
FINAL



Site Specific Work Plan Addendum to the MMRP
Programmatic Work Plan for the Site Inspection of
Montauk Naval Sub Base

FUDS Project # **C02NY076602**

Prepared Under: **Contract No. W912DY-04-D-0017**
Delivery Order # 00170001

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
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Huntsville, AL 35807

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September 2008

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9/5/08

Roger Azar
Alion Program Manager

Date



9/5/08

Curtis Mitchell
Alion Corporate Quality Management Reviewer

Date

September 2008

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LIST OF ACRONYMS AND ABBREVIATIONS

ADR	Automated Data Review
Alion	Alion Science and Technology Corporation
APP	Accident Prevention Plan
ASR	Archive Search Report
BHG	Borehole Geophysics
bgs	Below ground surface
°C	Degrees Celsius
CENAB	Corps of Engineers North Atlantic Baltimore
CENAN	Corps of Engineers North Atlantic New York
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CONUS	Continental United States
CSM	Conceptual Site Model
CWM	Chemical Warfare Materiel
CX	Center of Expertise
DC	Design Center
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
DNT	Dinitrotoluene
DoA	Department of the Army
DoD	Department of Defense
DQO	Data Quality Objective

EDD	Electronic Data Deliverable
EDS	Environmental Data Services, Inc.
EM	Engineering Manual
EOD	Explosive Ordnance Disposal
ER	Engineering Regulation
ERA	Ecological Risk Assessment
Ft	Foot (or feet)
FTL	Field Team Leader
FUDS	Formerly Used Defense Site(s)
GIS	Geographic Information Systems
GPL	GPL Laboratories, LLLP
GPS	Global Positioning System
GSA	General Services Administration
HFA	Human Factors Applications, Inc.
HHE	Health Hazard Evaluation
HHRA	Human Health Risk Assessment
HRS	Hazard Ranking System
HTRW	Hazardous Toxic and Radiological Waste
ID	Identification
IDW	Investigative-Derived Waste
IGD	Interim Guidance Document
INPR	Inventory Project Report

Lb	Pound(s)
LLLP	Limited Liability Limited Partnership
m	meter
MC	Munitions Constituents
MCL	Maximum Contaminant Levels
MD	Munitions Debris
MDL	Method Detection Limits
MEC	Munitions and Explosives of Concern
MFR	Memorandum for Record
mg/kg	milligram per kilogram
MHT	Mean High Tide
MK	Mark
MM CX	Military Munitions Center of Expertise
MPPEH	Material Potentially Presenting an Explosive Hazard
MMRP	Military Munitions Response Program
MQO	Measurement Quality Objective
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSSL	Medium-Specific Screening Level
msl	Mean Sea Level
NAD	North American Datum
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDAI	No Department of Defense Action Indicated
NG	Nitroglycerine
NOAA	National Oceanographic and Atmospheric Administration

NTCRA	Non-Time Critical Removal Action
NYSDEC	New York State Department of Environmental Conservation
NYSOP	New York State Office of Parks
oz	ounce
OEW	Ordnance and Explosive Waste
PFSP	Programmatic Field Sampling Plan
PGM	Program Manager
PM	Project Manager
PMMQL	Preferred Maximum Method Quantitation Limits
PPE	Personal Protective Equipment
PQAPP	Programmatic Quality Assurance Project Plan
PRG	Preliminary Remediation Goal
PSAP	Programmatic Sampling and Analysis Plan
PWP	Programmatic Work Plan
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
RAC	Risk Assessment Code
RBC	Risk Based Concentration
RCWM	Recovered Chemical Warfare Materiel
RI/FS	Remedial Investigation and Feasibility Study
RMIS	Restoration Management Information System
ROE	Right of Entry

SI	Site Inspection
SSHASP	Site-Specific Health and Safety Plan
SSHO	Site Safety and Health Officer
SSL	Soil Screening Level
SS-SAP	Site-Specific Sampling and Analysis Plan
SS-WP	Site-Specific Work Plan Addendum
T&E	Threatened and Endangered
TAL	Target Analyte List
TCRA	Time Critical Removal Action
TPP	Technical Project Planning
USACE	U.S. Army Corps of Engineers
USAESCH	U. S. Army Engineering and Support Center, Huntsville
USDA	U. S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U. S. Geological Survey
UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance

GLOSSARY OF TERMS

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) – Congress enacted CERCLA, commonly known as Superfund, on 11 December 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment (USACE 2004b).

Discarded Military Munitions (DMM) – Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of, consistent with applicable environmental laws and regulations (10 U.S.C.2710(e)(2)).

Explosive Ordnance Disposal (EOD) – The detection, identification, on-site evaluation, rendering safe, recovery, and final disposal of unexploded ordnance and of other munitions that have become an imposing danger, for example, by damage or deterioration (USACE 2000).

Explosives Safety – A condition where operational capability and readiness, people, property, and the environment are protected from the unacceptable effects or risks of potential mishaps involving military munitions (DoA 2005).

Formerly Used Defense Site (FUDS) – A FUDS is defined as a facility or site (property) that was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances. By the Department of Defense Environmental Restoration Program (DERP) policy, the FUDS program is limited to those real properties that were transferred from DoD control prior to 17 October 1986. FUDS properties can be located within the 50 States, District of Columbia, Territories, Commonwealths, and possessions of the United States (USACE 2004b)

Material Potentially Presenting an Explosive Hazard (MPPEH) – Material potentially containing explosives or munitions (e.g., munitions containers and packaging material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related debris); or material potentially containing a high enough concentration of explosives such that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, or ventilation ducts that were associated with munitions production, demilitarization or disposal operations). Excluded from MPPEH are munitions within DoD's established munitions management system and other hazardous items that may present explosion hazards (e.g., gasoline cans, compressed gas cylinders) that are not munitions and are not intended for use as munitions (DoA 2005).

Military Munitions – All ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including

bulk explosives, and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges; and devices and components thereof. The term does not include wholly inert items; improvised explosive devices; and nuclear weapons, nuclear devices, and nuclear components, other than non-nuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) have been completed (10 U.S.C 101(e)(4)(A) through (C)).

Munitions Response Site Prioritization Protocol (MRSPP) – The MRSPP was published as a rule on October 5, 2005. This rule implements the requirement established in section 311(b) of the National Defense Authorization Act for Fiscal Year 2002 for the Department to assign a relative priority for munitions responses to each location (hereinafter MRS) in the Department’s inventory of defense sites known or suspected of containing unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC). The DoD adopted the MRSPP under the authority of 10 USC 2710(b). Provisions of 10 USC 2710(b) require that the DOD assign to each defense site in the inventory a relative priority for response activities based on the overall conditions at each location taking into consideration various factors related to safety and environmental hazards (710 FR 58016).

Munitions and Explosives of Concern (MEC) – This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks means: (A) Unexploded ordnance (UXO), as defined in 10 U.S.C. 101(e)(5); (B) Discarded military munitions (DMM), as defined in 10 U.S.C. 2710(e)(2); or (C) Munitions constituents (e.g., TNT, RDX), as defined in 10 U.S.C. 2710(e)(3), present in high enough concentrations to pose an explosive hazard (10 USC 2710(e)(2)).

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

Munitions Debris (MD) – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal (10 USC 2710(e)(2)).

Munitions Response Area (MRA) – An area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples include former range and munitions burial areas. A munitions response area is comprised of one or more munitions response sites (32 CFR 179.3).

Munitions Response Site (MRS) – A discrete location within an MRA that is known to require a munitions response (32 CFR 179.3).

Non-Time Critical Removal Action (NTCRA) – Actions initiated in response to a release or threat of a release that poses a risk to human health or the environment where more than six months planning time is available (USACE 2000).

Range – A designated land or water area that is set aside, managed, and used for range activities of the Department of Defense. The term includes firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, electronic scoring sites, buffer zones with restricted access and exclusionary areas. The term also includes airspace areas designated for military use in accordance with regulations and procedures prescribed by the Administrator of the Federal Aviation Administration (10 U.S.C. 101(e)(1)(A) and (B)).

Range Activities – Research, development, testing, and evaluation of military munitions, other ordnance, and weapons systems; and the training of members of the armed forces in the use and handling of military munitions, other ordnance, and weapons systems (10 U.S.C. 101(e)(2)(A) and (B)).

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

Time Critical Removal Action (TCRA) – Removal actions conducted to respond to an imminent danger posed by the release or threat of a release, where cleanup or stabilization actions must be initiated within six months to reduce risk to public health or the environment (USACE 2000).

Unexploded Ordnance (UXO) – Military munitions that (A) have been primed, fuzed, armed, or otherwise prepared for action; (B) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and (C) remain unexploded whether by malfunction, design, or any other cause (10 U.S.C. 101(e)(5)(A) through (C)).

1. INTRODUCTION

This Site-Specific Work Plan (SS-WP) Addendum has been prepared to document the Site Inspection (SI) activities to be conducted at the site formerly known as Montauk Naval Sub Base in accordance with the Military Munitions Response Program (MMRP). The SI at Montauk Naval Sub Base falls under the purview of the Defense Environmental Restoration Program (DERP) for Formerly Used Defense Sites (FUDS). The specific FUDS project number for Montauk Naval Sub Base is C02NY076602. This SS-WP is an addendum to the Programmatic Work Plan (PWP) for the DERP FUDS MMRP SIs (entitled *Programmatic Work Plan for Formerly Used Defense Sites Military Munitions Response Program Site Inspections at Multiple Sites in the Northeast Region*, referred to throughout this document as the PWP) (Alion 2005). The U.S. Army Corps of Engineers (USACE) approved the final PWP, dated October 2005, for use in conducting SIs at multiple sites located throughout the Northeastern United States. The reader is directed to the PWP (Alion 2005) for additional programmatic detail regarding general SI plans and procedures. This addendum provides site-specific plans, objectives, and procedures for conducting the SI at the Montauk Naval Sub Base FUDS.

1.1 Project Authorization

The U. S. Army Engineering and Support Center Huntsville (USAESCH) contracted with Alion Science and Technology Corporation (Alion) to perform an SI at Montauk Naval Sub Base, Suffolk County, New York. This work, which is being performed in the Northeast Region of the Continental United States (CONUS) under contract W912DY-04-D-0017, Task Order 00170001, falls under the purview of DERP FUDS. USAESCH transferred management of the contract to the U.S. Army Corps of Engineers North Atlantic Division Baltimore (CENAB). CENAB works with USAESCH on this project. As the local USACE Geographic District, the USACE North Atlantic New York (CENAN) completes the USACE Project Team by providing project management and technical support to work with the regulators and all stakeholders in execution of the SI.

The work under this task order is being completed by Alion, along with Alion's subcontractors: GPL Laboratories LLLP (GPL), Integral Consulting, Inc., and Environmental Data Services (EDS) Data Validation Services, Inc.

1.2 Project Scope and Objectives

The goal of this SI is to determine whether the FUDS warrants further response action or a No Department of Defense Action Indicated (NDAI) designation with respect to MMRP (Alion 2005). To make this determination, investigations for Munitions and Explosives of Concern

(MEC) and Munitions Constituents (MC) will be performed in accordance with Engineering Regulation (ER) 200-3-1 (USACE 2004b), the Department of Defense (DoD) Management Guidance for DERP (DoD 2001), the Comprehensive Environmental Response, Compensation and Liability act (CERCLA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). In accordance with ER 200-3-1 (USACE 2004b), this SI is a screening level assessment to determine presence/absence of MEC and MC, and is not intended as a full-scale study of the nature and extent of MEC or MC hazards. Further project response actions, if required, will be conducted in parallel with the CERCLA response action.

The project objectives of this SI are as follows:

- Determine if the FUDS requires additional investigation through a Remedial Investigation/Feasibility Study (RI/FS) or if the FUDS may be recommended for NDAI designation based on the presence or absence of MEC and MC.
- Determine the potential need for a Time-Critical Removal Action (TCRA) or Non-Time-Critical Removal Action (NTCRA) for MEC and MC by collecting data from previous investigations/reports, conducting site visits, performing qualitative reconnaissance (using visual observations and analog geophysics), and collecting MC samples.
- Collect or develop additional data, as appropriate, in support of potential Hazard Ranking System (HRS) scoring by the U.S. Environmental Protection Agency (USEPA).
- Collect the additional data necessary to complete the Munitions Response Site Prioritization Protocol (MRSPP).

The following describes the site-specific process used to complete the project objectives:

- Conduct a site visit and contact facility personnel at Montauk Naval Sub Base, as necessary, to obtain additional site-specific data (associated reports and documents).
- Review available reports/data for Montauk Naval Sub Base to identify potential MEC/MC sources, pathways, receptors, and associated data gaps.
- Prepare a read-ahead package for stakeholder review to clarify the MMRP process, discuss historical site operations, and present potential MEC/MC hazards.
- Initiate the Technical Project Planning (TPP) process to involve site owners and regulators (stakeholders) in a meeting to establish/confirm project objectives and data needs required to: (1) screen the property for releases that, if present, would trigger the

RI/FS phase of the CERCLA process, or if releases are not found to be present, determine the data required to reach project closeout; (2) define Data Quality Objective (DQO) worksheets; (3) prepare a conceptual site model (CSM); and; (4) obtain stakeholder consensus on the SI approach and planned field activities. The results of the TPP meeting are documented in a TPP Memorandum.

- Prepare a SS-WP (this document) to document site history and field investigation and analysis plans.
- Conduct field work, including a qualitative reconnaissance for MEC and MC sampling activities.
- Complete a comprehensive SI Report to document findings, conclusions, and recommendations.

MEC intrusive/clearing activities are not authorized under this MMRP SI (Alion 2005). Furthermore, initiation or completion of a TCRA/NTCRA or emergency response action is not within the SI scope. Refer to Section 2.6.1 for additional detail on the munitions response approach.

A determination of NDAI or RI/FS designation for an MMRP project will address only MEC/MC issues at a site; *i.e.* this determination does not address potential Hazardous, Toxic, and Radioactive Waste (HTRW) issues at the property. Potential HTRW concerns identified during SI activities will be documented and this information will be provided to USACE for determination of future action under the HTRW program. In addition, if an NDAI designation is made, and MEC/MC contamination is discovered at a later date, USACE may reopen the MMRP project.

1.3 Technical Project Planning Summary

The TPP Meeting for Montauk Naval Sub Base was conducted on 12 February 2008 at the Montauk Fire Station, Montauk, New York. The New York State Department of Environmental Conservation (NYSDEC), USEPA, USACE Baltimore District, USACE New York District, the Rough Riders Condominium Association and Alion representatives participated in this meeting. The TPP participants concurred with the technical approach for the planned SI activities discussed as documented in the TPP Memorandum (Alion 2008) and summarized below (see Appendix B):

- **SI Objectives and Approach.** Stakeholders understood limited scope study and supported the general approach presented.

- **MRS.** Identified stakeholders agreed to the selection and designation of Munitions Response Site (MRS) 1 (Fort Pond Bay and Beach) as the focus of the SI. MRS 2 (Torpedo Test Range) is completely within the open waters of Block Island Sound. In accordance with USACE guidance (Regulation ER200 3-1) MRS 2 is considered a water range and will be investigated under another USACE program. The TPP team agreed that MRS 2 would not be included or investigated during this Montauk Naval Sub Base SI (Alion 2008).
- **CSMs (MEC and MC).** Stakeholders agreed to the CSMs presented for MEC and CSMs for MC, as modified during the TPP:
 - MRS 1 CSM: Stakeholders agreed to the CSM for MEC. The MRS 1 CSM for MC will be revised to show an incomplete pathway for groundwater.
- **DQOs.** Stakeholders agreed to the DQOs, and no revisions were requested.

TPP actions items (Alion 2008) and their respective status are noted below:

- Ms. Karas requested a hard copy of the ASR and ASR Supplement for Montauk Naval Sub Base. Alion will send Ms. Karas a hard copy of the ASR and ASR Supplement. *[Follow Up: Alion sent hard copies of the ASR and ASR supplement to Ms. Karas on February 20, 2008.]*

1.4 Decision Rules

Site-specific DQOs have been developed for Montauk Naval Sub Base and are presented in Worksheets 1-4 (Appendix C). These DQOs and the decision rules to support decision-making for this SI are presented below:

- DQO 1 - Determine if the FUDS requires additional investigation through an RI/FS or if the FUDS may be recommended for NDAI designation based on the presence or absence of MEC and MC.

The basis of recommendation for RI/FS related to the presence/absence of MEC includes:

- Historic data that indicates the presence of MEC or Munitions Debris (MD)
- Visual evidence or anomalies classified as MEC, MD or Material Potentially Presenting an Explosives Hazard (MPPEH)

- One or more anomalies in a target area near historic or current MEC/MD finds or within an impact crater
- Physical evidence indicating the presence of MEC (e.g. ground scarring, bomb craters, burial pits, MD, etc.)

The basis of recommendation for RI/FS related to the presence/absence of MC includes:

- Maximum concentrations at the FUDS exceed USEPA Regional Screening Values for human health (the most current EPA Region III, VI and IX values, which are maintained by Oak Ridge National Laboratory (ORNL) for the EPA) (USEPA 2008) based on current and future land use
- Maximum concentrations at the FUDS exceed USEPA interim ecological risk screening values
- Maximum concentrations at the FUDS exceed site-specific background levels

If none of these aforementioned scenarios occur, then the recommendation for NDAI designation will be given.

- DQO 2 - Determine the potential need for a TCRA for MEC and MC by collecting data from previous investigations/reports, conducting site visits, performing qualitative reconnaissance, and by collecting MC samples. The basis for recommendations are specified below:
 - A TCRA or an emergency response – If there is a complete pathway between source and receptor and if the MEC presence is viewed as an “imminent danger” posed by the release or threat of a release. Cleanup or stabilization actions must be initiated within six months to reduce risk to public health.
 - A NTCRA – If a release or threat of release that poses a risk where more than six months planning time is available.
- DQO 3 – Collect or develop additional data, as appropriate, in support of a potential HRS scoring by the USEPA.
- DQO 4 – Collect the additional data necessary to complete the MRSPP.

1.5 Work Plan Organization

This SS-WP covers the inspection and all associated preparations necessary for SI activities at Montauk Naval Sub Base. Refer to the PWP (Alion 2005) for additional detail regarding general SI plans and procedures.

