January.

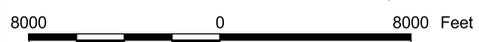
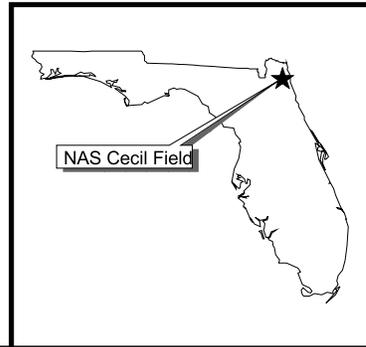
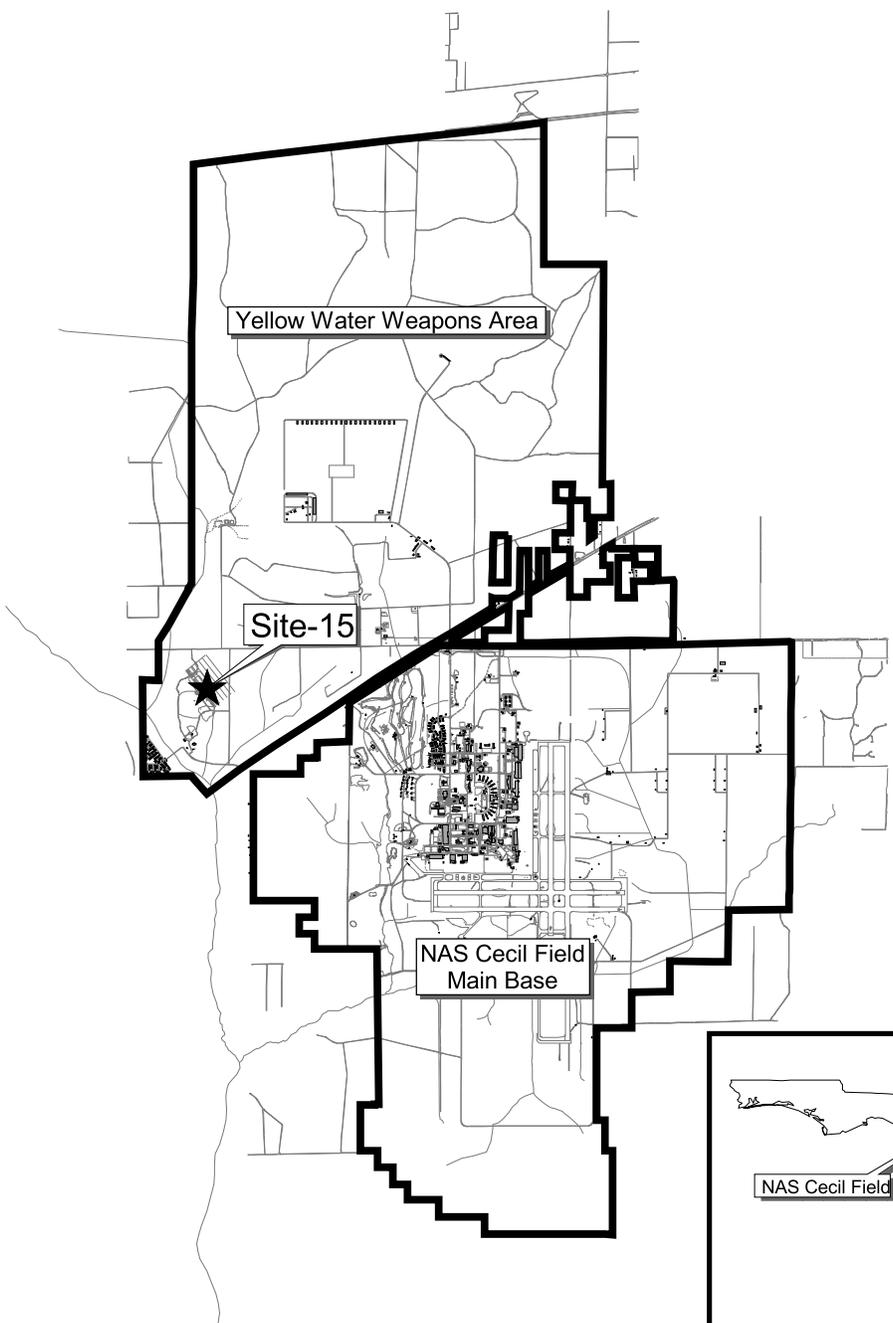
Tetra Tech, 2011b. Remedial Investigation Report for Munitions Response Program, Munitions and Explosives of Concern Supplemental Remedial Investigation for OU 5, Site 15, Naval Air Station Cecil Field. Prepared for BRAC PMO, North Charleston, South Carolina. December.

Tetra Tech, 2012. Feasibility Study for Munitions Removal at Operable Unit 5, Site 15 Blue 10 Ordnance Disposal Area, Naval Air Station Cecil Field. Prepared for Naval Facilities Engineering Command Southeast, North Charleston, South Carolina. June.

USEPA, 2009. Superfund Removal Guidance for Preparing Action Memoranda. Final Guidance. September.

USEPA, 2010. Munitions and Explosives of Concern Hazard Assessment Methodology, EPA 505B08001, February.