1.6 Project Organization

Technical, ordnance, and managerial personnel required to support the SI activities are provided from a pool of Alion professionals. Key positions include the Program Manager (PGM), Site-Specific Project Manager (PM), Task Managers, Field Team Leaders (FTLs), Chemical Quality Control (QC) Officer, Certified Industrial Hygienist (CIH), Unexploded Ordnance (UXO) Technician II/III, and Geographic Information Systems (GIS) Manager. The key positions, qualification requirements, and assigned personnel are identified in the PWP (Alion 2005).

Project points of contact for Montauk Naval Sub Base SI are identified in Table 1-1. Project communication and reporting is conducted in accordance with the procedures outlined in the PWP (Alion 2005).

The Alion SI Field Team for Montauk Naval Sub Base will include a three-person team, with each person qualified in his/her area of expertise. The FTL leads the field sampling activities. For this FUDS, the FTL is the Task Manager; they are knowledgeable of the historical and logistical details regarding Montauk Naval Sub Base. The FTL will manage the field team and make decisions in coordination with the Alion PM. A Sampling Technician assigned to perform the MC sampling will support the FTL. The Field Team will also include a UXO Technician (II or III) tasked with ensuring all aspects of field safety as well as identification of MEC, Discarded Military Munitions (DMM), or any MD encountered. The UXO Technician also will conduct the geophysical reconnaissance and ensure safe pathways to allocated sampling locations. The use of one UXO Technician is a deviation from the PWP (Alion 2005), which states that two UXO Technicians will be used during these field activities. The reason for the deviation from the PWP is related directly to experience on many of the SI sites performed to date that indicate that the use of two UXO Technicians is not required to perform the field activities. One UXO Tech per environmental sampling team is sufficient to conduct field activities in a safe manner.

The Montauk Naval Sub Base SI field team will be comprised of the following individuals:

- FTL, Benjamin Claus
- UXO Technician, Rusty Mitchell

- Sampling Technician, Todd Belanger

Table 1-1. Project Points of Contact					
NAME	ORGANIZATION	PHONE	ADDRESS	E-MAIL	PROJECT ROLE
Bradford McCowan	U.S. Army Corps of Engineers (USACE), Military Munitions (MM) Center of Expertise (CX)	256-426-4214	P. O. Box 1600 4820 University Square Huntsville, AL 35816	Brad.McCowan@hnd01.usace.army.mil	MMRP SI Program Manager
Julie Kaiser	U.S Army Corps of Engineers North Atlantic Baltimore (CENAB) MM Design Center (DC)	410-962-4006	City Crescent Building 10 S. Howard St. Baltimore, MD 21201	Julie.E.Kaiser@nab02.usace.army.mil	MMRP SI Regional Program Manager
Liza Finley	CENAB Hazardous Toxic and Radiological Waste (HTRW) Branch, RID Section	410-962- 2683	City Crescent Building 10 S. Howard St. Baltimore, MD 21201	liza.finley@usace.army.mil	DC Design Team Leader
Paul Greene	CENAB Hazardous Toxic and Radiological Waste (HTRW) Branch, EES Section	410-962-6741	City Crescent Building 10 S. Howard St. 10 th floor Baltimore, MD 21201	Paul.E.Greene@usace.army.mil	DC UXO Safety Specialist
Alan Warminski	CENAB Hazardous Toxic and Radiological Waste (HTRW) Branch, EES Section	410-962-2179	City Crescent Building 10 S. Howard St. 10 th floor Baltimore, MD 21201	alan.s.warminski@usace.army.mil	DC Project Chemist
Chek Ng	NYSDEC	518-402-9620	625 Broadway Albany, NY 12233-7015	cbng@gw.dec.state.ny.us	State Regulator
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Table 1-1. Project Points of Contact					
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Table 1-1. Project Points of Contact					
NAME	ORGANIZATION	PHONE	ADDRESS	E-MAIL	PROJECT ROLE
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1.7 Project Schedule

The Montauk Naval Sub Base SI project schedule, presented in Figure 1 (Appendix A), includes proposed submittal dates, review times for stakeholders, expected fieldwork dates, and reporting dates. This revised project schedule supersedes the project schedule originally presented in the Final TPP Memorandum (Alion 2008). The current SI schedule, planned for completion in July 2009, will be updated as necessary to reflect current progress and anticipated activities.

2. PROJECT DESCRIPTION

2.1 Project Location

Montauk Naval Sub Base is located on the southern shore of Fort Pond Bay in Suffolk County, New York (Figure 2, Appendix A). The North American Datum (NAD) 1983 Universal Transverse Mercator (UTM), UTM zone 19, easting (X) and northing (Y) coordinates for the area are 250545 meters (m) and 4548509 m, respectively (USACE 2004a). This FUDS falls under the geographical jurisdiction of CENAN.

2.2 Site Description

Former Montauk Naval Sub Base FUDS property is approximately 45 acres in area (USACE 2004a). According to the ASR supplement, the Montauk Naval Sub Base FUDS is approximately 45 acres of land (USACE 2004a). The former Montauk Naval Sub Base FUDS is owned by numerous private land owners and is used for residential, recreational and tourism-related activities. The two remaining buildings associated with the Montauk Naval Sub Base that were left after demolition was completed in 1984 are now utilized as the Montauk Shell Fish Hatchery and residential apartments (USACE 1995). A small portion of the FUDS property lies within the Fort Pond Bay and is under water. The vast majority of the Montauk Naval Sub Base FUDS is situated on land and is bordered by Fort Pond Bay to the west and Fort Pond to the east.

2.2.1 Topography

The former Montauk Naval Sub Base FUDS has elevations that range from sea level along the shoreline of Fort Pond Bay to approximately 50 feet above mean sea level (msl) in the northeastern and southwestern portions of the FUDS. The surface topography is generally flat or gently sloping within the middle portion of the FUDS (USACE 1995). A topographic map of the area surrounding Montauk Naval Sub Base is included as Figure 4 in Appendix A of this report.

2.2.2 Vegetation

The former Montauk Naval Sub Base land is predominantly developed and used for residential purposes. Isolated areas in the north and east of the FUDS are moderately vegetated. Plant, shrub and tree species known to be within the FUDS include bushy pockrose, globe breakrush, salt-marsh spikerush, sandplain gerardia, spikegrass, crabgrass and southern yellow flax (USACE 1995).

2.2.3 Geology and Soils

Long Island is the terminal moraine marking the southernmost advance of the ice sheet along the Atlantic Coast during the last ice age. The soils present at the former Montauk Naval Sub Base FUDS are typically well-drained and associated with Wisconsin stage moraine deposits. The surface soil layer can range from a silty loam or fine sandy loam to clean medium grained sands along the shoreline of Fort Bay Pond. A fragipan or compact layer of altered subsurface soil that restricts water flow is often present at depths of 20 to 30 inches (USACE 1995). This fragipan ranges from 2 to more than 20 feet in thickness and has low to moderately low permeability. Poorly sorted or crudely stratified deposits of sand and gravel are under the fragipan. Surface soil layers are typically underlain by sand, silt, or glacial till and are encountered between 16 and 32 inches below ground surface (USACE 1995). A soils map of Montauk Naval Sub Base is included as Figure 5 in Appendix A of this report.

The former Montauk Naval Sub Base FUDS is located within the Embayed section of the Coastal Plain physiographic province of Long Island Sound. The bedrock of Suffolk County is not exposed at the surface, but includes Cretaceous (66 – 144 million years ago (Ma)) sedimentary rocks of the Monmouth-Magothy and Raritan sand and mud units underlain by sedimentary and igneous rocks of Jurassic (144 – 208 Ma) and Triassic (208 – 245 Ma) age including the Passaic Formation, Palisades diabase, and Ladontown basalt (Rickard et al. 1970). Overlying the Monmouth-Magothy Formation, sediments currently exposed at the surface include glacial and proglacial till, gravel, sand, and mud of Pleistocene and younger age. Glacial deposits are the result of the Pleistocene age Wisconsin stage of glaciation, which produced Long Island Sound and most of the topographic features in Suffolk County (USACE 1995).

2.2.4 Hydrology and Hydrogeology

Situated in the far eastern portion of Long Island, the former Montauk Naval Sub Base FUDS is located on a peninsula and is surrounded by the Atlantic Ocean. There are several bodies of surface water partially within and adjacent to the FUDS property including Fort Pond, Tuthill Pond and Lake Montauk (USACE 1995).

Upper Pleistocene sediments and the Magothy and Lloyd Sand members of the Raritan Formation serve as the three main aquifers for Suffolk County. The aquifers are predominantly very permeable sands and gravels with minor silt and clay. Due to the narrow land area where the Montauk Naval Sub Base FUDS is located, groundwater does not rise far above sea level; therefore, contamination of freshwater by salt water is possible if excessive pumping takes place (USACE 1995). The majority of potable, municipal groundwater wells within the eastern portion of Long Island extract water from the Amagansett and Wainscott aquifers located approximately

11 miles west of Montauk. The Magothy aquifer, which underlies much of Long Island is entirely saltwater from Montauk to the eastern tip of the island and is therefore not used as a potable water supply (USGS 1982).

2.2.5 Threatened and Endangered (T&E) Species

Former Montauk Naval Sub Base is currently owned by numerous private property owners and entities. The state of New York has multiple animal species that are on the federal endangered, threatened, recovered, or species of concern list, some of which are located in the Montauk Naval Sub Base FUDS (USACE 1995). State or federally-listed species are present in the vicinity of Montauk Naval Sub Base. NYSDEC has been contacted to confirm this information and provided a description of the proposed sampling activities. USACE and Alion also contacted the New York Natural Heritage Program and the U.S. Fish and Wildlife Service (USFWS) to determine if any Threatened and Endangered (T&E) species are present and likely to be adversely affected by the proposed sampling activities. A list of T&E species is presented in Appendix G. The proposed work tasks presented in this SS-WP are not believed to cause adverse impact to any of the listed species or habitats; however, if additional T&E species are identified, every effort will be made to avoid disturbances to T&E species and their sensitive habitats during the SI field activities.

2.2.6 Wetlands

Wetlands are known to be present at the Montauk Naval Sub Base FUDS including estuarine and marine wetlands, freshwater forested/shrub wetlands and freshwater emergent wetlands. Field sampling activities proposed for this SI are not anticipated to negatively impact the wetland areas. A map of wetland environments located within the Montauk Naval Sub Base FUDS is included as Figure 6 in Appendix A of this report (DOI 1998).

2.2.7 Cultural, Archaeological, and Water Resources

The ASR Findings indicate that the Montauk Naval Sub Base FUDS lies within an archeological sensitive area according to the New York State Historic Preservation Field Services Bureau (USACE 1995). USACE/Alion has consulted with the New York State Office of Parks, Recreation, and Historic Preservation (NYSOP) and New York Landmarks Commission to ensure cultural, archaeological and water resources are not present at Montauk Naval Sub Base and/or will not be disturbed during field activities. In the event that cultural, archeological, and/or water resources are identified, any disturbances will be avoided or mitigated in accordance with State requirements. Coastal ZoneThe former Montauk Naval Sub Base is situated within the New York Coastal Zone. This area is managed under the New York Coastal

Management Program, which is administered by the Department of State through the Division of Coastal Resources. The SI activities will include surface soil and sediment sample collection. Sampling activities will be completed without significant disturbance to the coastal areas and in accordance with coastal regulations. (USDOI 1998)

2.3 Site History

Prior to the construction of the torpedo testing range and facility the majority of the site was the location of the Montauk fishing village. The War Department/Navy signed into effect a contract to build the torpedo testing range (Montauk Naval Sub Base) in December 1942. Construction of the Montauk Naval Sub Base was completed in March 1943 (USACE 1995).

During the initial phases of World War II existing torpedo ranges were overwhelmed and could not keep up with the testing of torpedo propulsion systems. Therefore, Montauk was established and utilized to increase the testing and delivery of commercially manufactured torpedoes for the war effort. During the operation of the Montauk Naval Sub Base the two main types of torpedoes tested were the air launched Mark (MK) 13 and surface or barged launched MK 14 steam operated torpedoes with inert warheads. These inert torpedoes were tested within Fort Pond Bay as well as areas within Block Island Sound (USACE 1995). The base was also utilized by the Navy as a submarine port, maintenance facility, and seaplane landing area.

Months before the end of World War II, the Navy issued a notice that the testing range would be disestablished in March 1945, as it was no longer considered a necessity after January 1945. However, it was determined that the buildings and infrastructure associated with the Montauk Naval Sub Base would be of interest to the Navy for use as a storage area for inert ordnance material (USACE 1995).

The Montauk Naval Sub Base property was put on the surplus list on April 17, 1946, but the Navy had to withdraw the property on August 7, 1947 due to legal disagreements associated with the validity of the Navy's title on the land. Through various amended declaration of surpluses, the Navy acquired title in April 1949 by Declaration of Taking. The Montauk Naval Sub Base was then disposed of and ownership of a small portion of the property was transferred to the Goble Aircraft Specialties Corporation on November 15, 1949 (USACE 1995). Between 1950 and 1958 the General Services Administration (GSA) conveyed the remaining portions of the former Montauk Naval Sub Base to the Long Island Railroad (LIRR) and real estate developers (USACE 1993).

2.4 Current Use and Projected Land Use

The Montauk Naval Sub Base was made surplus to the DoD in June 1949. Since 1949 the former Montauk Naval Sub Base property was acquired by numerous private individuals and corporations. A large portion of the property is now owned by the Rough Riders Resort Corporation and is the location of the Rough Riders Condominiums. The LIRR also owns and maintains a railroad station located in the southern portion of the former Montauk Naval Sub Base property. The remaining property is comprised of seasonal vacation homes owned by private landowners. Currently the area within and surrounding the former Montauk Naval Sub Base is used as recreational areas (beaches) and seasonal housing associated with summer tourism. Future land use is expected to be similar. It was requested at the TPP meeting (Alion 2008) that Alion avoid conducting field work during the period spanning mid-April through mid-September due to recreational activities associated with tourism along the beaches of Fort Pond Bay. Alion will not conduct field activities during this time period.

2.5 Previous Investigations of the Site

2.5.1 Inventory Project Report

USACE issued the Inventory Project Report (INPR) for the Montauk Naval Sub Base FUDS in December 1993. The 1993 INPR determined that the present condition of the project site has been determined to be the result of a prior DoD ownership, utilization, or activity. Moreover, it is determined that an environmental restoration project is an appropriate undertaking within the purview of the DERP for FUDS.

2.5.2 Archives Search Report (ASR)

The USACE St. Louis District prepared the Archives Search Report (ASR) Findings for Montauk Naval Sub Base in September 1995. The ASR Findings contain previous investigations at the site, property description, physical characteristics of the site, the historical property ownership summary, site eligibility as a FUDS, a visual site inspection, property MEC/Recovered Chemical Warfare Materiel (RCWM) technical data, an evaluation of ordnance present at the site, and recommendations. The ASR also included ordnance technical data sheets, physical and chemical characteristics data sheets, maps, interviews, visual inspection property report and photographs, and a preliminary assessment form. Chemical warfare materiel (CWM) was not used, stored, or disposed of at Montauk Naval Sub Base. The ASR concluded that the Montauk Naval Sub Base FUDS be carried forward to the SI stage (USACE 1995).

2.5.3 ASR Supplement

The ASR Supplement was prepared for the FUDS in November 2004 (USACE 2004a). Although the ASR Supplement includes MRS 1 (Fort Pond Bay and Beach) and MRS 2 (Torpedo Test Range) per USACE guidance (ER200 3-1), the focus of this SI is MRS 1 only. Concurrence with stakeholders on this decision was reached during the TPP meeting. The ASR Supplement assigned a Risk Assessment Code (RAC) score of 4 to the FUDS as a whole. RAC score indicates the level of MEC risk associated with the area. RAC scores range from 1, being the highest category of risk, to 5, being the lowest. Local residents have periodically reported unfired .50 caliber ammunition being found on the eastern shoreline of Fort Pond Bay after storm events. Additionally, local divers have reported that the bottom of Fort Pond Bay near and around the “L-shaped” pier is littered with possible .30 and/or .45 caliber small arms ammunition. The origin of the ammunition is unknown, but it is assumed that the small arms rounds were associated with the former Montauk Naval Sub Base (USACE 2004a).

2.6 Site Inspection Approach and Rationale

Small arms munitions including complete .50 caliber rounds have been found in MRS 1 along the eastern shoreline of Fort Pond Bay and within the waters of Fort Pond Bay. Table 2-1 lists the areas of evaluation, the acreage associated with each area, the RAC score given to each area, and munitions type. Although the Navy tested MK 13 and MK 14 torpedoes within MRS 2 this area will not be evaluated during this SI and munitions types, acreage and RAC scores for this MRS are not included in Table 2-1. In accordance with USACE guidance (Regulation ER200 3-1) MRS 2 is considered a water range and will be investigated under another USACE program (Alion 2008).

**Table 2-1. Potential Risk from Munitions and Explosives of Concern
(USACE 2004a)**

FUDS Name	Range Name	Sub-range Name	RMIS ID	Acreage	RAC Score	Type Of Munitions	Munitions ID
Montauk Naval Sub Base	Fort Pond Bay and Beach	N/A	C02NY076602-M01	1,228 ^a	4	.30, .45 Caliber and .50 Caliber Machine Gun	Small Arms (CTT01), Small Arms – Complete Rounds (CTT02)

^a Includes acreage within Fort Pond Bay.

2.6.1 Approach to Munitions Response Activities

The overall approach to munitions response activities is presented in the PWP (Alion 2005). As discussed in Section 2.5.3 of this SS-WP, complete small arms rounds (.50 caliber) have been reported by local residents on the shoreline of Fort Pond Bay as well as suspected .30 and .45 caliber small arms under water within Fort Bay Pond by local scuba divers (USACE 1995). The specific location of these munitions items has not been determined. Therefore, the technical approach, as defined during the TPP Meeting (Alion 2008), will focus on biased screening for the presence of MEC/MC at MRS 1 in areas that are most likely to be impacted from former munitions-related activities.

The Montauk Naval Sub Base SI, as defined in the ASR Supplement, includes one MRS potentially impacted by MEC and/or MC based on the site use and history. Refer to sections 1.3 and 2.6 for further details concerning MRS 2. MRS 1 is the focus of this SI as identified below:

- **MRS 1 (Fort Pond Bay and Beach).** This range is identified as Restoration Management Information System (RMIS) C02NY076602-M01 and includes approximately 155 acres of land and 1,073 acres of water.