ATTACHMENT 1
FIGURES

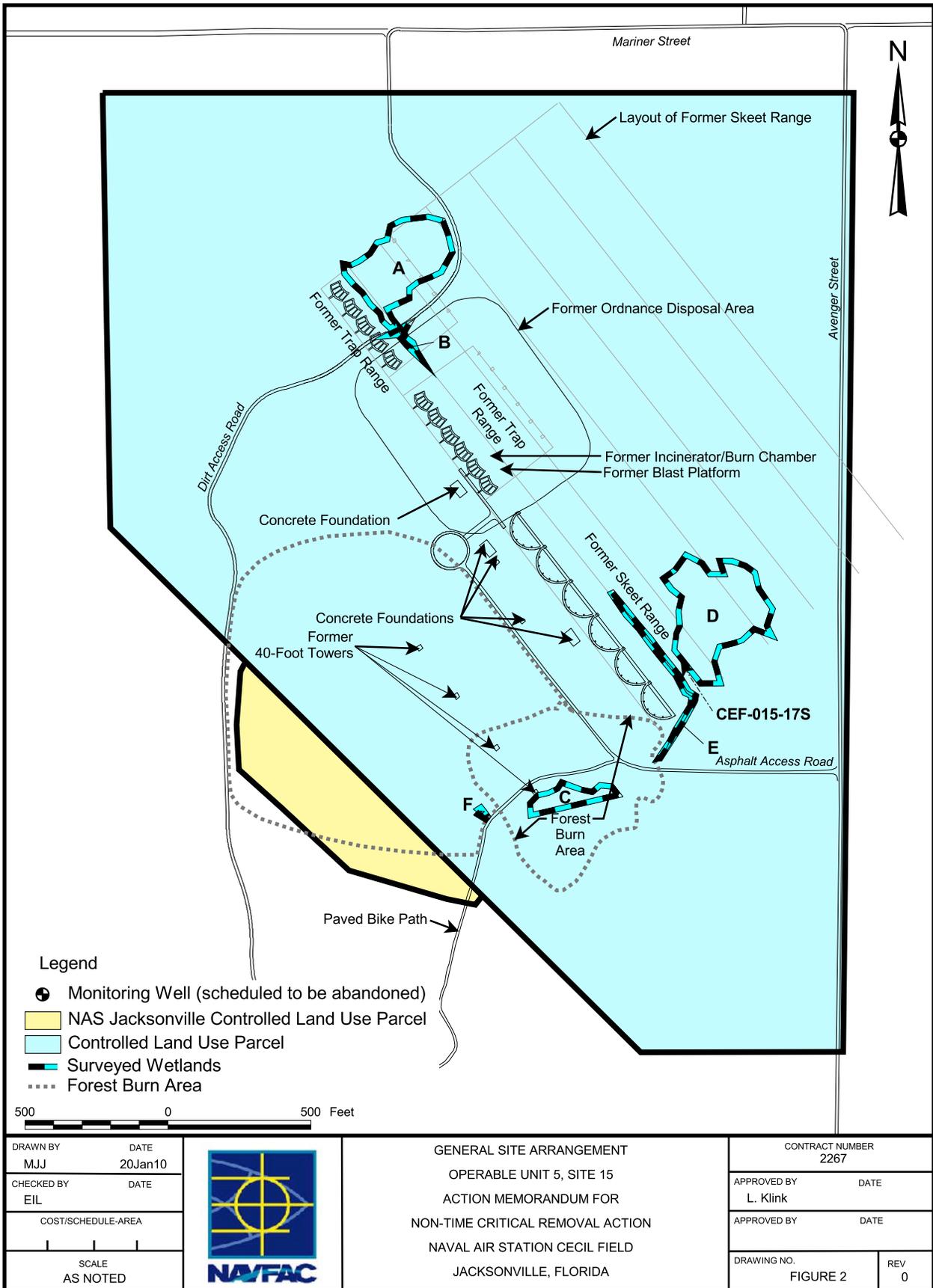


DRAWN BY MJJ	DATE 27Jul11
CHECKED BY EIL	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



GENERAL LOCATION MAP
 OPERABLE UNIT 5, SITE 15
 ACTION MEMORANDUM FOR
 NON-TIME CRITICAL REMOVAL ACTION
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 2267	
APPROVED BY L. Klink	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0

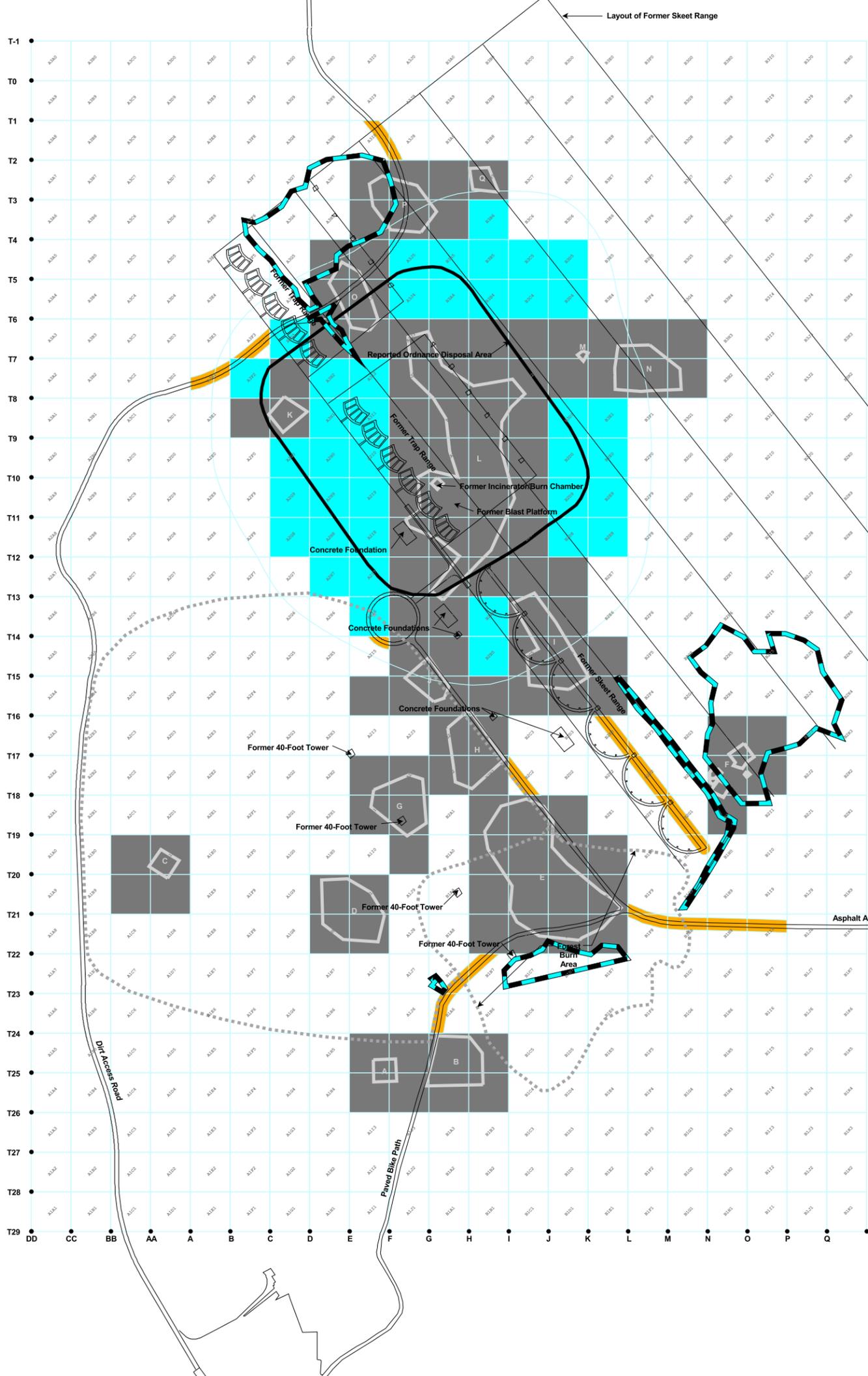


DRAWN BY MJJ	DATE 20Jan10
CHECKED BY EIL	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



GENERAL SITE ARRANGEMENT
 OPERABLE UNIT 5, SITE 15
 ACTION MEMORANDUM FOR
 NON-TIME CRITICAL REMOVAL ACTION
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 2267	
APPROVED BY L. Klink	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV 0



Legend

- A1A1 UXO Grid Number
- 2008 Soil Excavated Area (A through Q)
- 2008 Munitions Surface and Subsurface Clearance Area
- Surface and shallow subsurface clearance (to 1 foot bgs)
- Surface clearance, 10 feet on either side of accessway, and shallow subsurface anomaly clearance (to 1 foot bgs)
- Surveyed Wetlands



DRAWN BY MJJ	DATE 26Jul11
CHECKED BY EIL	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



REMOVAL ACTION AREA
OPERABLE UNIT 5, SITE 15
ACTION MEMORANDUM FOR
NON-TIME CRITICAL REMOVAL ACTION
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NUMBER 2267	
APPROVED BY L. Klink	DATE
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ATTACHMENT 2
TABLES

TABLE 1

LOCATION-SPECIFIC ARARs AND TBCs
 OU 5, SITE 15 ACTION MEMORANDUM FOR
 NON-TIME CRITICAL REMOVAL ACTION
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA
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Location Characteristics	Requirement	Prerequisite	Citation
Presence of wetlands	Requires Federal agencies to evaluate action to minimize the destruction, loss or degradation of wetlands and to preserve and enhance beneficial values of wetlands.	Actions that involve potential impacts to, or take place within, wetlands – To Be Considered	Executive Order 11990 – <i>Protection of Wetlands</i> Section 1.(a)
<i>Aquatic Resources</i>			
Location encompassing aquatic ecosystem as defined in 40 C.F.R. 230.3(c)	No discharge of dredged or fill material into an aquatic ecosystem is permitted if there is a practicable alternative that would have less adverse impact.	Action that involves the discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands – Relevant and Appropriate	40 C.F.R. 230.10(a)
	No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps in accordance with 40 C.F.R. 230.70 <i>et seq.</i> have been taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.		40 C.F.R. 230.10(d)
	Must comply with the substantive requirements of the NWP 38 General Conditions, as appropriate, any regional or case-specific conditions recommended by the Corps District Engineer, after consultation. <i>Note:</i> Despite that consultation may be considered an administrative requirement, it should be performed to ensure activities are in compliance with substantive provisions of the permit.	On-site CERCLA action conducted by Federal agency that involves the discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands – Relevant and Appropriate	Nation Wide Permit (38) <u>Cleanup of Hazardous and Toxic Waste</u> 33 C.F.R. 323.3(b)

TABLE 1

LOCATION-SPECIFIC ARARs AND TBCs
 OU 5, SITE 15 ACTION MEMORANDUM FOR
 NON-TIME CRITICAL REMOVAL ACTION
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 JACKSONVILLE, FLORIDA
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<i>Threatened and Endangered Species</i>			
<p>Presence of Threatened and Endangered Wildlife listed in 50 C.F.R. 17.11(h) –or critical habitat of such species</p>	<p>Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary of Interior, after consultation as appropriate with affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section.</p> <p><i>Note:</i> Despite that consultation may be considered an administrative requirement, it should be performed to ensure activities are in compliance with substantive provisions of the Endangered Species Act and regulations.</p>	<p>Agency action that may jeopardize listed wildlife species, or destroy or adversely modify critical habitat – Applicable</p>	<p>16 U.S.C. 1536 (a)(2) –or Section 7(a)(2) of the <i>Endangered Species Act of 1973</i></p>
<p>Presence of Threatened and Endangered Wildlife listed in 50 C.F.R. 17.11(h)</p>	<p>It is unlawful to take threatened or endangered wildlife (e.g., indigo snake, <i>drymarchon couperi</i>, in the United States.</p> <p><i>Note:</i> Under 50 C.F.R. 10.12 <i>Definitions</i> the term <i>Take</i> means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.</p>	<p>Action that may jeopardize listed wildlife species – Applicable</p>	<p>50 C.F.R. 17.21(c) 50 C.F.R. 17.31(a)</p>

TABLE 1

LOCATION-SPECIFIC ARARs AND TBCs
 OU 5, SITE 15 ACTION MEMORANDUM FOR
 NON-TIME CRITICAL REMOVAL ACTION
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA
 PAGE 3 OF 3

<p>Presence of State-Listed Threatened and Endangered Wildlife</p>	<p>No person shall take, possess, or sell any threatened species included in this subsection or parts thereof or their nests or eggs except as authorized by Commission rule or by permit from the Commission.</p> <p>The gopher tortoise (<i>gopherus polyphemus</i>) shall be afforded the protective provisions specified in this subparagraph. No person shall take, attempt to take, pursue, hunt, harass, capture, possess, sell or transport any gopher tortoise or parts thereof or their eggs, or molest, damage, or destroy gopher tortoise burrows, except as authorized by Commission permit or when complying with Commission approved guidelines for specific actions which may impact gopher tortoises and their burrows.</p>	<p>Action that may jeopardize state-listed wildlife species - Applicable</p>	<p>68A-27.003(2) 68A-27-003(2)(d)(3)</p>
<p>Presence of Migratory Birds</p>	<p>No person may take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, barter, any migratory bird, or the parts, nests, or eggs of such bird except as may be permitted under the terms of a valid permit issued pursuant to the provisions of this part and part 13 of the chapter, or as permitted by regulations in this part, or part 20 of this subchapter (the hunting regulations).</p> <p><i>Note:</i> Take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.</p>	<p>Action that may jeopardize migratory birds - Applicable</p>	<p>50 CFR 21.11 50 CFR 10.13</p>

ARAR = Applicable or Relevant and Appropriate Requirement.
 TBC = To Be Considered.
 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act.
 C.F.R. = Code of Federal Regulation.
 NWP = Nationwide Permit.
 U.S.C = United States Code.

TABLE 2-2

ACTION-SPECIFIC ARARs AND TBCs
 OU 5, SITE 15 ACTION MEMORANDUM FOR
 NON-TIME CRITICAL REMOVAL ACTION
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA
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Action	Requirement	Prerequisite	Citation
General Construction Standards — All Land-disturbing Activities (i.e., excavation, clearing, grading, etc.)			
Control of storm water runoff from soil disturbing activities	<p>Must comply with the substantive provisions in the “Generic Permit for Stormwater Discharge from Large and Small Construction Activities,” document number 62-621.300(4)(a), issued by the FDEP and effective February 17, 2009. Requires development storm water pollution prevention plan and implementation of best management practices and erosion and sedimentation controls for stormwater runoff to ensure protection of the surface waters of the state.</p> <p><i>Note:</i> Plan would be part of CERCLA document such as Remedial or Removal Action Work Plan.</p>	Stormwater discharges from large and small construction activities to surface waters of the State as defined in Section 403.031, F.S. – Applicable	<p>F.A.C. 62-621.300(4)(a)</p> <p><i>Generic Permit for Stormwater Discharge from Large and Small Construction Activities</i></p>
	No discharge from a stormwater discharge facility shall cause or contribute to a violation of water quality standards in waters of the state.	Construction activity (e.g., alteration of land contours or land clearing) that results in creation of <i>stormwater management system</i> as defined in F.A.C. 62-25.020(15) – Applicable	<p>F.A.C. 62-25.025</p> <p><i>Regulation of Stormwater Discharge</i></p>

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	<p>Erosion and sediment control best management practices shall be used as necessary during construction activity to retain sediment on site.</p> <p>These practices shall be designed by an engineer or other competent professional experienced in the fields of soil conservation or sediment control according to specific site conditions and shall be shown or noted on the plans of the stormwater management system.</p> <p><i>Note:</i> Plan would be part of CERCLA document such as Remedial or Removal Action Work Plan.</p>		<p>F.A.C. 62-25.025 (7)</p>
<p>Control of Fugitive Dust</p>	<p>No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions.</p>	<p>Land disturbing activity that has potential for unconfined emissions of particulate matter – Applicable</p>	<p>F.A.C. 62-296.320(4)(c)</p> <p><i>General Pollutant Emission Limiting Standards</i></p>