MRS 1 includes land and water areas within Fort Pond Bay. Land areas as well as water areas (up to 100 yards from the mean high tide mark) where historical evidence suggests munitions may be or were present will be investigated during the SI. The SI will assess and provide recommendations for areas identified in the ASR Supplement. MRSPPs are completed only for MRSs in accordance with USACE guidance. The MRS boundary for Montauk Naval Sub Base is shown in Figure 2 (Appendix A).

2.6.2 Munitions and Explosives of Concern Exposure Analysis

2.6.2.1 Munitions Type and Composition

The types of MEC historically used at the FUDS are presented in Table 2-2. The associated MC analysis (also listed in Table 2-2) was developed based on the munitions potentially present at MRS 1 for Montauk Naval Sub Base. This data was gathered from munitions data sheets, historical documents, and other munitions reference documents. The Appendix D (Munitions Data Sheet) was prepared and included in this SS-WP to serve as a visual guide for the SI field team to ensure accurate identification should suspect MEC be located on FUDS. Also of note are the MC documented to be associated with the specific munitions used at the FUDS or with similar munitions.

Table 2-2. Military Munitions Type and Composition (USACE 2004a and other sources)				
Range ID (MRS)	Munitions ID	Munitions Type	Composition (explosives and metallic components)	Associated MC Analysis
MRS 1 – Fort Pond Bay and Beach	Small Arms (CTT01), Small Arms – Complete Rounds (CTT02)	Small Arms General (.30, .45 Caliber), .50 Caliber Machine Gun	<p><i>Projectile (.30, .45, .50 caliber):</i> Lead, antimony, cupro-nickel, and soft steel.</p> <p><i>Propellant:</i> Single or double base powders (nitrocellulose^b nitroglycerine (NG), dinitrotoluene (DNT), potassium sulfate, graphite</p> <p><i>Primer:</i> Lead thiocyanate, antimony sulfide, potassium chlorate, gum solution</p>	<p><i>Because complete rounds were historically found at the MRS all samples will be analyzed for MC associated with a complete small arms round.</i></p> <p><i>Explosives:</i> - NG - DNT^a</p> <p><i>Metals:</i> - Antimony - Copper -Iron -Lead -Nickel</p>
DNT = Dinitrotoluene MC = Munitions Constituents MRS = Munitions Response Site NG = Nitroglycerine		<p>^a DNT and break down products currently on the approved PWP explosives analysis using method 8330A list (2,4-Dinitrotoluene; 2,6-Dinitrotoluene; 2-Amino-4,6-dinitrotoluene; 2-Nitrotoluene; 3-Nitrotoluene; 4-Amino-2,6-dinitrotoluene, 4- Nitrotoluene) will be analyzed.</p> <p>^b Nitrocellulose is composed of nitrated cellulose. Nitrates are readily biodegraded and are not expected to persist in the environment.</p>		

Available historical information indicates that munitions were used, fired or disposed of at Montauk Naval Sub Base. Based on available technical manuals, MCs identified for Montauk Naval Sub Base munitions include materials present in the primer, propellant and projectile. Complete small arms rounds have been identified at MRS 1. Therefore, the MC sampling/analysis will focus on constituents present in propellants, primer and projectile of small arms potentially present at MRS 1.

Below is a brief description of MRS 1 and the MC sample analysis scheme.

MRS 1 (Fort Pond Bay and Beach). The precise location of the small arms rounds found along the beach in MRS 1 was not identified in the ASR or the ASR Supplement. However, based on interviews conducted during the ASR investigation process the most likely area that may be impacted by small arms is adjacent and surrounding the “L-shaped” pier located on the eastern shore of Fort Pond Bay. Local divers have observed small arms as well as other suspected base related debris within the vicinity of this pier. Per discussion at the TPP meeting, sediment samples will be collected adjacent and to the southeast of the pier. Soil samples will similarly be collected on the shoreline east of the pier where wave and tidal action would be likely to deposit MEC. All samples will be analyzed for the explosive compounds NG, DNT and DNT breakdown products (2,4-Dinitrotoluene; 2,6-Dinitrotoluene; 2-Amino-4,6-dinitrotoluene; 2-Nitrotoluene; 3-Nitrotoluene; 4-Amino-2,6-dinitrotoluene, 4- Nitrotoluene). All samples will also be analyzed for the metallic MCs associated with the small arms projectile which includes antimony, copper, lead, iron and nickel. Surface soil and sediment sample locations for Montauk Naval Sub Base is shown in Figure 9 (Appendix A).

Background Samples. Surface soil and sediment background samples will be collected from areas that are within or adjacent to the MRS boundary and exhibit a similar geological or soil composition. Three sediment background samples and 2 surface soil background samples will be collected and analyzed for the following metals: antimony, copper, iron, lead, and nickel. Figure 8, in Appendix A, depicts the locations from which surface soil and sediment background samples will be collected. Background sample locations for Montauk Naval Sub Base is shown in Figure 9 (Appendix A).

In addition to the MC sampling activities described above, a qualitative reconnaissance will be performed at various locations within the Montauk Naval Sub Base FUDS. This reconnaissance will include visual observations and use of analog geophysics for identifying potential surface presence of MEC/MD and supporting anomaly avoidance activities. The DQO for the determination of MEC risk will be achieved by completing the reconnaissance within and around MRS 1, especially focused on the areas in front of the four batteries proposed for sampling, which is considered to be the most likely accessible area to verify the presence of MEC, MC, or MD. Qualitative reconnaissance for Montauk Naval Sub Base is shown in Figure 8 (Appendix A).

2.6.2.2 Munitions and Explosives of Concern and Munitions Constituents Exposure Routes

As shown in the CSM for MRS 1 (Figure 7, Appendix A), there are potentially complete exposure pathways for receptors including visitors/trespassers, construction workers, residents employees and biota in surface soil. There are potentially complete exposure pathways for receptors including visitors/trespassers, construction workers and residents in subsurface soil. A potentially complete exposure pathway is present for biota within the sediment at MRS 1. Surface water is not considered a medium of concern at MRS 1 given that there are no permanent freshwater bodies within MRS 1 only ocean water. Per stakeholder agreement at the TPP meeting, groundwater is not a medium of concern at MRS 1 because, due to saltwater intrusion near the coast line potable drinking wells do not exist in the shallow aquifer in the vicinity of MRS 1.

The proposed MEC reconnaissance and MC sampling areas at Montauk Naval Sub Base were selected by assessing the potential pathways and receptors and then choosing biased sample locations based on historical and other site-specific information. Biasing MEC screening/sampling to these areas will achieve the MEC DQOs and permit completion of the MRSPP. MC sampling is further discussed in Section 3 of this SS-WP. Sampling locations were also refined based on input from stakeholders during the TPP meeting (Alion 2008).

Site-specific DQOs have been defined to complete a MEC/MC exposure analysis. The programmatic DQOs outlined in Section 3.1.2 of the PWP (Alion 2005) were reviewed and modified to address the site-specific needs of the SI at Montauk Naval Sub Base. These DQOs were discussed and agreed to during the TPP meeting, and included in the Final TPP Memorandum. The DQO worksheets are provided in Appendix C of this SS-WP.

USACE and Alion obtained agreement during the TPP to collect surface soil samples to assess the potential presence of MC, associated with the munitions used/fired at the FUDS (see Table 2-2). The MC associated with known munitions used or disposed of at Montauk Naval Sub Base and the MC analysis list was further refined and reduced using the MC screening process shown in Table 2-2.

The sampling approach presented below is based on the MRS-specific CSM and current understanding of the sources and pathways for MEC/MC through the environment to the potential receptors (see Section 2.6.3). See Figures 8 and 9 in Appendix A for the proposed sampling locations discussed below.

MRS 1 (Fort Pond Bay and Beach). Per discussion at the TPP meeting, two surface soil samples, one subsurface soil sample and three sediment samples will be collected at Montauk

Naval Sub Base. Sample locations were based on the historical documents or observations of MEC within MRS 1. All environmental samples will be analyzed for NG, DNT and DNT breakdown products 2,4-Dinitrotoluene; 2,6-Dinitrotoluene; 2-Amino-4,6-dinitrotoluene; 2-Nitrotoluene; 3-Nitrotoluene; 4-Amino-2,6-dinitrotoluene, 4-Nitrotoluene and the metals antimony, copper, iron, lead, and nickel. Figure 9, in Appendix A, depicts the locations from which surface soil, subsurface soil, and sediment samples will be collected.

Background Samples. Surface soil and sediment background samples will be collected from areas that are within or adjacent to the FUDS boundary and exhibit a similar geological or soil composition. Three sediment background samples and two surface soil background samples will be collected and analyzed for the following metals: antimony, copper, iron, lead, and nickel. Figure 9, in Appendix A, depicts the locations from which surface soil and sediment background samples will be collected.

In addition to the MC sampling activities described above, a qualitative reconnaissance will be performed at various locations within MRS 1 (Fort Pond Bay and Beach). This qualitative reconnaissance will include visual observations and use of analog geophysics for identifying potential surface presence of MEC/MD and supporting anomaly avoidance. The DQO for the determination of MEC risk will be achieved by completing the reconnaissance within the Montauk Naval Sub Base FUDS, which is considered to be the most likely accessible area to verify the presence of MEC, MC, or MD. Qualitative reconnaissance for Montauk Naval Sub Base is shown in Figure 8 (Appendix A).

2.6.3 Conceptual Site Model

Based on the discussion in Section 2.6.2.2, the current version of the CSM is provided in Appendix A of this SS-WP (Figure 7). The CSM is limited to those areas potentially impacted by MEC and/or MC based on the site use and history. The CSM does not include acreage beyond the 100 yard mean high tide (MHT) demarcation point, consistent with the scope of the SI program. The CSM is a dynamic model that will be updated throughout the SI process as additional site information is collected.

3. FIELD INVESTIGATION PLAN

3.1 Pre-Field Activities

CENAN will complete the Right-Of-Entry (ROE) prior to conducting the initial site visit and the field sampling activities at Montauk Naval Sub Base. Alion will notify USACE, who will in turn notify site owners, of actual fieldwork dates in advance of site entry to ensure no access problems are encountered. Per the TPP meeting, Alion will also notify NYSDEC of the planned field sampling date.

3.2 Environmental Protection Program

Potential environmental resources associated with the FUDS (including T&E species, wetlands, Cultural, Archaeological, and Water Resources) are presented in Section 2 along with avoidance procedures for minimizing potential adverse effects to the environment occurring as result of the planned SI activities at the Montauk Naval Sub Base FUDS. Furthermore, in accordance with the PWP, each sampling location will be evaluated individually to avoid tree and shrub removal during SI activities. As a result of these procedures, tree and shrub removals are not anticipated during the field sampling activities. Due to the nature of activities performed during the SI (no MEC intrusive investigations and MC sample depths not exceeding 6 inches), environmental impacts are considered insignificant, if present at all.

3.3 Munitions and Explosives of Concern Avoidance Design and Rationale

Based on previous investigations and historical interviews, various complete small arms rounds including .30, .45 and .50 caliber have been observed at the former Montauk Naval Sub Base FUDS. A UXO Technician II/III will be present to perform MEC avoidance during all SI on-site activities.

Prior to conducting site reconnaissance or field sampling operations, the field personnel will have reviewed applicable health and safety documents and become familiar with the types of military munitions used at the FUDS. The field personnel also will receive a daily safety briefing from the site UXO Technician to highlight the munitions and the potential hazards associated with MEC at the FUDS.

3.3.1 Site Reconnaissance Field Procedures

Field procedures are described below for both land and water areas where the field team will be conducting SI related activities.

3.3.1.1 Land Areas

The qualitative site reconnaissance¹ and field sampling activities require the use of analog geophysical equipment to identify access routes to environmental sampling locations that are free of anomalies. Figure 8, Appendix A includes representative qualitative reconnaissance paths planned for the FUDS. The UXO Technician II/III will ensure an anomaly-free location at or in the vicinity of sample locations. The UXO Technician II/III will document surface or subsurface anomalies at or in the vicinity of the sample collection location, if encountered. Surface and subsurface anomaly locations will be surveyed using a Global Positioning System (GPS) unit, and a description of the surface anomalies (to include type, details, etc.) will be documented in the daily field notes for later inclusion into the SI Report.

In the event that MPPEH is observed and Alion is unable to identify and certify that the MPPEH is (1) MD remaining after munitions use, demilitarization, or disposal; (2) range-related debris, or (3) cultural debris, then Alion shall consult with USACE, for guidance on whether the site or area where the item was found should be considered for a potential emergency response. An emergency response action may be initiated if there is a complete pathway between receptor and the source; and the situation is viewed as an “immediate and unacceptable hazard” to the local populace or site personnel. Alion will adhere to the requirements of Engineer Pamphlet 1110-1-18 (USACE 2000) and the USACE Interim Guidance Document (IGD), *Procedure for Preliminary Assessment and Site Inspection Teams That Encounter UXO While Gathering Non-UXO Field Data* (USACE 2006) for initiating an emergency response (Appendix D).

If the UXO Technician determines that an item may present an explosives hazard that poses an imminent threat to human health, the following steps of the USACE IGD will be implemented:

- The area will be flagged and GPS coordinates will be obtained.

¹ Meandering path refers to the route the field team will follow to navigate through, in, or around a range or area of concern. It is not a pre-designed transect at a preset interval, but rather refers to wandering in a zig-zag fashion through an area to identify additional locations of interest, observe site conditions, and present visual observations related to MEC in potentially impacted areas. Qualitative reconnaissance describes the process whereby the field team completes a reconnaissance of certain areas around the site using analog geophysics and visual surveys in a meandering path to avoid MEC, evaluate/confirm proposed sampling locations and collect additional data on anomalies and site conditions to be used in completion of the data quality objectives. The results of the qualitative reconnaissance including surface observations and surface/subsurface anomaly counts related to past DoD operations involving military munitions will be documented in the field books and the SI Report.

- The property owner will be notified of the hazard and advised to call the local emergency response authority. The USACE Geographic District PM and CENAB will be notified.
- The property owner will be informed that if they do not call the local response authority within one hour, the UXO Technician will notify the local emergency response authority.
- The local response authority will decide on how to respond to the reported incident, including a decision not to respond. Neither USACE personnel nor Alion personnel have the authority to call Explosive Ordnance Disposal (EOD) to respond to an explosives hazard.
- If local response authority decides to respond, the UXO Technician or his designee will mark the location of the item, wait for the arrival of local response personnel, and provide accurate location information to the emergency response authority.

Once the UXO Technician II/III identifies an area as anomaly-free, the MC sampling team will collect the samples for analysis. Samples will be collected from areas identified by the CSM or the MEC survey to be suspected of containing high concentrations of MEC and/or MC.

If suspected MPPEH subsequently is confirmed to be MEC, and there is a complete pathway between receptor and the source (confirmed MEC), but the situation is not viewed as immediate but rather an “imminent danger posed by the release or threat of a release”, USACE, in consultation with Alion, may consider implementing a TCRA. A TCRA is implemented where cleanup or stabilization actions must be initiated within six months to reduce risk to public health or the environment. Alternatively, an NTCRA may be initiated by USACE if more than six months is available for planning. Alion will immediately notify the Geographic District PM at CENAN and the Military Munitions Design Center (DC) Technical Manager at CENAB and provide the necessary detail for USACE to discuss and plan any future actions (TCRA, NTCRA, or other). Alion will follow similar procedures of using a GPS unit to document the location for USACE and providing documentation (including photographs of the scene) as part of the field records.

3.3.1.2 Aquatic Areas

As discussed in previous sections, adjacent tidal water bodies (up to 100 yards seaward of the MHT point of the FUDS property) that have been impacted from DoD military munitions are eligible for consideration under DERP FUDS. Alion will perform underwater analog geophysics using a Borehole Geophysics (BHG)-1 in various portions of the area designated as 100 yards seaward of the MHT at Montauk Naval Sub Base FUDS. The BHG-1 is an analog geophysical

detection instrument used to locate ferrous and non-ferrous anomalies in underwater or drilled down-hole conditions. When conducting underwater analog geophysics the BHG-1 will be lowered over the boat into the water. The boat will slowly travel the proposed underwater analog geophysics path as shown in Figure 8 in Appendix A. Visual inspection and anomaly counting will be utilized in conjunction with the geophysics to identify any suspected MEC or MD. If MEC or MD is identified during the qualitative reconnaissance the location will be logged with a GPS unit.

3.3.2 Equipment Calibration and Method Testing

The UXO Technician will utilize hand-held analog metal detection instruments to aid in the identification of potential surface and subsurface MEC locations. The Schonstedt 52CX will be used for the purpose of anomaly avoidance during sampling activities at the Montauk Naval Sub Base FUDS. The Schonstedt 52CX identifies ferrous metals. The instrument provides ample detection considering the munitions, geology, and potential interferences expected at the FUDS.

The UXO Technician II/III is trained in the use of the analog instruments and will check these instruments daily, prior to the start of field work. Schonstedt metal detectors do not require calibration; they have a simple “Go/No Go” field operational check. This function test requires the instruments be used on objects that are representative of the smallest munitions item known or suspected on the FUDS. The UXO Technician II/III will determine the depth of detection for the test items and test the instrument (and spare) close to that limit for everyday testing. If the depth of a soil sample to be taken is deeper than the determined detection depth of the equipment being used (*e.g.*, subsurface samples), then the sample depth screening for UXO will be achieved in steps so that any anomalies deeper than the established detection depth can be detected. If the instrument does not detect the test object, being used to ensure the equipment is in proper functioning condition, the UXO Technician II/III will replace the batteries and retest the instrument. If the instrument fails twice, the instrument will be replaced with a spare that has undergone the daily testing described above. The UXO Technician II/III will check his instruments (Schonstedt and BHG-1) periodically throughout the day on objects known to contain ferrous metals such as boot eyelets, belt buckles, or other readily available items.

Handheld GPS equipment will be used to log the locations of MPPEH items encountered, adjusted sampling locations, and other items of interest. A Trimble ProXRS, which is specified in the PWP (Alion 2005), will be used as a primary GPS unit. A handheld GPS unit will be used as a secondary GPS unit and, if used, will be documented in the SI report as a variance to the PWP. Operator(s) will receive appropriate training on use of the GPS prior to their arrival at the FUDS. GPS locations will be transferred from the data logger at the end of each field day for

inclusion in the FUDS GIS. GPS waypoints will be logged and the Alion Team member will take measurements at known locations. In the event the GPS does not function because of interference, the field team will use both the data provided in Table 3-1 (coordinates and site descriptions) and sampling maps to visually identify sample locations. The sample locations will be marked and the Alion Team will measure off from available known locations to obtain coordinates. If MPPEH is encountered, the field team will photograph (digital) the item and mark its location using GPS.