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Waste Characterization – Primary Waste (e.g., excavated soils/sediments, munitions and debris) and Secondary Wastes (e.g., contaminated PPE or treatment residuals)			
Characterization of solid waste (all primary and secondary wastes)	<p>Must determine if solid waste is a hazardous waste using the following method:</p> <ul style="list-style-type: none"> Should first determine if waste is excluded from regulation under 40 C.F.R. 261.4; and <p>Must then determine if waste is listed as a hazardous waste under subpart D 40 C.F.R. Part 261.</p>	Generation of solid waste as defined in 40 C.F.R. 261.2 – Applicable	40 C.F.R. 262.11(a) and (b) F.A.C. 62-730.160
	<p>Must determine whether the waste is (characteristic waste) identified in subpart C of 40 C.F.R. part 261 by either:</p> <p>(1) Testing the waste according to the methods set forth in subpart C of 40 C.F.R. part 261, or according to an equivalent method approved by the Administrator under 40 C.F.R. 260.21; or</p> <p>(2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.</p>	Generation of solid waste which is not excluded under 40 C.F.R. 261.4(a) – Applicable	40 C.F.R. 262.11(c) F.A.C. 62-730.160
	Must refer to Parts 261, 262, 264, 265, 266, 268, and 273 of Chapter 40 for possible exclusions or restrictions pertaining to management of the specific waste.	Generation of solid waste which is determined to be hazardous waste – Applicable	40 C.F.R. 262.11(d) F.A.C. 62-730.160
Characterization of hazardous waste (all primary and secondary wastes)	Must obtain a detailed chemical and physical analysis on a representative sample of the waste(s), which at a minimum contains all the information that must be known to treat, store, or dispose of the waste in accordance with pertinent sections of 40 C.F.R. 264 and 268.	Generation of RCRA hazardous waste for storage, treatment or disposal – Applicable	40 C.F.R. 264.13(a)(1) F.A.C. 62-730.180(1)

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<p>Determinations for management of hazardous waste</p>	<p>Must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under 40 C.F.R. 268 et seq.</p> <p>Note: This determination may be made concurrently with the hazardous waste determination required in Sec. 262.11 of this chapter.</p>	<p>Generation of hazardous waste for storage, treatment or disposal – Applicable</p>	<p>40 C.F.R. 268.9(a) F.A.C. 62-730.183</p>
	<p>Must determine the underlying hazardous constituents [as defined in 40 C.F.R. 268.2(i)] in the characteristic waste.</p>	<p>Generation of RCRA characteristic hazardous waste (and is not D001 non –wastewaters treated by CMBST, RORGS, or POLYM of Section 268.42 Table 1) for storage, treatment or disposal – Applicable</p>	<p>40 C.F.R. 268.9(a) F.A.C. 62-730.183</p>
<p>Determinations for management of hazardous waste</p>	<p>Must determine if the hazardous waste meets the treatment standards in 40 C.F.R. 268.40, 268.45, or 268.49 by testing in accordance with prescribed methods <u>or</u> use of generator knowledge of waste.</p> <p>Note: This determination can be made concurrently with the hazardous waste determination required in 40 C.F.R. 262.11.</p>	<p>Generation of hazardous waste for storage, treatment or disposal – Applicable</p>	<p>40 C.F.R. 268.7(a) F.A.C. 62-730.183</p>
	<p>Must comply with the special requirements of 40 C.F.R. 268.9 in addition to any applicable requirements in C.F.R. 268.7.</p>	<p>Generation of waste or soil that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity for storage, treatment or disposal – Applicable</p>	<p>40 C.F.R. 268.7(a) F.A.C. 62-730.183</p>

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Waste Storage – Primary Waste (e.g., excavated soils/sediments, munitions and debris) and Secondary Wastes (e.g., contaminated PPE or treatment residuals)			
Temporary storage of solid waste munitions	Are subject to regulation under 40 CFR Parts 260 through 279, unless all of the conditions provided in subparagraphs (i) thru (vii)	Waste non-chemical military munitions in storage that exhibit a hazardous waste characteristic – Applicable	40 CFR 266.205(a) F.A.C 62-730.181
Temporary on-site storage of hazardous waste in containers	A generator may accumulate hazardous waste at the facility provided that: <ul style="list-style-type: none"> • waste is placed in containers that comply with 40 C.F.R. 265.171 –173; and • the date upon which accumulation begins is clearly marked and visible for inspection on each container; • container is marked with the words “hazardous waste”; or 	Accumulation of RCRA hazardous waste on site as defined in 40 C.F.R. 260.10 – Applicable	40 C.F.R. 262.34(a); 40 C.F.R. 262.34(a)(1)(i); 40 C.F.R. 262.34(a)(2) and (3) F.A.C. 62-730.160
	<ul style="list-style-type: none"> • container may be marked with other words that identify the contents. 	Accumulation of 55 gal. or less of RCRA hazardous waste or one quart of acutely hazardous waste listed in 261.33(e) at or near any point of generation – Applicable	40 C.F.R. 262.34(c)(1) F.A.C. 62-730.160
Use and management of hazardous waste in containers	If container is not in good condition (e.g. severe rusting, structural defects) or if it begins to leak, must transfer waste from this container to a container that is in good condition.	Storage of RCRA hazardous waste in containers – Applicable	40 C.F.R. 265.171 F.A.C. 62-730.180(2)
	Must use container made or lined with materials compatible with waste to be stored so that the ability of the container to contain is not impaired.		40 C.F.R. 265.172 F.A.C. 62-730.180(2)

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	Containers must be closed during storage, except when necessary to add/remove waste. Container must not be opened, handled and stored in a manner that may rupture the container or cause it to leak.		40 C.F.R. 265.173(a) and (b) F.A.C. 62-730.180(2)
Storage of hazardous waste in container area	Area must have a containment system designed and operated in accordance with 40 C.F.R. 264.175(b)	Storage of RCRA hazardous waste in containers with free liquids – Applicable	40 C.F.R. 264.175(a) F.A.C. 62-730.180(1)
	Area must be sloped or otherwise designed and operated to drain liquid resulting from precipitation, or Containers must be elevated or otherwise protected from contact with accumulated liquid.	Storage of RCRA–hazardous waste in containers that do not contain free liquids (other than F020, F021, F022, F023, F026 and F027) – Applicable	40 C.F.R. 264.175(c)(1) and (2) F.A.C. 62-730.180(1)
Closure performance standard for RCRA container storage unit	Must close the facility (e.g., container storage unit) in a manner that: <ul style="list-style-type: none"> • Minimizes the need for further maintenance; • Controls minimize or eliminate to the extent necessary to protect human health and the environment, post – closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or the atmosphere; and Complies with the closure requirements of subpart, but not limited to, the requirements of 40 C.F.R. 264.178 for containers.	Storage of RCRA hazardous waste in containers – Applicable	40 C.F.R. 264.111 F.A.C. 62-730.180(1)

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<p>Closure of RCRA container storage unit</p>	<p>At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soils containing or contaminated with hazardous waste and hazardous waste residues must be decontaminated or removed.</p> <p>[Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with 40 C.F.R. 261.3(d) of this chapter that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of parts 262 through 266 of this chapter].</p>	<p>Storage of RCRA hazardous waste in containers in a unit with a containment system – Applicable</p>	<p>40 C.F.R. 264.178 F.A.C. 62-730.180(1)</p>
<p>Storage and processing of non-hazardous waste</p>	<p>No person shall store, process, or dispose of solid waste except as authorized at a permitted solid waste management facility or a facility exempt from permitting under this chapter.</p> <p>No person shall store, process, or dispose of solid waste in a manner or location that causes air quality standards to be violated or water quality standards or criteria of receiving waters to be violated.</p>	<p>Management and storage of solid waste – Applicable</p>	<p>F.A.C. 62 701.300(1)(a) and (b)</p>