Continued acceptable GPS performance will be documented through the use of a control point. During the mobilization of the field sampling efforts, a surveyed point with a known location (third order or better) will be identified. This point will be occupied by the GPS unit each field day. The GPS location will be recorded and compared to the known value, validating the unit's accuracy. The surveyed test point will be in similar vegetation (if possible) to most of the area where the GPS will be used (e.g., if the area is wooded, test point should be in woods). The pass/fail GPS performance test will require the GPS unit to register within 3 m of the established surveyed/control point.

3.4 Munitions Constituents Field Sampling Activities

Field activities will follow the procedures outlined in the PWP (Alion 2005), Programmatic Sampling and Analysis Plan (PSAP) and Addendum (Appendix E.1 and E.2 of the PWP [Alion 2005]) except that the soil samples will be homogenized in a one-gallon plastic bag rather than in a stainless steel mixing bowls. Information pertaining to the specific samples that will be collected at Montauk Naval Sub Base is detailed below.

Field sampling identification designations, GPS location coordinates, and the sampling rationale for each sample location are presented in Table 3-1. The actual coordinates (listed below) established for the sample locations were taken from a review of aerial photographs and historical information. These sample locations may require adjustments in the field due to site-specific conditions (e.g., access issues, MEC avoidance). During the SI, two surface soil samples, one subsurface soil sample and three sediment samples will be collected. The proposed sampling locations, shown in Figure 9, Appendix A, are areas where MEC/MC were historically used/observed and, if present, are most likely to be detected. Sampling methods for each media are described in Table 3-3.

Table 3-1. Montauk Naval Sub Base Sample Location Descriptions				
Location	Sampling ID	Coordinate System: UTM Zone: 18N Datum: NAD 1983		Area of Interest / Rationale of Sampling Locations
		Easting(ft)	Northing(ft)	
Fort Pond Bay and Beach (MRS 1)	MNSB-FPB-SS-01-01	755696.683	4548399.152	To the east of pier on the beach of MRS 1
	MNSB-FPB-SS-01-02	755656.303	4548465.002	To the east of pier on the beach of MRS 1
	MNSB-FPB-SB-02-01	755611.798	4548373.639	To the east of pier on the beach of MRS 1
	MNSB-FPB-SD-01-01	755475.102	4548338.819	Adjacent and southeast of pier in MRS 1
	MNSB-FPB-SD-01-02	755555.387	4548402.409	Within the “L-shaped” pier at MRS 1
	MNSB-FPB-SD-01-03	755563.568	4548476.754	Within the “L-shaped” pier at MRS 1
Background Samples	MNSB-BG-SS-01-01	756133.307	4548977.258	In the northeast portion of the FUDS
	MNSB-BG-SS-01-02	756339.682	4548759.925	In the northeast portion of the FUDS
	MNSB-BG-SD-01-01	754600.903	4547716.245	Outside and to the south of MRS 1
	MNSB-BG-SD-01-02	754674.564	4547713.266	Outside and to the south of MRS 1
	MNSB-BG-SD-01-03	754733.552	4547703.477	Outside and to the south of MRS 1
MNSB= Montauk Naval Sub Base FPB= Fort Pond Bay SS= Surface Soil Sample SB= Subsurface Soil Sample SD= Sediment Sample				

3.4.1 Background Samples

A total of two surface soil background samples and three background sediment samples will be collected at Montauk Naval Sub Base. All background samples will be analyzed for antimony, copper, iron, lead, and nickel.

3.4.2 Surface Soil

All surface soil samples will be collected from 0 – 6 inches below ground surface (bgs). Soil samples will be collected utilizing dedicated, disposable plastic trowels and homogenized in a one-gallon dedicated plastic bag. Below are the proposed analyses to be performed at the MRS.

MRS 1 (Fort Pond Bay and Beach). Two surface soil samples will be collected from areas where historical accounts indicate MEC/MC may be present. These two surface soil samples will be collected for analysis of NG, DNT and DNT breakdown products (using method 8330A and method 8330A mod for NG). All surface soil samples will also be analyzed for: antimony, copper, iron, lead and nickel using method 6010B.

3.4.3 Subsurface Soil

One subsurface soil sample will be collected on the beach by digging with a plastic disposable shovel and then collecting the subsurface soil sample with a disposable trowel to the desired depth. The subsurface soil sample will be collected from 12-18 inches bgs and homogenized in a one-gallon dedicated plastic bag.

MRS 1 (Fort Pond Bay and Beach). One subsurface soil sample will be collected from an area where historical accounts indicate MEC/MC may be present or deposited at the MRS. The subsurface soil sample will be collected for analysis of NG, DNT and DNT breakdown products (using method 8330A and method 8330A mod for NG). All subsurface soil samples will also be analyzed for: antimony, copper, iron, lead and nickel using method 6010B.

3.4.4 Sediment

Sediment samples will be collected from approximately 0 – 6 inches below the top layers of sediment within Fort Pond Bay. At locations where the water depth does not permit direct sediment sample collection, a disposable scoop attached to the end of a polyvinyl chloride pipe or a decontaminated ponar dredge will be used to collect the sediment sample. All sediment samples will be collected and homogenized in a one-gallon dedicated plastic bag. The proposed analysis for the sediment samples to be collected at MRS - 1 is provided below.

MRS 1 (Fort Pond Bay and Beach). Three sediment samples will be collected in and around the pier located within Fort Pond Bay. These three sediment samples will be collected for analysis of NG, DNT and DNT breakdown products (using method 8330A and method 8330A mod for NG). All sediment samples will also be analyzed for: antimony, copper, iron, lead and nickel using method 6010B.

3.4.5 Surface Water

As per agreement during the TPP meeting no surface water samples will be collected at the Montauk Naval Sub Base FUDS.

3.4.6 Groundwater

As per agreement during the TPP meeting no groundwater samples will be collected at the Montauk Naval Sub Base FUDS. Groundwater is considered an incomplete exposure pathway because there are no wells located in close proximity to MRS 1. Additionally, the shallow aquifer is not used as a potable water source. Therefore, groundwater samples will not be collected at Montauk Naval Sub Base.

3.4.7 Quality Control/Quality Assurance Samples

Quality control (QC)/quality assurance (QA) samples will be collected as specified and described in the PWP and as indicated on Table 3-2 and Table 3-3. QC samples will include field duplicates, matrix spike (MS) and matrix spike duplicates (MSD). No equipment (rinsate) blanks are anticipated since only dedicated disposable equipment will be used during sample collection. Per direction from the CENAB chemist, no QA samples will be collected at Montauk Naval Sub Base.

Table 3-2. Sample Identification Table						
Location	Sample ID	Media	MC Sampled	MC Sampled	Quality Control Samples¹	
		Soil/ Sediment	Metals (reduced 6010B)	Explosives (reduced 8330A)	Field Duplicate²	MS/MSD³
Fort Pond Bay and Beach (MRS 1)	MNSB-FPB-SS-01-01	X	X	X		X
	MNSB-FPB-SS-01-02	X	X	X	X	
	MNSB-FPB-SB-02-01	X	X	X		
	MNSB-FPB-SD-01-01	X	X	X		
	MNSB-FPB-SD-01-02	X	X	X	X	
	MNSB-FPB-SD-01-03	X	X	X		
Background Samples	MNSB-BG-SS-01-01	X	X			
	MNSB-BG-SS-01-02	X	X			
	MNSB-BG-SD-01-01	X	X			
	MNSB-BG-SD-01-02	X	X			
	MNSB-BG-SD-01-03	X	X			
Totals		11	11	6	2	1
<p>1. For each QC sample, the marked sample type will be gathered for every MC category that is being sampled. Use of dedicated equipment is anticipated. Proposed QA sample locations may change depending on sampling conditions and sampling media available (i.e. may change if adequate media is not available to collect additional volume).</p> <p>2. FD1 will replace sample ID (the sample ID and its corresponding FD1 will be indicated in the field notebook); 10%</p> <p>3. MS/MSD samples will be analyzed at a frequency of 5%. The Field Team will add the following note on the field Chain of Custody: Additional volume collected for MS/MSD analysis.</p>						
<p>FD1: Field Duplicate Number 1 ID: Identification MS/MSD: Matrix Spike/Matrix Spike Duplicate MC: Munition Constituent</p>			<p>PWP: Programmatic Work Plan for Formerly Used Defense Sites Military Munitions Response Program Site Inspections in the Northeast Region QA: Quality Assurance QC: Quality Control</p>			

Table 3-3. Analytical Parameters, Methods, Standards, and Total Number of Soil/ Sediment Analyses											
Compound	Analytical/ Preparation Method	Preservative	Sample Container Type¹	Holding Times²	Number of Soil/Sediment Samples	Field Duplicates³	QA Splits⁴	MS⁵	MSD⁵	Equipment Blanks⁶	Total Analyses
Explosives											
2,4-Dinitrotoluene; 2,6-Dinitrotoluene; 2-Amino-4,6-dinitrotoluene; 2-Nitrotoluene; 3- Nitrotoluene, 4-Amino-2,6-dinitrotoluene; 4- Nitrotoluene	SW8330A	Cool to 4°C	1- 8 oz wide-mouth glass jar w/ Teflon-lined cap (250 grams)	14/40 days	6	2	0	1	1	N/A	10
Nitroglycerin	SW8330A (mod)	Cool to 4°C	Same jar as explosives	14/40 days	6	2	0	1	1	N/A	10
Metals											
Antimony Copper Iron Lead Nickel	SW6010B	Cool to 4°C	1- 8 oz wide-mouth glass jar w/ Teflon-lined cap (250 grams)	14/40 days	11	2	0	1	1	N/A	15
¹ Indicates number of bottles					⁴ QA Splits, none per CENAB direction						
² Number of days between sample collection and extraction/number of days between extraction and analysis					⁵ MS/MSD, 1:20 (5%) – To be selected at the laboratory by GPL Laboratories LLLP						
³ Field Duplicates, 1 per 10 (10%)					⁶ Temperature Blank, 1/cooler; Equipment Blank, 1/ FUDS (if necessary); No reusable equipment anticipated						
QA	Quality Assurance										
MS/MSD	Matrix Spike/Matrix Spike Duplicate										

3.5 Sample Handling

Samples collected during the SI activities at Montauk Naval Sub Base will be handled as outlined in the Programmatic Field Sampling Plan (PFSP) located in Appendix E of the PWP, with the exception that soil and sediment samples will be homogenized in a one-gallon plastic bag rather than in a stainless steel mixing bowls. Disposable scoops will be used to collect the soil and sediment samples. Table 3-3 provides additional information regarding preservatives, sample container types, and allowable sample holding times. Table 3-2 details the location, matrix sampled, sample identification (ID), types of analyses, and number of samples to be collected, including those for QC purposes. Adjustments to these plans may be necessary in the field due to unforeseen site conditions. Deviations from the PFSP during field work will be documented in the field notebook along with an explanation for each modification. Examples of the logs and forms used to document field activities are provided in Appendix F.

3.6 Analytical Procedures

Both field and non-measurement data will be used to support this SI. Non-direct measurement refers to data and other information that have been previously collected or generated under some effort outside the specific project being addressed by the QA Project Plan. Potential non-direct measurement sources to be used during the SIs include, but are not limited to:

- Site-specific USACE information (e.g., ASR, INPR, ASR Supplement).
- Site-specific information from stakeholders or knowledgeable individuals associated with the FUDS collected during the TPP or SS-WP development process.
- Site-specific demographic and climatic data from the U.S. Census Bureau.
- Site-specific geology, hydrology, and soil information from the U.S. Geological Survey (USGS).
- Site-specific aerial maps, topography, and land use from the U.S. Department of Agriculture (USDA).
- Site-specific information on T&E Species from the NYSDEC and the USFWS.
- Site-specific information pertaining to cultural and archeological resources associated with the FUDS collected from the NYSOP.

Field data collected will be analyzed in accordance with the procedures and protocol defined in the PWP and this SS-WP. In particular, the following organizations have responsibilities for sample analysis, data validation, and QA Requirements:

- Sample Analysis – GPL Laboratories, LLLP is responsible for the data analysis and for following applicable protocols for pertaining to analytical methods (outlined in the Programmatic Quality Assurance Project Plan [PQAPP] located in Appendix E of the PWP). Analytical results will be used by all stakeholders during the SI process.
- Review/validation of SI Analytical Results – EDS Inc. is responsible for reviewing and validating the data acquired during the SI.
- QA Requirements - QA split samples are usually collected by the field sampling team in accordance with the PQAPP (Alion 2005). Samples are submitted to a CENAB-approved laboratory for analysis. The QA lab identified by CENAB is Test America-Denver, located in Arvada, Colorado. CENAB has requested no QA samples for the Montauk Naval Sub Base field effort.

Table 3-3 identifies the analytical methods for each media for which samples are planned. The table also provides details on preserving samples, sample containers, hold times, and numbers of quality control samples that will be collected.

The DQO worksheets were developed using the TPP process (USACE 1998) and the Guidance on Systematic Planning using the Data Quality Objectives Process (USEPA 2006). The DQO worksheets define the performance criteria that limit the probabilities of making decision errors by considering the intended data uses, defining the appropriate type of data needed, and specifying the appropriate sampling and analysis methods. The site-specific DQOs will be evaluated throughout the SI Process to determine if the DQOs are achieved during the SI. A DQO attainment verification worksheet will be included in the SI Report.

3.7 Investigative Derived Waste

The only Investigative Derived Waste (IDW) anticipated will be from dedicated sampling equipment and sampling materials (gloves, paper towels etc.). This material will be disposed of as general refuse off-site. Excess soil will be placed back in the sampling locations in accordance with the approved PWP.

4. QUALITY ASSURANCE

The PQAPP, prepared by USACE and included in Appendix E.1 of the PWP along with the programmatic addendum to the PQAPP (Appendix E.2 to the PWP), provides guidance for QA procedures (Alion 2005). The PQAPP addresses the following topics:

- Project organization and responsibilities (related to project QA and QC).
- Data assessment organization and responsibilities. Alion reviews the electronic data deliverables (EDDs) of GPL's Automated Data Review (ADR) data to ensure the EDDs are free of the ADR conformance errors.
- DQOs.
- Sample receipt, handling, custody, and holding time requirements.
- Analytical procedures (related to operations of laboratory and field equipment).
- Data reduction/calculation of data quality indicators.
- Laboratory operations documentation.
- Data assessment procedures.

Based on the history of munitions used at Montauk Naval Sub Base (Table 2-2) and the sampling rationale, the chemical-specific Measurement Quality Objectives (MQOs) include selected explosives and metals (Appendix C). These analytes are presented in Table 3-3. Federal and state human health and ecological screening values will be used for comparison of sampling results in the human health and ecological risk screening. New York State values will be used to support further weight of evidence evaluations. In addition, the Preferred Maximum Method Quantitation Limits (PMMQL) (half of the most stringent criteria) were identified to verify laboratory detection levels to achieve the project goals. In summary, all lines of evidence including secondary lines of evidence, such as historic data, field data, comparison to regional background concentration ranges for metals, and comparison to state screening/cleanup criteria, will be used to make a final decision for an NDAI or RI/FS designation.

This site-specific Quality Assurance Project Plan (QAPP) (Alion 2005) (e.g., see Sections 1 and 3) provides project specific information and operating procedures applicable to sampling and analytical activities to be performed as part of the SI at Montauk Naval Sub Base. Specifically this QAPP provides site-specific DQOs developed for Montauk Naval Sub Base and provides

insight into the DQO process. The reader is referred to the PWP (Alion 2005) for discussions relating to the other PQAPP topics.

5. REFERENCES

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APPENDIX A— FIGURES

Montauk Naval Sub Base

ID	Task Name	Duration	Start	Finish	Qtr 1, 2007		Qtr 2, 2007		Qtr 3, 2007		Qtr 4, 2007		Qtr 1, 2008			Qtr 2, 2008			Qtr 3, 2008		Qtr 4,
					Oct	Dec	Feb	Apr	Jun	Aug	Oct	Dec	Feb	Apr	Jun						
1	SITE AWARD	0 days	Fri 11/30/07	Fri 11/30/07		◆ 11/30															
2	ADDITIONAL HISTORICAL DATA RESEARCH	1 day	Fri 11/30/07	Fri 11/30/07																	
3	PREPARE 'READ AHEAD' PACKAGE, DRAFT CSM, & DRAFT TPP SLIDES	3 days	Sat 12/1/07	Mon 12/3/07																	
4	USACE SUBMITS READ AHEAD FOR STAKEHOLDERS REVIEW	1 day	Tue 12/4/07	Tue 12/4/07																	
5	TPP # 1	1 day	Tue 2/12/08	Tue 2/12/08			◆ 2/12														
6	TPP # 1 MEMORANDUM (DRAFT) PREPARATION	12 days	Wed 2/13/08	Sun 2/24/08																	
7	TPP # 1 MEMO SUBMITTED TO USACE FOR DISTRIBUTION TO STAKEHOLDERS	4 days	Mon 2/25/08	Thu 2/28/08																	
8	TPP # 1 MEMO STAKEHOLDER & USACE REVIEW & COMMENT PERIOD	60 days	Fri 2/29/08	Mon 4/28/08																	
9	TPP # 1 MEMO ALION RESPOND TO COMMENTS & PREPARATION OF FINAL TPP	14 days	Tue 4/29/08	Mon 5/12/08																	
10	TPP # 1 RESPONSE TO COMMENTS REVIEW / MEMORANDUM CONCURRENCE	6 days	Tue 5/13/08	Sun 5/18/08																	
11	COLLECTION OF ADDITIONAL DATA FROM SITE OWNERS FOLLOWING TPP #1	14 days	Wed 2/13/08	Tue 2/26/08																	
12	PREPARE DRAFT SS-WP w/ADDITIONAL SITE OWNER DATA	14 days	Tue 5/13/08	Mon 5/26/08																	
13	DRAFT SS-WP SUBMITTED TO USACE FOR DISTRIBUTION TO STAKEHOLDERS	6 days	Tue 5/27/08	Sun 6/1/08																	
14	REVIEW & COMMENT PERIOD FOR DRAFT SS-WP BY USACE & STAKEHOLDERS	45 days	Mon 6/2/08	Wed 7/16/08																	
15	RESPOND TO COMMENTS ON SS-WP	4 days	Thu 7/17/08	Sun 7/20/08																	
16	USACE & STAKEHOLDERS REVIEW RESPONSES	3 days	Mon 7/21/08	Wed 7/23/08																	
17	CONFERENCE CALL (IF NEEDED) WITH COMMENTERS TO FINALIZE SS-WP	1 day	Thu 7/24/08	Thu 7/24/08																	
18	PRODUCE FINAL SS-WP	14 days	Fri 7/25/08	Thu 8/7/08																	
19	FIELDWORK PREPERATION AND MOBILIZATION TO SITE	40 days	Fri 8/8/08	Tue 9/16/08																	
20	FIELD WORK - MEC SURVEY, GEOPHYSICS, AND MC SAMPLING	5 days	Wed 9/17/08	Sun 9/21/08																	
21	DEMOBILIZATION FROM SITE	2 days	Mon 9/22/08	Tue 9/23/08																	
22	DATA TO LABORATORY	35 days	Mon 9/22/08	Sun 10/26/08																	
23	DATA TO VALIDATOR	14 days	Mon 10/27/08	Sun 11/9/08																	
24	DATA TO ALION TEAM	4 days	Mon 11/10/08	Thu 11/13/08																	
25	DRAFT SI REPORT	60 days	Fri 11/14/08	Mon 1/12/09																	
26	REVIEW PERIOD OF DRAFT SI REPORT BY USACE	60 days	Tue 1/13/09	Fri 3/13/09																	
27	RESPOND TO USACE COMMENT & PRODUCE DRAFT FINAL SI REPORT	14 days	Sat 3/14/09	Fri 3/27/09																	
28	DRAFT FINAL REPORT SUBMITTED TO USACE FOR DISTRIBUTION TO STAKEHOLDERS	7 days	Sat 3/28/09	Fri 4/3/09																	
29	REVIEW & COMMENT PERIOD FOR DRAFT FINAL REPORT BY USACE & STAKEHOLDERS	60 days	Sat 4/4/09	Tue 6/2/09																	
30	RESPOND TO COMMENTS ON DRAFT FINAL REPORT	7 days	Wed 6/3/09	Tue 6/9/09																	
31	USACE & STAKEHOLDER REVIEW RESPONSES	6 days	Wed 6/10/09	Mon 6/15/09																	
32	TPP #2 (IF NEEDED) WITH STAEHOLDERS/COMMENTERS TO FINALIZE SI REPORT	1 day	Tue 6/16/09	Tue 6/16/09																	◆ 6/16
33	TPP #2 MEMORANDUM PREPARATION	14 days	Wed 6/17/09	Tue 6/30/09																	
34	PRODUCE FINAL SI REPORT	20 days	Wed 6/17/09	Mon 7/6/09																	
35	USACE ACCEPTANCE OF FINAL SI REPORT	7 days	Tue 7/7/09	Mon 7/13/09																	

Project: 11_Montauk_Naval_Sub_Base_Schedule_020808 Date: Fri 2/8/08	Task Progress Split Milestone	Progress Summary Milestone Project Summary	Summary External Tasks Project Summary External Milestone	External Tasks Deadline
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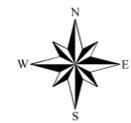


Montauk Naval Sub Base

Montauk, New York
Suffolk County

Legend

Imagery Source: New York
Geographic Information Systems
Clearinghouse (2005)



0 300 600 1,200 Feet

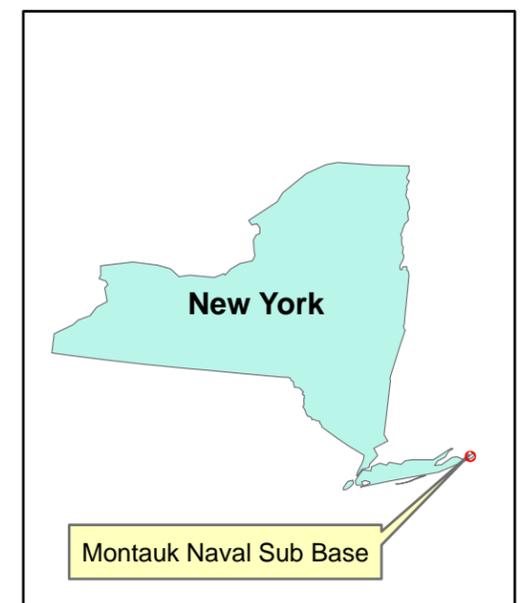


Figure 2. Aerial Map

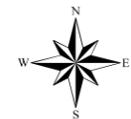
Montauk Naval Sub Base

Montauk, New York
Suffolk County

Legend

-  MRS 1 - Fort Pond Bay and Beach
-  FUDS Boundary

Imagery Source: New York
Geographic Information Systems
Clearinghouse (2005)



0 800 1,600 3,200 Feet

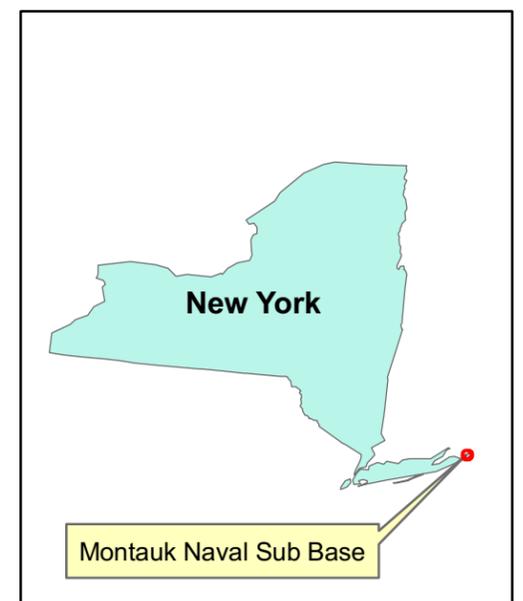


Figure 3. Site Layout

**Montauk Naval
Sub Base**
Montauk, New York
Suffolk County

Legend

-  MRS - 1 Fort Pond Bay and Beach
-  FUDS Boundary

Imagery Source: USGS National Map
Seamless Server 100K (2002)

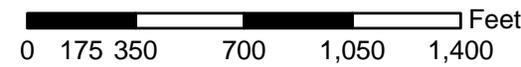


Figure 4: Topographic Map

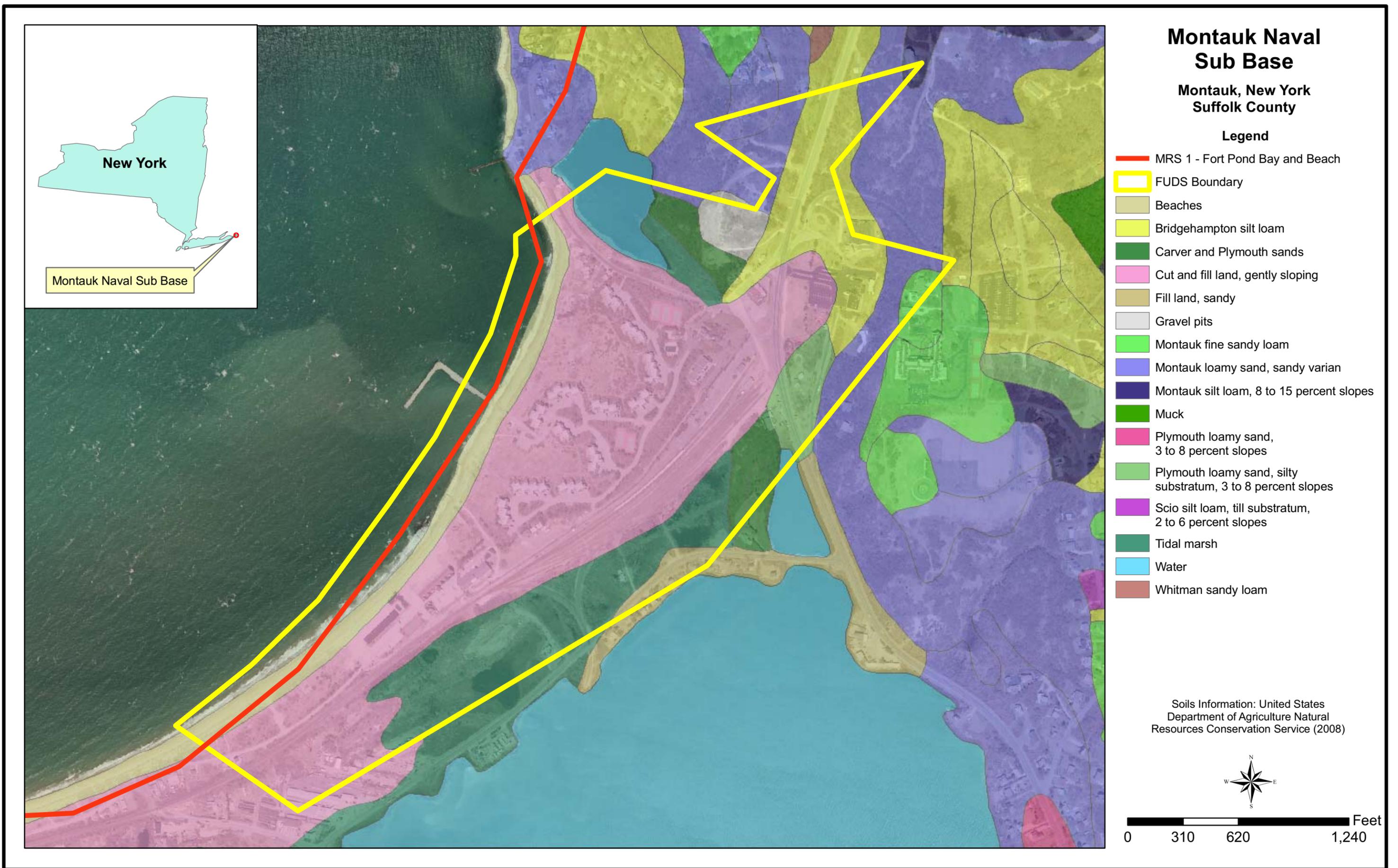
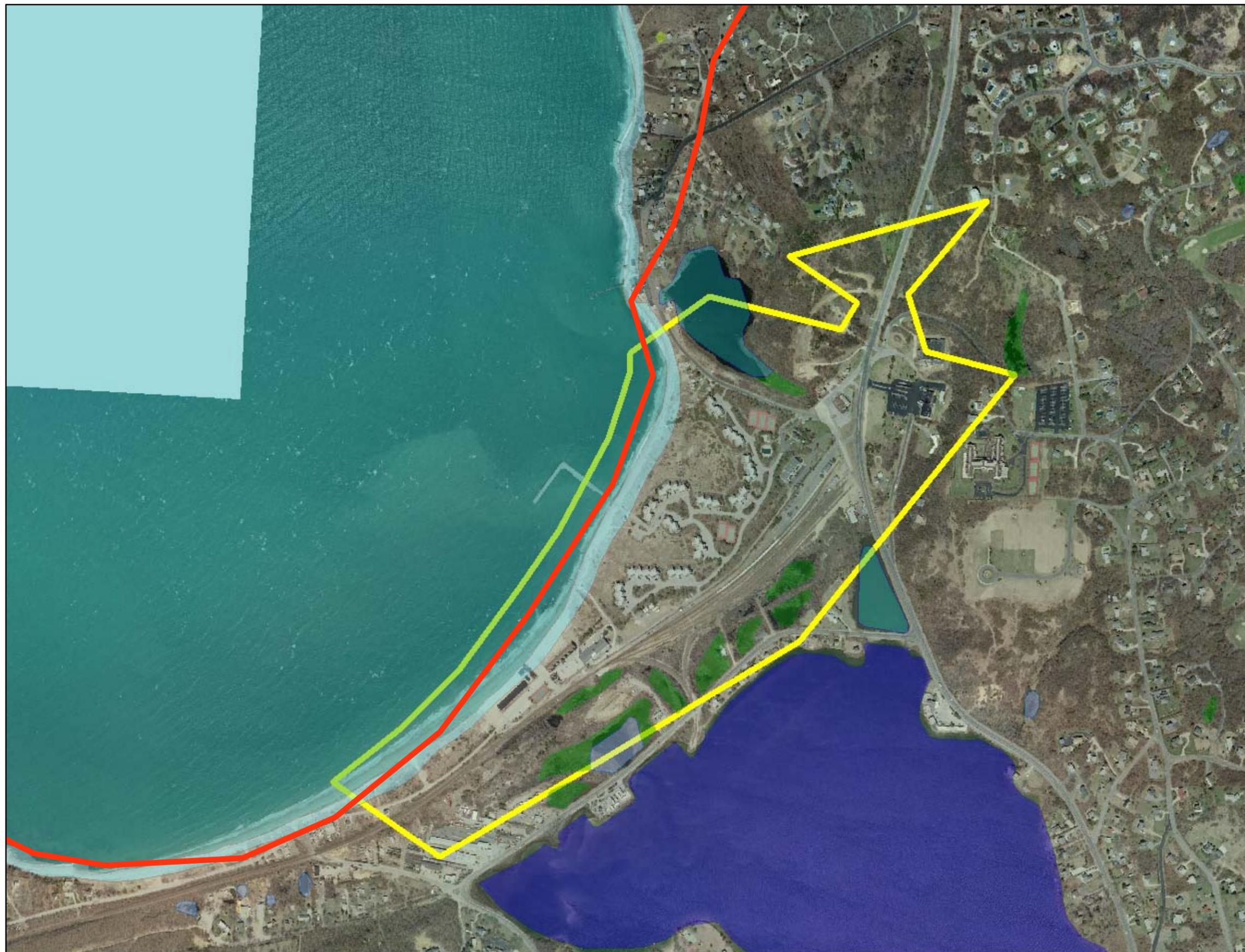


Figure 5. Soils



Montauk Naval Sub Base

Montauk, New York
Suffolk County

Legend

- MRS 1 - Fort Pond Bay and Beach
- FUDS Boundary
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Estuarine and Marine Deepwater
- Freshwater Pond
- Lake
- Riverine
- Other

Wetland Information: United States
Department of Interior - Fish and
Wildlife Service (1998)

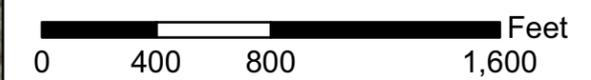
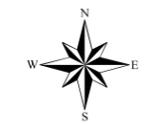
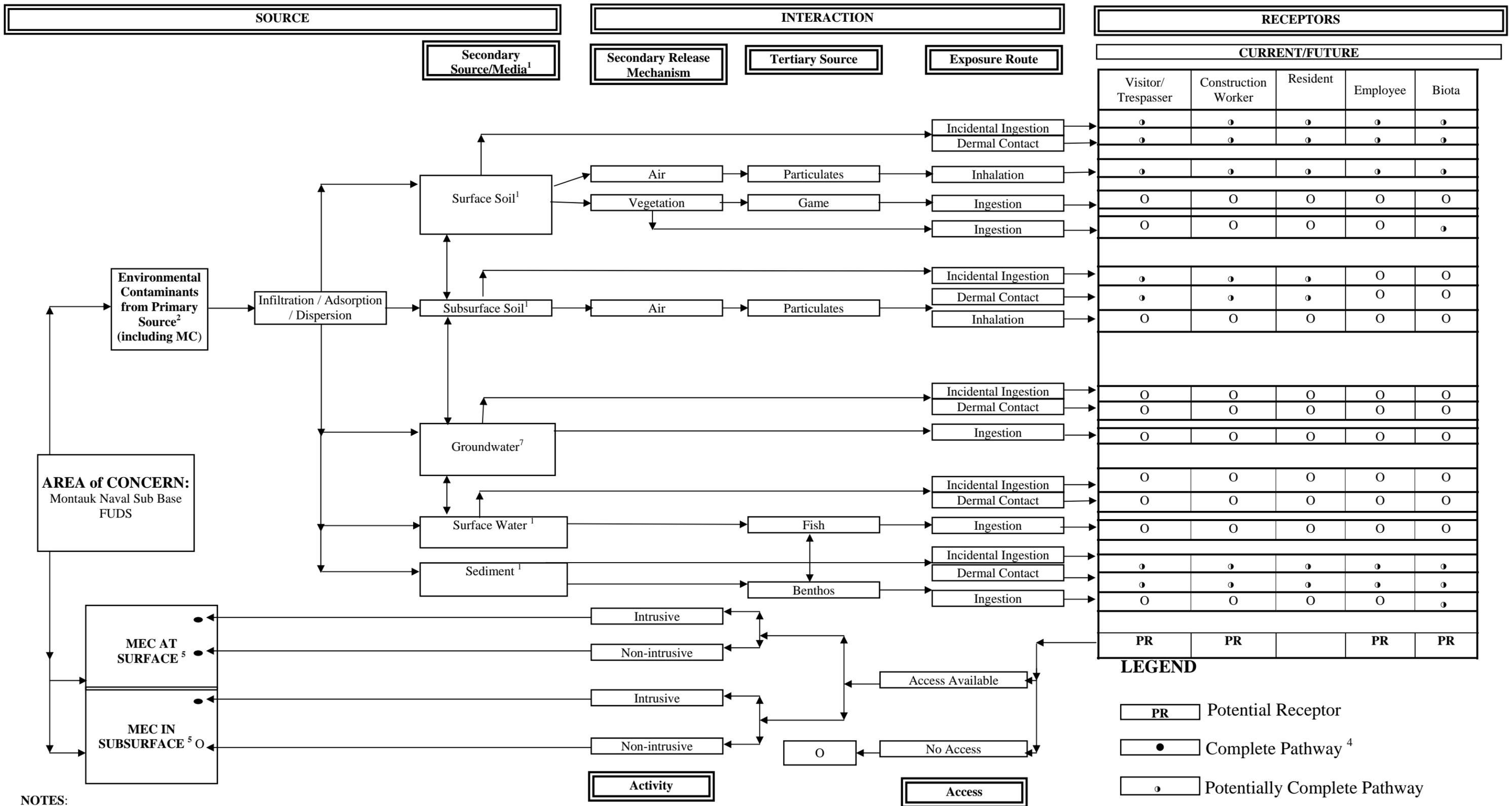