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Waste Treatment and Disposal – Primary Waste (e.g., excavated soils/sediments, munitions and debris) and Secondary Wastes (e.g., contaminated PPE or treatment residuals)			
Treatment and Disposal of waste military munitions	The treatment and disposal of hazardous waste military munitions are subject to the applicable technical standards in 40 CFR parts 260 through 270. <i>Note:</i> Substantive requirements for treatment and disposal of remediation wastes considered RCRA hazardous waste listed below.	Waste non-chemical military munitions that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR part 261 – Applicable	40 CFR 266.206 F.A.C. 62-730.181
	Emergency detonations or thermal treatment of certain hazardous waste (military munitions).	Treatment of non-chemical military munitions - Applicable	F.A.C. 62.730.320
	Treatment of waste non-chemical military munitions on-site.	Treatment of non-chemical military munitions - Applicable	40 CFR 266.202
Disposal of RCRA <i>hazardous waste debris</i> in a land-based unit (i.e., landfill)	Must be treated prior to land disposal as provided in 40 C.F.R. 268.45(a)(1)–(5) unless EPA determines under 40 C.F.R. 261.3(f)(2) that the debris no longer contaminated with hazardous waste <u>or</u> the debris is treated to the waste –specific treatment standard provided in 40 C.F.R. 268.40 for the waste contaminating the debris.	Land disposal, as defined in 40 C.F.R. 268.2, of restricted RCRA–hazardous debris – Applicable	40 C.F.R. 268.45(a) F.A.C. 62-730.183

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<p>Disposal of <i>treated hazardous debris</i></p>	<p>Debris treated by one of the specified extraction or destruction technologies on Table 1 of 40 CFR 268.45 and which no longer exhibits a characteristic is not a hazardous waste and need not be managed in RCRA Subtitle C facility</p> <p>Hazardous debris contaminated with listed waste that is treated by immobilization technology must be managed in a RCRA Subtitle C facility.</p>	<p>Treated debris contaminated with RCRA listed or characteristic waste – Applicable</p>	<p>40 C.F.R. 268.45(c)</p>
<p>Waste Transportation – Primary and Secondary Wastes</p>			
<p>Transportation of hazardous waste <i>on-site</i></p>	<p>The generator manifesting requirements of 40 C.F.R. 262.20–262.32(b) do not apply. Generator or transporter must comply with the requirements set forth in 40 C.F.R. 263.30 and 263.31 in the event of a discharge of hazardous waste on a private or public right-of-way.</p>	<p>Transportation of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right-of-way – Applicable</p>	<p>40 C.F.R. 262.20(f)</p> <p>F.A.C. 62-730.160</p>
<p>Transportation of <i>hazardous materials</i></p>	<p>Shall be subject to and must comply with all applicable provisions of the HMTA and HMR at 49 C.F.R. 171–180 related to marking, labeling, placarding, packaging, emergency response, etc.</p>	<p>Any person who, under contract with a department or agency of the federal government, transports “in commerce,” or causes to be transported or shipped, a hazardous material – Applicable</p>	<p>49 C.F.R. 171.1(c)</p>
<p>Transportation of <i>solid waste military munitions</i></p>	<p>Waste non-chemical military munitions that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR part 261 are subject to regulation under 40 CFR parts 260 through 270 unless all of the conditions specified in paragraph (a)(1)(i)-(iv) are met.</p>	<p>Waste non-chemical military munitions that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 C.F.R. part 261 – Applicable</p>	<p>40 C.F.R. 266.203(a)(1)</p> <p>F.A.C 62-730.181</p>

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	The conditional exemption in 40 CFR 266.203(a)(1) from regulation as hazardous waste shall only apply to the transportation of non-chemical waste military munitions. It does not affect the regulatory status of the waste military munitions as hazardous wastes with regard to storage, treatment, or disposal.		40 C.F.R. 266.203(a)(3) F.A.C 62-730.181
Transportation of samples (i.e. contaminated soils and wastewaters)	Are not subject to any requirements of 40 C.F.R. Parts 261 through 268 or 270 when: <ul style="list-style-type: none"> the sample is being transported to a laboratory for the purpose of testing; or the sample is being transported back to the sample collector after testing the sample is being stored by sample collector before transport to a lab for testing 	Samples of solid waste <u>or</u> a sample of water, soil for purpose of conducting testing to determine its characteristics or composition – Applicable	40 C.F.R. 261.4(d)(1)(i)–(iii) F.A.C. 62-730.030
	In order to qualify for the exemption in paragraphs (d)(1)(i) and (ii), a sample collector shipping samples to a laboratory must: <ul style="list-style-type: none"> Comply with U.S. DOT, U.S. Postal Service, or any other applicable shipping requirements Assure that the information provided in (1) thru (5) of this section accompanies the sample. Package the sample so that it does not leak, spill, or vaporize from its packaging. 		40 C.F.R. 261.4(d)(2)(i)(A) and (B) F.A.C. 62-730.030

ARAR = Applicable or Relevant and Appropriate Requirement.
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act.
C.F.R. = Code of Federal Regulations.
CWA = Clean Water Act.
DOT = Department of Transportation.

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EPA = Environmental Protection Agency.
F.A.C. = Florida Administrative Code, Chapters as specified.
F.S. = Florida Statutes.
HMR = Hazardous Materials Regulations.
HMTA = Hazardous Materials Transportation Act.
LDR = Land Disposal Restrictions.
PPE = Personal Protection Equipment.
RCRA = Resource Conservation and Recovery Act.
TCLP = Toxicity Characteristic Leaching Procedure.
UST = Universal Treatment Standard.

**RESPONSE TO USEPA/USEPA LEGAL COMMENTS DATED MAY 29, 2012
DRAFT TIME-CRITICAL ACTION MEMORANDUM FOR MUNITIONS AT OPERABLE UNIT 5,
SITE 15 – BLUE ORDNANCE DISPOSAL AREA DATED FEBRUARY 2012
NAS CECIL FIELD, JACKSONVILLE, FLORIDA**

Note, a new Non-Time Critical Action Memorandum was prepared in response to the May 15, 2012, teleconference, May 17, 2012, BCT Meeting, and comments received from USEPA/USEPA Legal. Therefore, responses below refer to new text that has replaced prior information presented in the draft Time Critical Action Memorandum.

1. **General Comment** – Overall the Action Memorandum is consistent with EPA guidance and includes fairly good information. However, as stated during telecom, the document should reflect that an FS was performed to evaluate other response actions and that the preferred alternative will be conducted as a non-time critical removal. Specific comments below further address this point. Also, I've included reference to an approved Action Memorandum at Camp Lejeune that provides exemplary language for certain sections. A copy of the document is attached with my e-mail transmittal of these comments.

Response: The comment has been noted. The Action Memorandum has been revised throughout to state that the preferred alternative is being conducted as a non-time critical removal. Information about the FS has been added to Sections II.B.1, Previous Actions, IV.A.1, Proposed Response Action, and VI.A.3, Descriptions of Alternative Technologies. Per responses below, language has been added to the Action Memorandum per EPA comments.