Figure 6. Wetlands

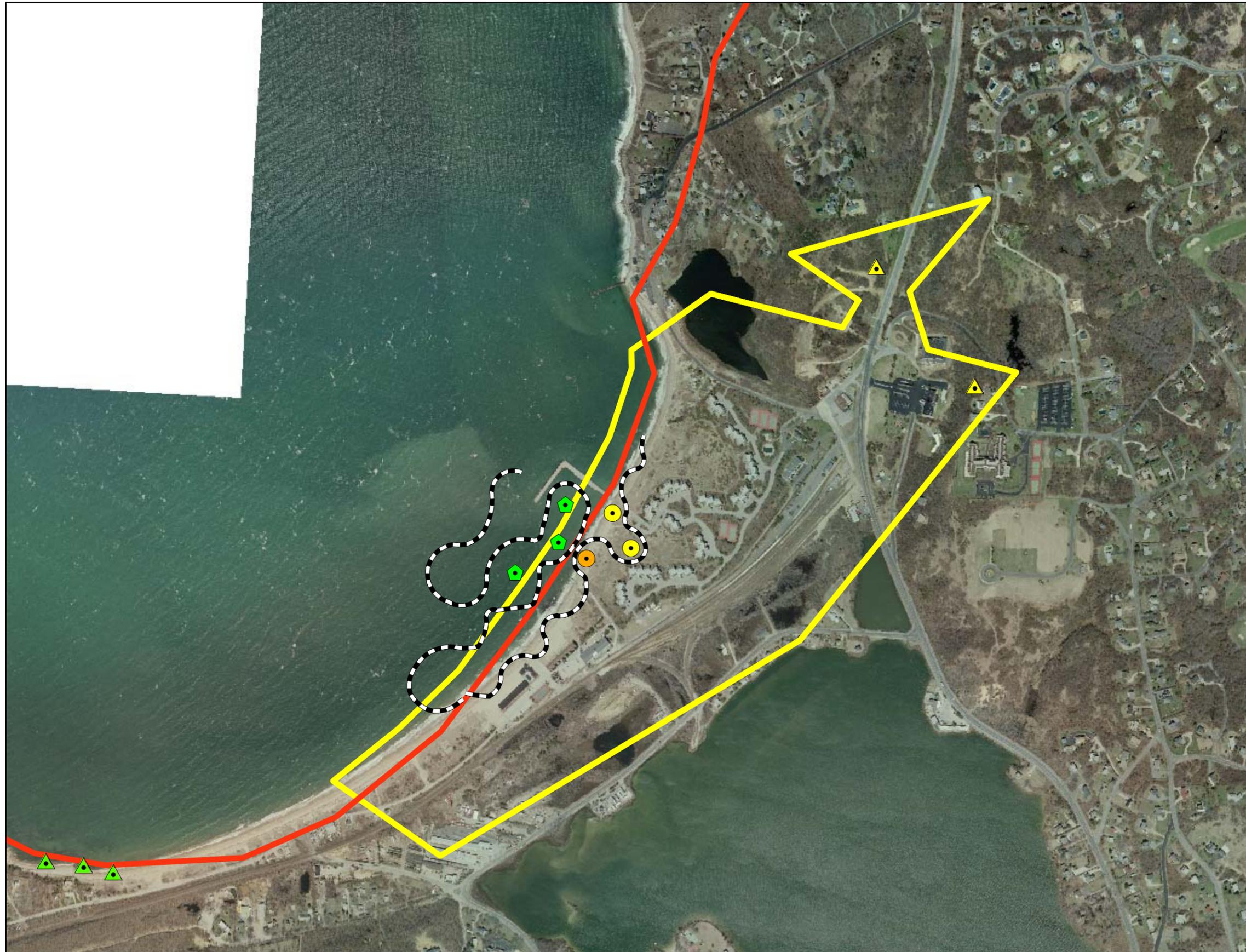


NOTES:

1. Impact to sediment also may occur from surface soil via runoff of particulates. A separate risk for surface soil and subsurface soil may be combined to represent risk from total soil for some receptors.
2. Primary sources will vary but are projected to include suspected use of smoke grenades and photo flash grenades in the obstacle course training area.
3. CSM will be refined as more data is obtained and finalized in the Site Inspection Report.
4. For a pathway to be complete, it must include a source, an exposure medium, an exposure route, and a receptor. A complete pathway may also include a release mechanism and a transport medium.
5. Interaction between a potential receptor and MEC has two components: access and activity.
6. For the MMRP SI at the former Montauk Naval Sub Base, this CSM summarizes the potential risk exposure scenarios for MRS 1, the Fort Bay Pond and Beach area.
7. Site groundwater is not used as a drinking water source (incomplete pathway for ingestion). Drinking Water for the Montauk area is supplied by.

**DIAGRAM OF THE INTEGRATED CONCEPTUAL SITE MODEL FOR
MONTAUK NAVAL SUB BASE SITE^{3, 6}
MRS 1 – Fort Bay Pond and Beach (WORKING DRAFT) – June 2008**

Source: U.S. Army Corps of Engineers (USACE). 2003. *Conceptual Site Models for Ordnance and Explosives (OE) and Hazardous, Toxic, and Radioactive Wastes (HTRW) Projects*. EM1110-1-1200.



Montauk Naval Sub Base

Montauk, New York
Suffolk County

Legend

- Surface Soil (Reduced 6010B Metals & Reduced 8330A Explosives)
- Subsurface Soil (Reduced 6010B Metals & Reduced 8330A Explosives)
- ◆ Sediment (Reduced 6010B Metals & Reduced 8330A Explosives)
- ▲ Background Soil (Reduced 6010B Metals)
- ▲ Background Sediment (Reduced 6010B Metals)
- MRS 1 - Fort Pond Bay and Beach
- FUDS Boundary

Imagery Source: New York Geographic Information Systems Clearinghouse (2005)

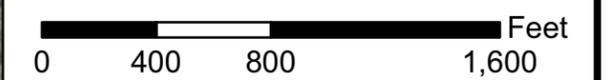
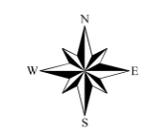


Figure 8. Proposed Geophysical Reconnaissance and Sampling Locations



Montauk Naval Sub Base

Montauk, New York
Suffolk County

Legend

- Surface Soil (Reduced 6010B Metals & Reduced 8330A Explosives)
- Subsurface Soil (Reduced 6010B Metals & Reduced 8330A Explosives)
- Sediment (Reduced 6010B Metals & Reduced 8330A Explosives)
- ▲ Background Soil (Reduced 6010B Metals)
- ▲ Background Sediment (Reduced 6010B Metals)
- MRS 1 - Fort Pond Bay and Beach
- FUDS Boundary

Imagery Source: New York Geographic Information Systems Clearinghouse (2005)

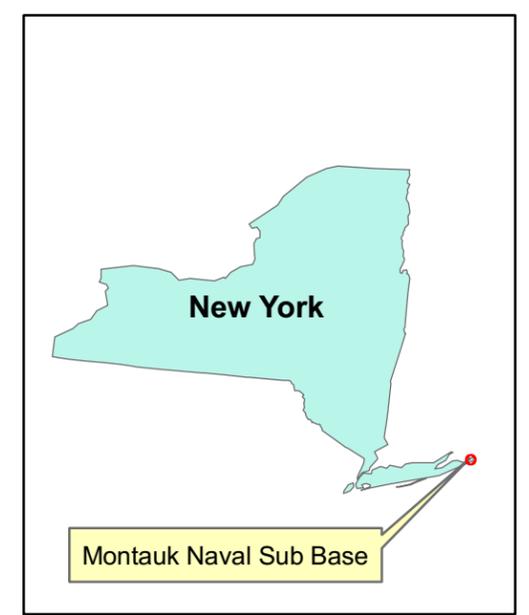
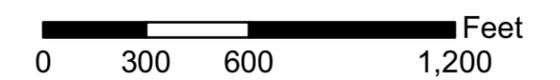
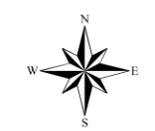


Figure 9: Proposed Sampling Locations

APPENDIX B— DRAFT PHASE I MFR WORK SHEET

Technical Project Planning		
Draft Phase I MFR Worksheet		
Author(s): Alion Team		Reviewer: Rick Swahn
Latest Revision Date: 17 December 2007		Review Date: 18 December 2007
Location: Meeting Location, NY		
Site(s): <u>Montauk Naval Sub Base, New York</u>		
Project: MMRP Project Number C02NY076602		
(Attach Phase I MFR to PMP)		
TPP Team		EM 200-1-2, Paragraph 1.1.1
Decision Maker		
Customer	U.S. Army Corps of Engineers (USACE)	
Project Manager	Richard Gajdek , CENAN	
Design Team Leader	Julie Kaiser, Program Manager, USACE Baltimore District (CENAB) Alan Warminski, Design Team Lead, CENAB	
Team Leaders	Benjamin Claus (Project Manager)/Cheryl Pruiett (Task Lead) — Alion Team	
Regulators	New York State Department of Environmental Conservation (NYSDEC) U.S. Environmental Protection Agency (USEPA), Region II	
Stakeholders	Government agencies/regulators (USACE, USEPA, NYSDEC, etc.) Property owners <ul style="list-style-type: none"> • Rough Riders Landing Condominiums Other potential stakeholders <ul style="list-style-type: none"> • Public interest groups • User groups & community interests • Local, state & federal elected officials • External technical resources (technical experts) 	
Data Types	Data User	Data Gatherer
Compliance / Regulatory (CR)	RISK (Risk Assessors) – CENAB/CENAN/USACE Huntsville Districts; NYSDEC; USEPA Region II	Alion Team
	COMPLIANCE (Regulatory Specialists, Chemists) - NYSDEC; USEPA Region II	
	REMEDY (Engineers, Chemists) – CENAB/CENAN/USACE Huntsville Districts	
	SAFETY (UXO Technician) – CENAB/CENAN/USACE Huntsville Districts	

Demographics/Land Use (LU)	RISK (Risk Assessors) – CENAB/CENAN/USACE Huntsville Districts; NYSDEC; USEPA Region II	Alion Team
	COMPLIANCE (Regulatory Specialists, Chemists) - NYSDEC; USEPA Region II	
	REMEDY (Engineers, Chemists) – CENAB/CENAN/USACE Huntsville Districts	
	SAFETY (UXO Technician) – CENAB/CENAN/USACE Huntsville Districts	
Site Conditions (SC)	RISK (Risk Assessors) – CENAB/CENAN/USACE Huntsville Districts; NYSDEC; USEPA Region II	Alion Team
	COMPLIANCE (Regulatory Specialists, Chemists) – NYSDEC; USEPA Region II	
	REMEDY (Engineers, Chemists) – CENAB/CENAN/USACE Huntsville Districts	
	SAFETY (UXO Technician) – CENAB/CENAN/USACE Huntsville Districts	
Munitions and Explosives of Concern (MEC)	RISK (Risk Assessors) – CENAB/CENAN/USACE Huntsville Districts; NYSDEC; USEPA Region II	Alion Team
	COMPLIANCE (Regulatory Specialists, Chemists) – NYSDEC; USEPA Region II	
	REMEDY (Engineers, Chemists) – CENAB/CENAN/USACE Huntsville Districts	
	SAFETY (UXO Technician) – CENAB/CENAN/USACE Huntsville Districts	

CUSTOMER'S GOALS		EM 200-1-1, Paragraph 1.1.2
Future Land Use(s) @ Site	Issues and Regulatory Compliance Status	Site-specific Closeout Goal (if applicable)
Currently the site is a beach near residential properties. Portions of the site are also under water.	Potential for select Munitions Constituents in certain media as well as munitions and explosives of concern (MEC)	See Site Specific Closeout Goal
Site Closeout Statement		
Achieving the walk-away goal, or final condition of the site, as envisioned by the customer. The final condition of the site includes safe use following any remediation, maintenance, and monitoring for activities that are consistent with the current/future use of the site.		
Customer's Schedule Requirements		
See schedule.		
Customer's Site Budget		
N/A		

IDENTIFY SITE APPROACH		
EXISTING SITE INFORMATION & DATA EM 200-1-2, Paragraph 1.1.3 and 1.2.1		
Attachment(s) to Phase I MFR	Located at Repository	Preliminary Conceptual Site Model
1993 –Inventory Project Report (INPR)	CENAN	Yes
1995 - Archive Search Report (ASR)	CENAN	Yes
2004 - Supplemental ASR	CENAN	Yes
POTENTIAL POINTS OF COMPLIANCE EM 200-1-2, Paragraph 1.2.1.3		
NYSDEC (within boundaries of areas of concern)		
USEPA (within boundaries of areas of concern)		
MEDIA OF POTENTIAL CONCERN EM 200-1-2, Paragraph 1.2.1.4		
Surface and Subsurface Soil and Sediment		
SITE OBJECTIVES EM 200-1-2, Paragraph 1.2.2		
See attached Project Objectives worksheets.		
REGULATOR AND STAKEHOLDER PERSPECTIVES EM 200-1-1, Paragraph 1.2.3		
Regulators	Community Interests	Others
NYSDEC – TBD	TBD	Continued use of the research facility and bird sanctuary by visitors, employees, and property owners.
USEPA – TBD		
PROBABLE REMEDIES EM 200-1-2, Paragraph 1.2.4		
Detonation or removal of suspect MEC if found during the site investigation.		
Removal of residual MEC from the site, treatment of MC via removal, onsite treatment, and engineering/institutional controls as appropriate to reduce the risk to future site users.		
EXECUTABLE STAGES TO SITE CLOSEOUT EM 200-1-2, Paragraph 1.2.5		
Site Inspection (SI)		
Remedial Investigation/Feasibility Study (RI/FS)		
Proposed Plan		
Record of Decision (ROD)/Decision Document		
Remedial Design		
Remedial Action		
Removal Action (if necessary)		
Long-Term Monitoring (if necessary)		

IDENTIFY CURRENT PROJECT		
SITE CONSTRAINTS AND DEPENDENCIES		EM 200-1-2, Paragraph 1.3.1
<u>Administrative Constraints and Dependencies</u>		
SI needs to be completed by April 2009 to meet program needs.		
Acceptance of Programmatic Work Plan and Site Specific Work Plan Addendum prior to field sampling.		
Access agreements need to be in place prior to the start of field sampling activities.		
<u>Technical Constraints and Dependencies</u>		
Need MEC avoidance for sampling.		
Need to abide by Health and Safety Plan.		
<u>Legal and Regulatory Milestones and Requirements</u>		
Need Right of Entry agreement.		
Regulatory evaluations of SI work plan and reporting of SI results and recommendations.		
Section 106 Consultation		
Threatened and endangered (T&E) species determination		
CURRENT EXECUTABLE STAGE		EM 200-1-2, Paragraph 1.3.3
Site Inspection		
Basic (For Current Projects)	Optimum (For Future Projects)	Excessive (Objectives that do not lead to site closeout)
SI (MC Sample collection and MEC qualitative reconnaissance)	NDAI or RI/FS	

Acronyms

ASR – Archive Search Report

EM – Engineer Manual (see www.usace.army.mil/inet/usace-docs/)

INPR – Inventory Project Report

MC – Munitions Constituents

MEC – Munitions and Explosives of Concern

NDAI – No Department of Defense Action Indicated

RA – Removal Action

RAC – Risk Assessment Code type impact analysis conducted during INPR, ASR, and Supplemental ASR

SI – Site Inspection

TPP – Technical Project Planning

USEPA – U.S Environmental Protection Agency

PROJECT OBJECTIVES WORKSHEET

SITE: **Montauk Naval Sub Base, New York**

PROJECT: Project Number - C02NY076602

Site Objective ^a			Description ^c	Source	Data Needs ^d	Data Collection Methods	Project Objective Classification ^e
Number	Executable Stage ^b						
	Current	Future					
1	Yes		Determine if the site requires additional investigation through an RI/FS or if the site may be recommended for No Department of Defense Action Indicated (NDAI) based on the presence or absence of MEC and MC.	ASR, Public	CR, LU, SC, UXO	MEC visual inspection, analog geophysics, MC sampling	Basic
2	Yes		Determine the potential need for a Time-Critical Removal Action (TCRA) for MEC and MC by collecting data from previous investigations/reports, conducting site visits, performing analog geophysical activities, and by collecting MC samples.	ASR, Public	CR, LU, SC, UXO	MEC visual inspection, analog geophysics, MC sampling	Basic
3	Yes		Collect, or develop, additional data, as appropriate, in support of potential Hazard Ranking System (HRS) scoring by Environmental Protection Agency (EPA).	ASR, Public	LU, SC, UXO	MEC visual inspection, analog geophysics, MC sampling	Basic
4	Yes		Collect the additional data necessary to complete the Munitions Response Site Prioritization Protocol (MRSPP).	ASR, Public	CR, LU, SC, UXO	MEC visual inspection, analog geophysics, MC sampling	Basic

a. Refer to EM 200-1-2, Paragraph 1.2.2

b. Refer to EM 200-1-2, Paragraph 1.2.5

c. For example, Meeting with Customer/stakeholder/Regulator, State Regulations

d. Data Needs: **CR**-Compliance/Regulatory, **LU**-Land Use/Demographics, **SC**-Site Conditions, and **UXO**-OE UXO

e. Classification of project objectives can only occur after the current project has been identified. Refer to EM 200-1-2, Paragraph 1.3.3.