2. **Comment: Section 1 Purpose** – Please add a paragraph to indicate that the document was prepared in accordance with CERCLA, NCP and EPA guidance. See example below. Also, add the following sentence to the end of the first paragraph: “This Action Memorandum serves as the decision document to conduct the removal action at Site 15 to remove MEC/MPPEH.”

This Action Memorandum was prepared in accordance with the remedial program requirements defined by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, the Superfund Amendments and Reauthorization Act of 1986 (SARA), the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and the United States Environmental Protection Agency's (USEPA) Superfund Removal Guidance For Preparing Action Memoranda (USEPA, 2009).

Response: The first paragraph of Section I has been revised, “This Action Memorandum documents the non-time critical removal action (NTCRA) for munitions removal at Operable Unit (OU) 5, Site 15 – Blue 10 Ordnance Disposal Area at the former Naval Air Station (NAS) Cecil Field in Jacksonville, Florida. This Action Memorandum has been prepared in accordance with the remedial program requirements defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, the Superfund Amendments and Reauthorization Act of 1986 (SARA), the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), United States Environmental Protection Agency (USEPA) Superfund Removal Guidance for Preparing Action Memoranda (USEPA, 2009), Navy Environmental Restoration Program (NERP) Manual (2006), and Navy Munitions Response Program (MRP) Guidance (2005). This Action Memorandum

serves as the decision document to conduct the removal action at Site 15 to remove MEC/MPPEH.”

- 3. Comment: Section 1 Purpose** – Note that MEC not blown in place would not fall under the exclusion provided in 40 CFR 266.202 which requires that recovery, collection, and destruction of UXO and munitions fragments take place “on-range”. The ARARs table may include this exclusion.

Response: It is noted that MEC not blown in place would not fall under the exclusion provided in 40 CFR 266.202. A line has been added to page 9 of the Action-Specific ARAR table under the action “Treatment and Disposal of Waste Military Munitions”, to indicate that 40 CFR 266.2.2 is applicable to treatment of waste military munitions on-site.

- 4. Comment: Section II.A.1 RSE** – Please add statement that an FS was conducted to develop and evaluate response action alternatives which was finalized on [insert date].

Response: The following has been added as the last sentence of Section II.A.1, “A Feasibility Study (FS) was conducted to develop and evaluate response action alternatives, which was finalized in June 2012.”

- 5. Comment: Section II.A.3, last paragraph** – Add sentence describing how demolition wastes were handled and disposed of off-site. Reference the language added to the Draft Final FOST in response to EPA Legal comment.

Response: Per language added to the Draft Final FOST, the following text has been added to the end of Section II.A.4:

“Approximately 21,724 tons of contaminated soil was excavated, transported, and disposed from the 22 excavation areas located within 17 designated areas during the 2008/2009 removal actions. Contaminated soil was transported to Waste Management's Chesser Island Road Landfill in Folkston, Georgia, or Republic Services' Broadhurst Environmental Landfill in Screven, Georgia, for disposal.

Approximately 4,833 tons of excavated soil that exceeded toxicity characteristic leaching procedure (TCLP)-lead concentrations was treated with approximately 270 tons of Free Flow Reagent to meet toxicity characteristic criteria for disposal as non-hazardous waste. An additional 16,891 tons of non-hazardous excavated soil from the 22 excavation areas was also disposed at the above listed disposal facilities.

During 2008/2009 removal actions, recovered MEC was staged in a Type 2 high explosive (HE) storage magazine and disposed by open detonation within one of the excavation areas. Following MEC disposal, visible residual materials and/or impacted soil was recovered from the detonation site and managed, transported, and disposed with the above mentioned excavated soil. Post-MEC detonation site impact determination included the soil sampling and laboratory analyses from the detonation site after MEC detonations to ensure soil impacted by MEC detonations had been sufficiently removed.”

6. **Comment:** **Section II.A.4** – Should indicate that releases of hazardous substances such as lead from MEC is also likely considering that remedial action required at Site 15 due to elevated levels of lead in surface soil.

Response: The following text has been added to the end of Section II.A.4, “In addition, releases of hazardous constituents such as lead from discarded munitions from a former small arms, skeet, and trap range resulted in contamination of soil at Site 15 that was considered Resource Conservation and Recovery Act (RCRA) characteristic hazardous waste once generated. Some of those lead contaminated soils were excavated, treated and disposed off-site as part of the 2008/2009 removal actions described above.”

7. **Comment:** **Section II.A.5** – Add text about FFA and purpose to address environmental contamination at the facility. See example text below.

2.4 National Priority List Status

MCB CamLej (USEPA ID: NC6170022580) was placed on the CERCLA NPL effective November 4, 1989 (54 Federal Register 41015, October 4, 1989). Subsequent to this listing, the USEPA, NCDENR, DoN, and the Marine Corps entered into a Federal Facilities Agreement (FFA) for MCB CamLej to address environmental concerns present at the Base (MCB CamLej, 1991). The IRP is responsible for addressing these concerns and managing responses as appropriate to CERCLA and the Resource Conservation and Recovery Act (RCRA).

Response: Section II.A.5 has been revised, “The former NAS Cecil Field (USEPA ID FL5 170 022 474) was placed on the NPL by the USEPA in December 1989. Subsequent to this listing, the Navy, USEPA, and Florida Department of Environmental Protection (FDEP) entered into a Federal Facility Agreement (FFA) for NAS Cecil Field to address environmental concerns present at the facility. The Installation Restoration Program (IRP) and MRP are responsible for addressing these concerns and managing responses as appropriate to CERCLA and RCRA.”

8. **Comment:** **Section II.B.1 Previous Actions** – As noted in General Comment #1, document that an FS was performed and finalized.

Response: The following text has been added to the end of Section II.B.1, “An FS Report was prepared which describes the formulation and evaluation of remedial alternatives to remove MEC/MPPEH and munitions-related debris from Site 15 (Tetra Tech, 2012). Within the FS report, the results of previous investigations were used to develop and evaluate potential remedial alternatives to reduce risks to human health and the environment that have been identified at Site 15. The FS established remedial action objectives (RAOs) and cleanup goals; screened remedial technologies; and assembled, evaluated, and compared a No Action alternative and three active remedial alternatives each with three options (options A, B, and C).”

9. **Comment:** **Section II.B.2 Current Actions** – Add brief description of the remedial action for soils conducted at Site 15 and those LUCs where a remedy component that remains in effect at this site.

Response: The remedial action for soils conducted in 2008/2009 at Site 15 is described in Section II.B.1, Previous Actions. Section II.B.2 has been revised as follows, “There are currently no activities being conducted at Site 15. However, land use controls (LUCs) are in place as specified in the LUC RD for Site 15 approved by USEPA and FDEP (Tetra Tech, 2009). Existing LUCs limit site uses to low-intensity recreational uses including activities such as hiking, biking, horseback riding, birding, and hunting. Medium- (picnicking and camping) and high-intensity (children’s playgrounds and contact sports) recreational, residential, and commercial/industrial uses are not permitted. No man-made attractions can be provided that would entice people, particularly small children, to frequently visit the site, which is consistent with the property’s proposed reuse as a natural resource corridor. LUCs already in place also prohibit excavation of soil from Site 15 without prior written approval from the Navy, USEPA, and FDEP.”

- 10. Comment: Section II.C.1 State and Local Authorities Roles to Date** – Note that the EPA is the regulatory agency with oversight of CERCLA sites on the NPL, where there is an FFA in place. Revise sentence accordingly. Also add text similar to that below.