Acronyms

ASR-Archive Search Report

EM-Engineer Manual (see www.usace.army.mil/inet/usace-docs/)

**APPENDIX C – DATA QUALITY OBJECTIVE (DQO) WORKSHEETS AND
MEASUREMENT QUALITY OBJECTIVES (MQO) TABLES**

Data Quality Objective Worksheet	
Site: Montauk Naval Sub Base, New York Project: FUDS MMRP SI Project Number C02NY076602 DQO Statement Number: 1 of 4	
DQO Element Description	Site-Specific DQO Statement
Intended Data Use(s):	
Project Objective(s) Satisfied	Determine if the site requires additional investigation through a remedial investigation/feasibility study (RI/FS) or if the site may be recommended for No Department of Defense Action Indicated (NDAI) based on the presence or absence of munitions and explosives of concern (MEC) and munitions constituents (MC).
Data Needs Requirements:	
Data User Perspective(s)	Risk – MEC and MC, Compliance
Contaminant or Characteristic of Interest	MEC or Material Potentially Presenting an Explosive Hazard (MPPEH) and MC
Media of Interest	MEC – Surface soil and subsurface MC – Surface and subsurface soil, sediment
Required Sampling Locations or Areas	MEC and MC: Areas where military munitions-related operations occurred and/or where MEC or MPPEH has been identified historically based on existing documentation and interviews.
Number of Samples Required	<p>MEC – Analog geophysical and visual reconnaissance data, rather than discrete sampling data, will be collected to accomplish this objective. These data will be collected using "meandering path" to and from the sampling points. The UXO Technician will collect data on an approximate 6-ft wide path using the geophysical equipment. The visual reach of observations is approximately 12 ft, and may be limited by the presence of vegetation. Once at the individual sampling point, the geophysical equipment will be used to assess an approximately 25 ft radius circle for anomalies around the sampling point as site conditions permit. In some areas, there may be limitations to the ability to complete geophysical and visual observations. The total estimated area on the paths to/from the sampling locations is approximately 96,712 ft², and the area around the sampling locations is approximately 21,489 ft².</p> <p>MC – Two surface soil samples (one duplicate), one subsurface soil sample, three sediment samples (one duplicate). As well as three background sediment samples and two background surface soil samples.</p>
Reference Concentration of Interest or Other Performance Criteria	MEC: If historic data indicate the presence of MEC and one anomaly classified as of MPPEH, or confirmed MEC is found with the magnetometer, or if physical evidence indicating the presence of MEC is found during the visual inspection, then an RI/FS may be recommended. If no anomalies, MPPEH, or confirmed MEC are found, or if the UXO Technician indicates that there is no potential hazard from past use of munitions or MEC discoveries, then an NDAI may be recommended. In each of these instances, all lines of evidence (e.g.,

Data Quality Objective Worksheet	
Site: Montauk Naval Sub Base, New York Project: FUDS MMRP SI Project Number C02NY076602 DQO Statement Number: 1 of 4	
DQO Element Description	Site-Specific DQO Statement
	<p>historic data, field data, etc.) will be used to make a final decision for an NDAI or RI/FS. In both instances (RI/FS or NDAI), all lines of evidence (<i>e.g.</i>, historic data, field data, etc. for both MEC and MC) will be used to make a final decision for an NDAI or RI/FS.</p> <p>MC: If the maximum concentrations measured at the site exceed EPA Residential Soil Screening Levels based on current and future land use, or EPA interim ecological risk screening values (highest value and mean value), or site-specific background levels (highest value and mean value), then an RI/FS may be recommended for the site. If the maximum concentrations measured at the site do not exceed MSSLs or ecological risk screening values, then an NDAI may be recommended.</p> <p>In summary, all lines of evidence including secondary lines of evidence, such as historic data, field data, and comparison to state screening/cleanup criteria will be used to make a final decision for an NDAI or RI/FS. Screening values selected for comparison at this site are specified in the chemical-specific measurement quality objective (MQO) tables.</p>
Appropriate Sampling and Analysis Methods:	
Sampling Method and Depths	<p>MEC: Geophysics with a handheld analog magnetometer, which will be used to collect related data, is accurate to an approximate depth of 2 ft. Global Positioning System (GPS) equipment will be used to log locations of MEC items encountered by the magnetometer. Visual observations will provide a continuous source of additional information which will be noted in the field log book with GPS coordinates. Photographs also will be used as an additional documentation method. Geophysical methods/procedures will be described in detail in Section 3 of the SS-WP, and the Field Activities section of the programmatic field sampling plan (PFSP).</p> <p>MC: Sampling methods for MC will be described in detail in Section 4 of the SS-WP, and Field Activities section of the PFSP.</p>
Analytical Method	<p>MEC: Analytical methods are not used with analog magnetometry. However, trained UXO professionals, engineers, and scientists will review all data to determine whether evidence gathered indicates the presence or absence of MEC. This analysis will be subject to an independent review within the Alion Team, by the USACE North Atlantic New York (CENAN), USACE Baltimore District Design Center (CENAB), and USACE Center of Expertise.</p> <p>MC: The methods that can be used for analysis include the following:</p>

Data Quality Objective Worksheet	
Site: Montauk Naval Sub Base, New York Project: FUDS MMRP SI Project Number C02NY076602 DQO Statement Number: 1 of 4	
DQO Element Description	Site-Specific DQO Statement
	Explosives Methods–8330A, 8330A (mod) for nitroglycerine; Metals Methods–6010B (reduced); Explosives Prep Methods - 8330A, 8330A (mod) for nitroglycerine; Metals Prep Method – 3050B, 3050 (mod).

Data Quality Objective Worksheet	
Site: Montauk Naval Sub Base, New York Project: FUDS MMRP SI Project Number C02NY076602 DQO Statement Number: 2 of 4	
DQO Element Description	Site-Specific DQO Statement
Intended Data Use(s):	
Project Objective(s) Satisfied	Determine the potential need for a Time-Critical Removal Action (TCRA) for MEC and MC by collecting data from previous investigations/reports, conducting site visits, performing analog geophysical activities, and by collecting MC samples.
Data Needs Requirements:	
Data User Perspective(s)	Risk-MEC/MC, Compliance
Contaminant or Characteristic of Interest	MEC and/or MC on the surface
Media of Interest	MEC – Surface soil MC – Surface soil, subsurface soil and sediment
Required Sampling Locations or Areas	Areas where military munitions-related operations occurred and/or where MEC or MMPEH has been identified historically based on existing documentation and interviews <i>[figure provided in the SS-WP]</i> .
Number of Samples Required	Refer to DQO 1 for MC/MEC sampling parameters.
Reference Concentration of Interest or Other Performance Criteria	<p>If MC is reported in samples collected at the FUDS at concentrations exceeding screening criteria and those exceedances result in unacceptable risk and an imminent threat to receptors as identified through human health and ecological risk assessments or if one piece of confirmed MEC is found with the magnetometer or if physical evidence indicating the presence of MEC is found during the visual inspection, and if the item(s) is determined by a UXO-qualified Technician, explosive ordnance disposal (EOD) unit, and/or the USACE to be an immediate or imminent threat, then one of two actions may be initiated:</p> <p><u>TCRA</u>- If there is a complete pathway between source and receptor and the MEC and the situation is viewed as an “imminent danger threat posed by the release or threat of a release, where cleanup or stabilization actions must be initiated within six months to reduce risk to public health or the environment”, the Alion Team will immediately notify the Military Munitions Design Center Project Manager at USACE and the property owner. USACE will determine, with input from the Alion Team and stakeholders, whether or not a TCRA will be implemented.</p> <p><u>Non-TCRA</u> - A non-TCRA (NTCRA) may be initiated in response to a release or threat of release that poses a risk where more than six months planning time is available.</p>

Data Quality Objective Worksheet	
Site: Montauk Naval Sub Base, New York Project: FUDS MMRP SI Project Number C02NY076602 DQO Statement Number: 2 of 4	
DQO Element Description	Site-Specific DQO Statement
Appropriate Sampling and Analysis Methods:	
Sampling Method and Depths	<p>MEC: Geophysical methods/procedures will be described in detail in Section 3 of the SS-WP, and the Field Activities section of the programmatic field sampling plan (PFSP).</p> <p>MC: Sampling methods for MC will be described in detail in Section 4 of the SS-WP, and Field Activities section of the PFSP.</p>
Analytical Method	Refer to DQO 1 for MEC and MC analytical methods to be incorporated.

Data Quality Objective Worksheet

Site: **Montauk Naval Sub Base, New York**
Project: FUDS MMRP SI Project Number **C02NY076602**
DQO Statement Number: **3 of 4**

DQO Element Description	Site-Specific DQO Statement
Intended Data Use(s):	
Project Objective(s) Satisfied	Collect, or develop, additional data, as appropriate, in support of a potential Hazard Ranking System (HRS) scoring by Environmental Protection Agency (EPA).
Data Needs Requirements:	
Data User Perspective(s)	Risk-MC, Compliance.
Contaminant or Characteristic of Interest	Data for HRS worksheet parameters will be compiled by gathering basic identifying information, general site description, site type, waste description, demographics, water use, sensitive environments, and response actions.
Media of Interest	Surface and subsurface soil, sediment
Required Sampling Locations or Areas	Areas where MEC has been historically found, used, or disposed as documented in interviews or existing documentation.
Number of Samples Required	Refer to DQOs 1 and 2.
Reference Concentration of Interest or Other Performance Criteria	The HRS levels of contamination are Level I (concentrations that meet the criteria for actual contamination and are at or above media-specific benchmark levels), Level II (concentrations that either meet the criteria for actual contamination but are less than media-specific benchmarks, or meet the criteria for actual contamination based on direct observation), and Potential (no observed release is required but targets must be within the target distance limit). These levels are weighted for each target by EPA (Level I carries the greatest weight) and scores of 28.5 or above are then eligible for listing on the National Priorities List (NPL).
Appropriate Sampling and Analysis Methods:	
Sampling Method and Depths	Methods associated with historic data field reconnaissance and sampling (see DQOs 1 and 2). Refer to NPL Characteristics Data Collection Form, Version 3.0 (EPA 2001).
Analytical Method	Refer to DQOs 1 and 2 for associated methods.

Data Quality Objective Worksheet	
Site: Montauk Naval Sub Base, New York Project: FUDS MMRP SI Project Number C02NY076602 DQO Statement Number: 4 of 4	
DQO Element Description	Site-Specific DQO Statement
Intended Data Use(s):	
Project Objective(s) Satisfied	Collect the additional data necessary to complete the Munitions Response Site Prioritization Protocol (MRSPP).
Data Needs Requirements:	
Data User Perspective(s)	Risk-MEC and MC, Compliance
Contaminant or Characteristic of Interest	Explosive Hazard Evaluation (EHE), Chemical Warfare Materiel Hazard Evaluation (CHE), and Health Hazard Evaluation (HHE). For the EHE and CHE modules, factors evaluated include the details of the hazard, accessibility to the Munitions Response Site (MRS), and receptor information. HHE factors include an evaluation of MC and any non-munitions-related incidental contaminants present, receptor information, and details pertaining to environmental migration pathways. Typical information compiled includes details pertaining to historical use, current/future use and ownership, cultural/ecological resources, and structures.
Media of Interest	Surface soil, sediment, and groundwater
Required Sampling Locations or Areas	Areas where MEC has been identified historically and where sampling is recommended.
Number of Samples Required	Refer to DQOs 1 and 2 for related sampling required.
Reference Concentration of Interest or Other Performance Criteria	An MRS priority is determined by USACE based on integrating the ratings from the EHE, CHE, and HHE modules. Refer to Federal Register/Vol. 70, No. 192/Wednesday, October 5, 2005/Rules and Regulations.
Appropriate Sampling and Analysis Methods:	
Sampling Method and Depths	Data gathering prior to field activities as well as additional data gathered during field reconnaissance and sampling (DoD 2005).
Analytical Method	Refer to DQOs 1 and 2 for associated methods.

Table 1. Evaluation of Potential Chemical-Specific Measurement Quality Objectives for Soil								
Analyte	Abbreviation	CAS #	EPA Interim Eco-SSL (mg/kg)	EPA Residential Soil Screening Levels (1) (mg/kg)	Lowest Value (mg/kg)	Preferred Maximum Method Quantitation Limit, Soil (2) (mg/kg)	Lab Method Detection Limit (MDL) (mg/kg)	Lab Reporting Limit (mg/kg)
Explosives								
2,4-Dinitrotoluene	2,4-DNT	121-14-2	30 ^a	0.72	0.72	0.36	0.0036	0.04
2,6-Dinitrotoluene	2,6-DNT	606-20-2	30 ^a	0.72	0.72	0.36	0.0097	0.04
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	80 ^a	1.2	1.2	0.6	0.0056	0.04
2-Nitrotoluene	2-NT	88-72-2	30 ^a	0.88	0.88	0.44	0.0120	0.08
3-Nitrotoluene	3-NT	99-08-1	30 ^a	73	30	15	0.012	0.08
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	80 ^a	1.2	1.2	0.6	0.0077	0.04
4-Nitrotoluene	4-NT	99-99-0	30 ^a	12	12	6	0.017	0.08
Nitroglycerin	NG	55-63-0	-	35	35	17.5	0.43	5.0
Metals								
Antimony	Sb	7440-36-0	78^b	3.1	3.1	1.55	0.31	2
Copper	Cu	7440-50-8	28 ^c	290	28	14	0.068	1
Iron	Fe	7439-89-6	-	5500	5500	2750	1.93	15
Lead	Pb	7439-92-1	11 ^d	400	11	5.5	0.16	1
Nickel	Ni	7440-02-0	38 ^e	160	38	19	0.12	1

Notes:

- = No Standard

CAS# = Chemical Abstracts Service Number

Eco-SSL = Ecological Soil Screening Level

EPA = Environmental Protection Agency

MDL = Method Detection Limit

mg/kg = milligrams per kilogram

MSSL = Medium-Specific Screening Level

PMMQL = Preferred Maximum Method Quantitation Limit

PRG = Preliminary Remediation Goal

RC = Reportable Concentration

(1) ORNL Residential Soil Screening Levels. Dated 01 July 2008. Values of non-cancerous compounds were divided by 10. http://epa-prgs.ornl.gov/chemicals/download/master_sl_table_run_20JUNE2008.pdf

(2) PMMQL is one half of the Lowest Value

Bolded rows indicate occurrences when the Preferred Maximum Method Quantitation Limit is less than the Method Detection Limit

Bolded italicized rows indicate occurrences when the Preferred Maximum Method Quantitation Limit is less than the Reporting Limit

^a Talmage et al., 1999; values are based on 2,4,6-TNT, except for 2-Amino-4,6-dinitrotoluene and 4-Amino-2,6-dinitrotoluene
Value of Noncancerous compounds were divided by 10

^b EPA. 2005a. *Ecological Soil Screening Level for Antimony*. Available from http://www.epa.gov/ecotox/ecossl/pdf/eco-ssl_antimony.pdf.

^c EPA. 2007a. *Ecological Soil Screening Level for Copper*. Available from http://www.epa.gov/ecotox/ecossl/pdf/eco-ssl_copper.pdf.

^d EPA. 2005d. *Ecological Soil Screening Level for Lead*. Available from http://www.epa.gov/ecotox/ecossl/pdf/eco-ssl_lead.pdf.

^e EPA. 2007b. *Ecological Soil Screening Level for Nickel*. Available from http://www.epa.gov/ecotox/ecossl/pdf/eco-ssl_nickel.pdf.

Table 2. Evaluation of Potential Chemical-Specific Measurement Quality Objectives for Sediment								
Analyte	Abbreviation	CAS #	EPA Residential Soil Screening Levels (1) (mg/kg)	Ecological Sediment Screening Value (mg/kg)	Lowest Value (mg/kg)	Preferred Maximum Method Quantitation Limit, Soil (2) (mg/kg)	Lab Method Detection Limit (MDL) (mg/kg)	Lab Reporting Limit (mg/kg)
Explosives								
2,4-Dinitrotoluene	2,4-DNT	121-14-2	0.72 ^a	0.09 ^b	0.09	0.045	0.0036	0.04
2,6-Dinitrotoluene	2,6-DNT	606-20-2	0.72 ^a	0.09 ^b	0.09	0.045	0.0097	0.04
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	1.2 ^c	-	12	6	0.0056	0.04
2-Nitrotoluene	2-NT	88-72-2	2.8	0.09 ^b	0.09	0.045	0.012	0.08
3-Nitrotoluene	3-NT	99-08-1	160	0.09 ^b	0.09	0.045	0.012	0.04
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	1.2 ^c	-	12	6	0.0077	0.04
4-Nitrotoluene	4-NT	99-99-0	40	0.09 ^b	0.09	0.045	0.017	0.08
<i>Nitroglycerin</i>	<i>NG</i>	<i>55-63-0</i>	<i>6.1</i>	<i>-</i>	<i>6.1</i>	<i>3.05</i>	<i>0.86</i>	<i>4</i>
Metals								
Antimony	Sb	7440-36-0	3.1	2.0 ^d	2	1	0.31	2
Copper	Cu	7440-50-8	290	31.6 ^e	31.6	15.8	0.068	1
Nickel	Ni	7440-02-0	160	20.9 ^f	20.9	10.45	0.12	1
Iron	Fe	7439-89-6	5500	-	5500	2750	1.93	15
Lead	Pb	7439-92-1	400	35.8 ^e	35.8	17.9	0.16	1

Notes:

- = No Standard

CAS# = Chemical Abstracts Service Number

EPA = Environmental Protection Agency

mg/kg = milligrams per kilogram

MSSL = Medium-Specific Screening Level

RC = Reportable Concentration

(1) ORNL Residential Soil Screening Levels. Dated 01 July 2008. Values of non-cancerous compounds were divided by 10. http://epa-prgs.ornl.gov/chemicals/download/master_sl_table_run_20JUNE2008.pdf. Values of non-cancerous compounds were divided by 10. All values were increased by a factor

(2) Preferred Method Maximum Quantitation Limit is 1/2 of the Lowest Value unless the Method Detection Limit or Laboratory Reporting Limit is higher than the Lowest Value.

Bolded rows indicate occurrences when the Preferred Maximum Method Quantitation Limit is less than the Method Detection Limit

Bolded italicized rows indicate occurrences when the Preferred Maximum Method Quantitation Limit is less than the Reporting Limit

Note: Chemicals that are not CERCLA hazardous substances (e.g., iron, aluminum, barium, magnesium) can be reported in the SI; however, the SI risk evaluation and conclusions will include a discussion of the limitations of the FUDS program to respond to such chemicals. Non-CERCLA chemical concentrations will not provide the basis for a RI/FS recommendation for MCs in the SI report.

^a Based on Dinitrotoluene mixtures

^b Talmage, S.S., D.M. Opresko, C.J. Maxwell, J.E. Welsh, M. Cretella, P.H. Reno, and F.B. Daniel. 1999. Nitroaromatic munitions compounds: Environmental effects and screening values. *Reviews in Environmental Contamination and Toxicology*. 161: 1-156. Except for 2-Amino-4,6-dinitrotoluene and 4-Amino-2,6-dinitrotoluene, trinitrotoluene was used as a surrogate.

^c Since no values were available from EPA Region 6 MSSSL, values from EPA Region 9 2004 Preliminary Remediation Goals (PRGs) were used.

^d Long, E.R. and L.G. Morgan. 1990. The potential for biological effects of sediment-sorbed contaminants tested in the national status and trends program. *National Oceanic and Atmospheric Administration Technical Memorandum NOS OMA 52*.

^e MacDonald, D.D., C.G. Ingersoll, and T.A. Berger. 2000. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. *Archives of Environmental Contamination and Toxicology*, 39:20-31. Consensus-based sediment screening values.

^f Long, E.R., D.D. MacDonald, S.L. Smith, and F.D. Calder. 1995. Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. *Environmental Management*, v. 19, no. 1, pp. 81-97.