2.7 State and Local Authorities’ Role

The USEPA and NCDENR have been involved in planning and reviewing site investigation reports and this Action Memorandum. Comments on this Action Memorandum were solicited from the USEPA, NCDENR, and MCB CamLej. Involvement by all parties in the planning process will continue throughout the TCRA activities through meetings and correspondence.

Response: The sentence concerning regulatory oversight has been revised, “USEPA is the regulatory agency with oversight of CERCLA sites on the NPL where there is an FFA in place, including the former NAS Cecil Field.” The following has been added to the end of Section II.C.1, “The USEPA and FDEP have been involved in planning and reviewing site investigation reports and this Action Memorandum. Comments on this Action Memorandum were solicited from USEPA and FDEP. Involvement by all parties in the planning process will continue throughout the NTCRA activities through meetings and correspondence.”

- 11. Comment: Section III. A, last paragraph** - Add/revise sentences to clarify that Navy will transfer Site 15 parcel to the City of Jacksonville through the Dept of Interior and that property will be used as low intensity recreational area. The grantee will be responsible along with the Navy for ensuring the LUCs remain in place and activities compatible with land use.

Response: The last two sentences of the last paragraph of Section III.A have been revised as follows, “The Navy will transfer the Site 15 parcel to the City of Jacksonville through the Department of Interior; the property will be used as a low intensity recreational area. The Navy and the grantee will be responsible for ensuring that the LUCs remain in place and that activities are compatible with land use.”

- 12. Comment: Section III. B** – Section seems redundant considering identical text in Section A. above. Consider deleting text and replacing with explanation of how MEC would present

continued risk to fauna and could be source of lead contamination in soil due to leaching over time if left in-place.

Response: Text previously presented in Section III.B has been deleted and replaced with the following, “Threats to the environment are also outlined in Section 300.415 of the NCP, 40 CFR Section 300.415. Section 300.415, paragraphs (b)(2)(vi) and (b)(2)(viii) also apply when considering threats to the environment that currently exists at this site. If left in place, MEC would present continued risk to flora and fauna and could be a source of contamination in soil due to leaching over time.”

- 13. Comment: Section IV. Endangerment Determination** – Consider rewording to state that MEC due to explosive potential presents imminent and substantial danger, thus the removal action described in the Action Memo is necessary to address this situation.

Response: The last paragraph of Section IV has been revised and replaced with the following, “MEC due to explosive potential presents imminent and substantial danger, thus the removal action described in this Action Memorandum is necessary to address this situation.”

- 14. Comment: Section V. A.1 Proposed Action, p. 9** – A couple of the bullets are repeated and thus one should be deleted. Example #8 and #10 are repeats of #6. Also, revise #6 to indicate that removed munitions debris will be characterized and then disposed off-site as either solid or hazardous waste.

Response: Redundant bullets have been deleted from the Action Memorandum. The remaining bullet reads as follows, “Munitions-related items (including MEC, MDEH, and MDAS) will be manually removed and treated on site via detonation with donor explosives as necessary where MEC/MDEH is encountered from the ground surface, from the subsurface during intrusive anomaly investigation, and from excavated soil. A soil sample will be collected from the ground surface after any detonation. Metallic non-munitions debris from any detonation will also be removed. No soil will be removed with the munitions-related items and non-munitions debris items; any soil clinging to the items will be removed in place. Munitions-related items removed during this removal action will be characterized and then disposed off-site as either solid or hazardous waste.”

- 15. Comment: Section V.A.1 Proposed Action, p. 9** – Revise #9 bullet to add clarification that excavated soils are returned to areas daily and that soils areas will be sampled to verify that surface contamination, if present, at levels consistent with the remedial action cleanup levels.

Response: See revisions provided in response to comment #14 which address soil sampling after detonations. Clarification has been added to the mechanical excavation bullet, “Mechanical excavation and manual inspection of all soil from each grid within the former ordnance disposal area will be conducted, as necessary, to a maximum depth of 1 foot bgs (previously adequately characterized). The soil will be directly laid by the excavator on the ground surface adjacent to the excavation grid. All soil will be managed within/directly adjacent to the excavation grid. The excavated material will then be manually investigated by UXO Technicians for MEC/MPPEH and non-munitions related items using

visual and detector-aided surveys, UXO Technicians will perform a 100-percent detector-aided surface survey of all of the spread soil. All MEC/MPPEH items and non-munitions related debris identified will be manually removed. Upon completion of each excavation area, or at the end of each day, the cleared soil will be backfilled into the original excavation grid area. The process will continue for each excavation grid area.” Per discussions held during the May 17, 2012, BCT Meeting, soil samples will only be collected from the ground surface after any detonation.

16. Comment: Section V.A.1 Proposed Action, p. 10 – Revise #13 bullet to indicate that existing LUCs are specified in the LUC RD approved by EPA and FDEP. Add sentence to indicate that the following two sub-bullets are new LUCs that will be added to the remedy for Site 15 and the LUC RD revised accordingly.

Response: The description of LUCs has been revised as follows:

- “Application of existing LUCs at Site 15 include:
 - LUCs already in place as specified in the LUC RD for Site 15 approved by USEPA and FDEP (Tetra Tech, 2009):
 - LUCs already in place that limit site uses to low-intensity recreational uses including activities such as hiking, biking, horseback riding, birding, and hunting. Medium- (picnicking and camping) and high-intensity (children’s playgrounds and contact sports) recreational, residential, and commercial/industrial uses are not permitted. No man-made attractions can be provided that would entice people, particularly small children, to frequently visit the site, which is consistent with the property’s proposed reuse as a natural resource corridor. LUCs already in place also prohibit excavation of soil from Site 15 without prior written approval from the Navy, USEPA, and FDEP.
 - New LUCs that will be added to the remedy for Site 15:
 - Caution/UXO Hazard warning signs will be posted along access roads, bike paths, and walking trails to warn that munitions-related items may be present.
 - A Public Educational Program is warranted to warn the visiting public (hikers or hunters) of the potential presence of ordnance, the importance of not disturbing (yet reporting) suspect items observed within the project site, and the importance of not conducting intrusive activities. The Public Education Program may include any or all of the following: signage, periodic public safety awareness meetings and/or distribution of educational media to local police, fire departments, and libraries, where they would be available to the public.”

17. Comment: Section V.A.2 Contribution to Remedial Performance – Add statement that the removal is consistent with the selected remedial action and will contribute to the remedial performance by removing MEC, reducing risk to HH&E and thereby allow site to be utilized for intended use as recreational area.

Response: The following has been added as the last sentence of Section V.A.2, “The removal as described in this Action Memorandum is consistent with the selected remedial action and will contribute to the remedial performance by removing MEC, reducing risk to human health and the environment and will thereby allow the site to be utilized for the intended use as low-intensity recreational area.”

18. Comment: Section V.A.3 Description of Alternative Technologies – Revise section text to indicate that remedial alternative were developed and evaluated in the approved FS which is part of the AR file for this Site. Consider short listing of the alternatives from the FS.

Response: Section V.A.3 has been revised and replaced with the following, “An FS for munitions removal (Tetra Tech, 2012) was developed which considered a no action alternative (Alternative 1) along with several other active removal action alternatives including: Areas of Concern, Select Surface and Shallow Subsurface MEC and Anomaly Removal (Alternative 2); All Surface and Shallow Subsurface MEC and Anomaly Removal (Alternative 3); and, All Surface and Shallow Subsurface MEC Removal (Alternative 4). Each of these active removal action alternatives had three different options for handling excavated soil; off-site hazardous soil disposal (Option A), on-site hazardous soil treatment and off-site non-hazardous soil disposal (Option B), and, mechanical excavation and manual investigation and removal (Option C). All alternatives were evaluated and compared for overall protection of human health and the environment, compliance with applicable or relevant and appropriate requirements (ARARs), long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, and cost. The selected NTCRA Alternative 2C, Areas of Concern, Select Surface and Shallow Subsurface MEC Anomaly Removal with mechanical excavation and manual investigation and removal, was considered to be the most effective and adequately protective technology for the munitions removal action work at Site 15. The NTCRA was chosen primarily based on protection of human health and the environment and cost. Based on the results of the MEC HA described in Section IV, this alternative provides the same amount of protectiveness as the other more extensive alternatives and at the lowest cost. Additionally, this alternative is easily implementable.”

19. Comment: Section V.A.4 EE/CA – As mentioned during the telecom and as noted in GC #1, document that FS performed and is essentially the equivalent of an EE/CA since evaluated several response actions to address the MEC at Site 15.

Response: Section V.A.4 has been revised and replaced with the following, “An Engineering Evaluation/Cost Analysis (EE/CA) was not developed because all of the required information is presented in the FS for munitions removal that evaluated several response actions to address MEC at Site 15 (Tetra Tech, 2012).”

20. Comment: Section V.A.5 ARARs – Delete the first paragraph and replace with the following example text modified as appropriate for this site. The bullets can remain but should be introduced as a summary of the ARARs that are included in the Tables. Consider stand alone Section for ARARs. [See comment below about Munitions requirements that are not ARARs.]

5.1.3 Applicable or Relevant and Appropriate Requirements

In accordance with 40 Code of Federal Regulations (CFR) § 300.415(j) of the NCP on-site removal actions conducted under CERCLA of 1980, as amended, are required to attain 'applicable' or 'relevant and appropriate' requirements (ARARs) to the extent practicable, considering the exigencies of the situation. In determining whether compliance with ARARs is practicable, the lead agency may consider appropriate factors, including: 1) the urgency of the situation; and 2) the scope of the removal action. The Navy has determined that compliance with all of the identified ARARs is practicable.

ARARs are divided into three categories: Chemical-, Location- and Action-Specific. Chemical-specific ARARs apply to individual contaminants. Location- specific ARARs depend upon the location of the contamination and potential restrictions on activities conducted in these areas (i.e., wetlands, flood plains, etc.). Action-specific ARARs govern the removal action and are usually technology- or activity-based directions or limitations that control actions taken at CERCLA sites. In addition to ARARs, the lead and support agencies may, as appropriate, identify other advisories, criteria, or guidance "to-be-considered" (TBC) that may be useful in developing CERCLA remedies.

Table 2 presents the ARARs for the TCRA. There are no Chemical-Specific ARARs that are applicable or relevant and appropriate to the action.

Response: Tables 1 and 2, Location- and Action-Specific ARARs and TBCs tables have been added as Attachment 2 to the Action Memorandum. Section V.A.5 text has been revised and replaced with the following:

"The term ARARs is defined in the NCP (40 CFR §300.5) as follows:

- Applicable requirements mean those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable.
- Relevant and appropriate requirements mean those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not applicable to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to these encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be relevant and appropriate.

ARARs are classified into three broad categories based on the manner in which they are applied during a removal action. These categories are as follows:

- Chemical-specific ARARs were developed to provide health- or risk-based concentration (RBC) limits for environmental media. These limits are specific for an individual chemical or group of chemicals, and often these ARARs are used to determine the extent of site remediation. Chemical-specific ARARs may be concentration-based cleanup goals or may provide the basis for calculating such levels. In cases where no chemical-specific ARAR exists, chemical advisories may be used to develop removal objectives.

- Location-specific ARARs are considered in view of natural or man-made site features. These ARARs are intended to limit activities within designated areas.
- Action-specific ARARs pertain to the implementation of a given remedy. These ARARs control or restrict hazardous substance- or pollutant-related activities and are considered when specific removal activities are planned for a site.

Chemical contamination at Site 15 has previously been addressed for the intended land use; therefore, there are no chemical-specific ARARs or To Be Considered (TBC) criteria for this removal action. The NTCRA documented in this Action Memorandum will comply with ARARs to the extent practical. Tables 1 and 2 of Attachment 2 provide federal and state location-specific and action-specific ARARs and TBCs for the proposed NTCRA at Site 15.”

21. Comment: Section V.A.5 Location-specific ARARs – The ESA bullets and the Migratory Bird Treaty Act bullet should be captured in the proper format in the Location-specific ARARs table since some of these may not have been included on the sample table provided by EPA R4 attorney.

Response: Table 1, Location-Specific ARARs and TBCs table, has been added to Attachment 2 to the NTCRA, the Location-Specific table has been revised and formatted per USEPA comments on the FS. Two lines have been added to the end of the Location-Specific table, Presence of State-Listed Threatened and Endangered Wildlife and Presence of Migratory Birds. These entries will also be added to the Location-Specific table presented in the FS.

22. Comment: Section V.A.5 ARARs – The requirements that apply to the MEC activities and the various instructions, guidance documents are not per se ARARs, which only include federal or more stringent State environmental laws or regulations. Accordingly, please add a subsection (separate from the ARARs section) for these items entitled *Munitions Response Requirements and Guidance* or similar.

Response: A section V.A.5.i has been added to the Action Memorandum and the munitions guidance documents previously listed in section V.A.5 are listed in this new subsection.

23. Comment: Section V.A.6. Project Schedule – Please provide summary table showing anticipated dates of initiation and completion. See example below.

5.1.4 Project Schedule

Activities	Dates (MM-DD-YY)	
	Anticipated Date of Initiation	Anticipated Date of Completion
Action Memorandum	03-03-11	04-30-11
Implementation Plan	03-09-11	04-30-11
Field Work	05-09-11	06-09-11
Report	05-15-11	06-15-11
Public Notice	06-15-11	06-15-11
Public Comment Period	06-15-11	07-15-11

Response: The following schedule has been provided in Section V.A.6.

Activities	Dates (MM-DD-YY)	
	Anticipated Date of Initiation	Anticipated Date of Completion
Action Memorandum	5-01-12	6-19-12
Remedial Action Work Plan	4-30-12	6-14-12
Field Work	6-25-12	7-24-12
Remedial Action Closure Report	7-23-12	9-21-12
After Action Report	7-23-12	9-11-12
Public Notice	6-20-12	6-20-12
Public Comment Period	6-20-12	7-20-12

24. Comment: Section X. Recommendation – Add the following sentence: Conditions at the Site meet the NCP Section 40 CFR 300.415(b)(2) criteria for removal action and the Navy, in consultation with EPA and FDEP, recommend the response action commence as soon as practicable due to the potential threat to HH&E.

Response: The following has been added as the last sentence of Section X, “Conditions at the Site meet the NCP Section 40 CFR 300.415(b)(2) criteria for removal action and the Navy, in consultation with USEPA and FDEP, recommend the response action commence as soon as practicable due to the potential threat to human health and the environment.”