The soil screening value for antimony was derived from back-calculation of risk to mammalian receptors by Ecological Soil Screening Levels (EcoSSL) (EPA 2005a). This is a theoretical conservative estimate, and is actually less than typical background conditions (EPA 2005a). The MDL for antimony in soil is 0.42 mg/kg, which is close to the EcoSSL screening value of 0.27 mg/kg. Under these circumstances, the detection of antimony in soil, either estimated or unqualified, would trigger a risk assessment.

MDL and RL Exceedances of the Preferred Maximum Quantitation Limit (PMMQL)	
Sediment	Soil
	<i>Antimony</i>

In summary, the primary uncertainty associated with achieving PMMQLs is associated with those analytes where the standard analytical methodology fails to achieve the MDL. The impact of the individual exceedance on the overall data set will have to be evaluated, based on the magnitude of the exceedance, the analyte of concern, the likelihood that that analyte is a constituent of the munitions used at the site, and its value as target or indicator analyte in the SI Report.

**APPENDIX D—INTERIM GUIDANCE DOCUMENT (IGD) AND MUNITIONS
DATA SHEETS**

**Interim Guidance
Ordnance and Explosives Risk Impact Assessment**

U.S. Army Engineering and Support Center, Huntsville

27 March 2001

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1. Purpose. Ordnance and Explosives Risk Impact Assessment (OERIA) provides a method of risk assessment that is more easily understood by, and communicated to, stakeholders. The OERIA is used during the conducting of the Ordnance and Explosives (OE) Engineering Evaluation and Cost Analysis (EE/CA). OERIA provides a qualitative risk assessment for OE sites by using direct analysis of site conditions and human issues that create OE risk. The OERIA will be used as an input to an evaluation of response alternatives under the Effectiveness Criteria.

2. Background. The use of statistically based risk assessment and analysis techniques has often caused difficulty in stakeholder communications concerning risk and the role risk plays in comparing response alternatives and selecting a response action. The OERIA provides a qualitative risk assessment in lieu of a statistically based risk assessment that will allow more effective, clear risk communication among all stakeholders.

3. Processes and Procedures

3-1. Technical Project Planning. The project team should follow the Technical Project Planning (TPP) process to establish project objectives and response alternatives. In accordance with TPP, the project team should develop project objectives with the customers, stakeholders, and the regulators. The development of project objectives ensures that the goals and needs of the customer(s), stakeholders, and regulators are the foundation for selecting and implementing a response action. Additional information on the Technical Project Planning process is provided in EM 200-1-2 and from the OE Mandatory Center of Expertise (MCX). The OE MCX is developing OE specific TPP interim guidance for publication in the near future.

3-2. OE Risk Impact Assessment. The three steps in the OERIA process are:

1. Review base factors and identify additional factors to assess.
2. Develop baseline risk assessment.
3. Assess the response alternatives.

a. Step 1 – Review Base Factors and Identify Additional Factors to Assess. Review the basic risk factor categories listed below. Add any additional risk factors that are identified by the project team for assessment.

(1) The basic risk factor categories are:

1. Ordnance and Explosives Factors
 - Type
 - Sensitivity
 - Quantity or Density
 - Depth
2. Site Characteristics Factors
 - Accessibility
 - Stability
3. Human Factors

- Activities
- Population

(2) The characterization plan should take into account the data requirements to assess the risk factors selected from the list above for a given site.

b. Step 2. Baseline Risk Assessment. Risk Factors Requiring Assessment. Three categories of basic risk factors that should be evaluated are OE, Site Characteristics, and Human Factors. In addition, other risk factors identified in step 1 should be assessed. Only the basic risk factors are discussed below.

(1) OE. This category covers the physical characteristics (OE type, sensitivity) and location/extent (density, quantity, depth) of OE at a given site.

(a) Type. The type of OE affects the likelihood and severity of injury if OE functions when encountered by an individual. Table 1 shows the four levels of risk used for completing the baseline risk assessment in order from highest to lowest potential hazard.

(b) Sensitivity. OE Sensitivity affects the likelihood of the item functioning as designed when encountered by an individual. For purposes of completing the baseline risk assessment, Table 2 lists four levels of OE sensitivity in order from highest to lowest sensitivity. The information in Table 2 should be amplified with information on activities that could cause the OE present to function (e.g., pressure from stepping on the item, fuze activation from moving the item, etc.).

(c) Density or Quantity. OE density or quantity affects the likelihood that an individual will encounter OE at the site. Relationships exist between density/quantity and the likelihood of encountering OE on the site. The nature of the density or quantity of OE at the site (e.g., distribution, location, etc.) should be explained in as much detail as possible.

(d) Depth. OE depth, when considered along with site activities (see paragraph (3)(a) below), affects the likelihood that an individual will encounter OE present at a site. Generally speaking, the deeper the OE, the less likely anyone will encounter it. However, the site activities must also be examined to ensure this general rule holds true for a given site.

(2) Site Characteristics. This category refers to the physical conditions of the site and natural events that may occur at the site.

(a) Site Accessibility. The accessibility of the site affects the likelihood of individuals encountering OE. The presence or absence of man-made or natural barriers to the site affects the level of accessibility to a given site. Using the descriptions in Table 3, the relative accessibility of the site can be assessed. Man-made barriers can include walls and fences. Natural barriers can include the terrain or topography of the site and vegetation.

(b) Site Stability. Site stability affects the likelihood of individuals encountering OE as a result of changing conditions on the site caused by natural processes. These natural processes include recurring events (e.g., frost heave, sand movement, or erosion) or extreme, infrequent

events (e.g., tornados, earthquakes, or hurricanes). Using Table 4, the level of site stability can be assessed based upon knowledge of natural processes present at the site.

(3) Human Factors. This category refers to the types of activities that exist on the site, the number of people that may have access, and the frequency of the access to the site on a daily basis.

(a) Site Activities. The types of activities conducted at a site are related to the likelihood of individuals encountering OE. The types of activities may be generally classified as recreational (hiking, camping, biking, etc.) and occupational (farming, industrial, etc.). The level of potential encounter for an activity can be determined using Table 5. The levels are 'Low', 'Moderate', and 'Significant', each referring to the relative probability that performing a given activity will result in an individual encountering OE. The relative probabilities in Table 5 are generally associated with the depth of intrusive actions (into the earth) caused by a given activity compared to the actual depth that OE is found at the site. The minimum depth of OE is used as input to Table 5.

(b) Population. The number of people using the site and the frequency of that use affects the likelihood of an individual encountering OE. An estimate of the number of people using a site, and the frequency of that use, is determined based on the type and location of the site, access restrictions, natural and/or man-made barriers, surrounding population, and other demographics.

(4) The assessments of the three risk factor categories are then put into the first line (Baseline Risk Assessment (Existing Conditions)) of the OERIA Table. A blank OERIA Table is shown in Table 6.

c. Step 3 – Assess the Response Action Alternatives.

(1) Overview. After completing the baseline risk assessment, the response action alternatives are assessed using the basic risk factors in the OERIA Table and other risk factors identified in step 1 for a given site. Table 7 provides an example of an OERIA Table completely filled in with baseline risk assessment and response action alternatives assessment data.

(2) Ranking of Response Action Alternatives for Each Basic Risk Factor. The response action alternatives are analyzed and ranked using each risk factor identified in the baseline risk assessment. Each response action alternative will be assigned an impact evaluation score of 'No Impact' or an alphabetical rank from 'A' to 'D' representing the relative impact of the response action alternative – with 'A' being the highest impact and 'D' being the lowest ('D' is used to notate the lowest impact when there are 4 alternatives, 'E' when there are 5 possible alternatives, etc.). This comparison provides a qualitative indication of the change in the potential for harm and level of protectiveness at the site for each response action alternative that could be implemented. For example, the response alternative of No Department of Defense (DoD) Action Indicated (i.e., a response action will not be conducted) may be compared to the response alternative of surface clearance. The OERIA will qualitatively compare the level of protectiveness and potential for harm as a result of implementing each response action

alternative, including taking no action at a given site.

(3) Overall Ranking of Response Alternatives. The project team will assign an overall alphabetical rank to each response action alternative based upon the impact ranks for each factor. The response action alternative that provides the greatest impact on risk from OE (i.e., achieves the most reduction of the risks posed by the site) will be assigned an 'A'.

(4) Reporting. The results of this qualitative review should be presented to the customer, stakeholders and other interested community members in the EE/CA report. The OERIA results should then be applied in the evaluation of removal alternatives. The OERIA results will be an input to the evaluation of the Effectiveness Criteria.

Table 1 - OE TYPE CATEGORIES

Category	Description
3	OE that will kill an individual if detonated by an individual's activities
2	OE that will cause major injury to an individual if detonated by an individual's activities
1	OE that will cause minor injury to an individual if detonated by an individual's activities
0	Inert OE or scrap, will cause no injury

Table 2 - OE SENSITIVITY CATEGORIES

Category	OE Sensitivity
3	OE that is very sensitive
2	OE that is less sensitive
1	OE that may have functioned correctly or is unfuzed but has a residual risk
0	Inert OE or scrap, will cause no injury

Table 3 - OE SITE ACCESS LEVELS

Access Level	Access Description
No Restriction to Site	No man-made barriers, gentle sloping terrain, no vegetation that restricts access, no water that restricts access
Limited Restriction to Access	Man-made barriers, vegetation that restricts access, water, snow or ice cover, and/or terrain restricts access
Complete Restriction to Access	All points of entry are controlled

Table 4 - OE SITE STABILITY RISK LEVELS

Stability Level	Stability Description
Site Stable	OE should not be exposed by natural events
Moderately Stable Site	OE may be exposed by natural events
Site Unstable	OE most likely will be exposed by natural events

Table 5 - ACTIVITIES OE CONTACT PROBABILITY LEVELS

Examples of Activities	Actual Depth of OE	Contact Level
Child Play, Short Cuts, Hunting, Fishing, Hiking, Swimming, and Jogging,	0-6"	Significant
	6"-12"	Low
	>12"	Low
Picnic, Camping, Metal Detecting	0-6"	Significant
	6"-12"	Moderate
	>12"	Low
Construction, Archaeology, Crop Farming	0-6"	Significant
	6"-12"	Significant
	>12"	Moderate

Table 6 - OE RISK IMPACT ASSESSMENT

Alternatives	Ordnance				Site		Human		Overall Rank
	Type	Sensitivity	Density	Depth	Access	Stability	Activity	Population	
Baseline Risk Assessment (Existing Conditions)									
No DoD Action Indicated									
Institutional Controls									
Surface With Institutional Controls									
Clearance to Detectable Depth With Institutional Controls									

Table 7 - OE RISK IMPACT ASSESSMENT

Alternatives	Ordnance				Site		Human		Overall Rank
	Type	Sensitivity	Density	Depth	Access	Stability	Activity	Population	
Baseline Risk Assessment (Existing Conditions)	Cat 1 22 mm	Cat 2	0.18	0-6"	No restriction to site	Site stable	Significant (hiking, other recreational)	~200 per day	
No DoD Action Indicated	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	D
Institutional Controls	No Impact	No Impact	No Impact	No Impact	A	No Impact	A	A	B
Surface With Institutional Controls	No Impact	No Impact	B	B	A	No Impact	C	B	B
Clearance to Detectable Depth With Institutional Controls	A	A	A	A	No Impact	No Impact	B	C	A

MUNITIONS LIST:

ID	NAME	DATA SHEET
CTT01	50 CAL. MACHINE GUN	NO
CTT01	SMALL ARMS, GENERAL	YES
CTT02	SMALL ARMS, GENERAL -COMPLETE ROUNDS	NO

CTT01
SMALL ARMS

SMALL-ARMS AMMUNITION

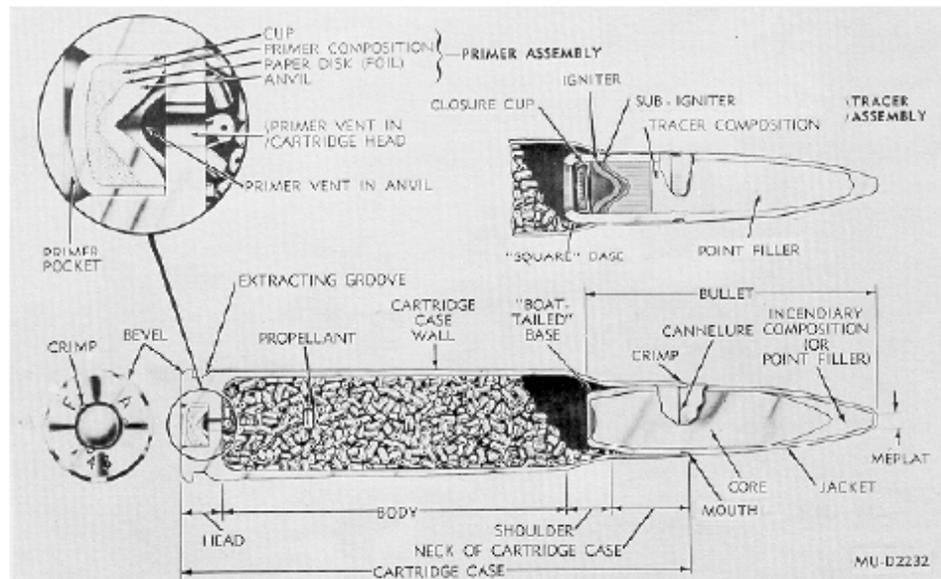


Figure 1. Typical cartridge (sectional)

General. Small-arms ammunition, as used herein, describes a cartridge or families of cartridges intended for use in various types of hand-held or mounted weapons through 30 millimeter. Within a caliber designation, these weapons may include one or more of the following: rifles (except recoilless), carbines, pistols, revolvers, machineguns and shotguns. For purposes of this publication, small-arms ammunition may be grouped as cartridges intended primarily for combat or training purposes (API, HEI, tracer or ball); for training purposes only (blank or dummy); or for special purposes (rifle grenade or spotter-tracer). Refer to TM 9-1306-200 for more detailed information on small-arms ammunition.

Cartridges. In general, a small-arms cartridge is identified as an assembly of a cartridge case, primer, a quantity of propellant within the cartridge case, and a bullet or projectile. Blank and rifle grenade cartridges are sealed with paper closure disks in lieu of bullets. Dummy cartridges are composed of a cartridge case and a bullet. Some dummy cartridges contain inert granular materials to simulate the weight and balance of live cartridges. A typical cartridge and the terminology of its components are shown in figure 1.

Case. Although steel, aluminum, zinc and plastic materials have been used experimentally, brass, a composition of 70 percent copper and 30 percent zinc, is the most commonly used material for cartridge cases. Steel, as well as brass, is an approved material for caliber .45 cartridge cases. Brass, paper and plastic are used for 12 gage shotshell bodies. Aluminum is used for military-type .410 gage shotshell bodies. Configurations of cartridges and bullets are illustrated in figures 2 through 9.

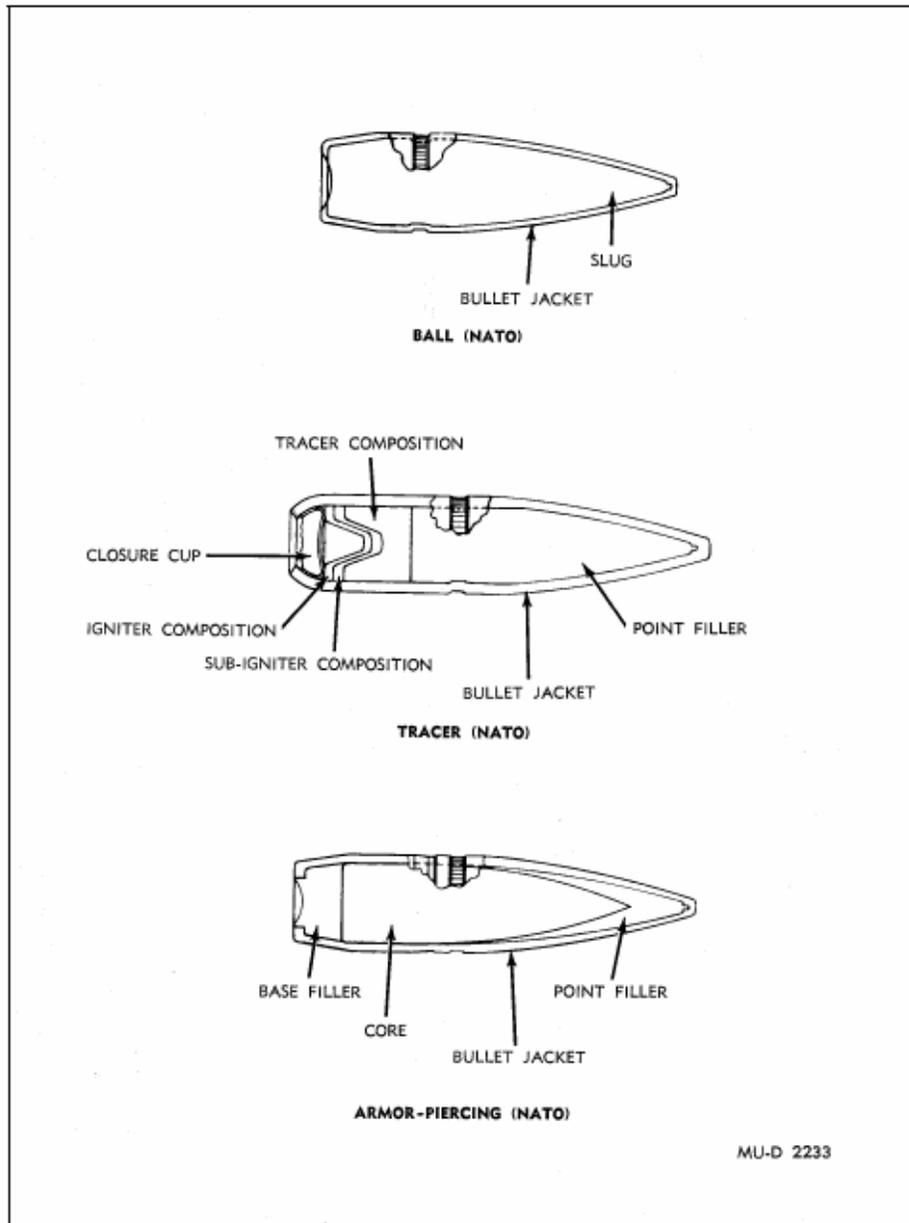


Figure 2. 7.62 mm bullets (sectional)

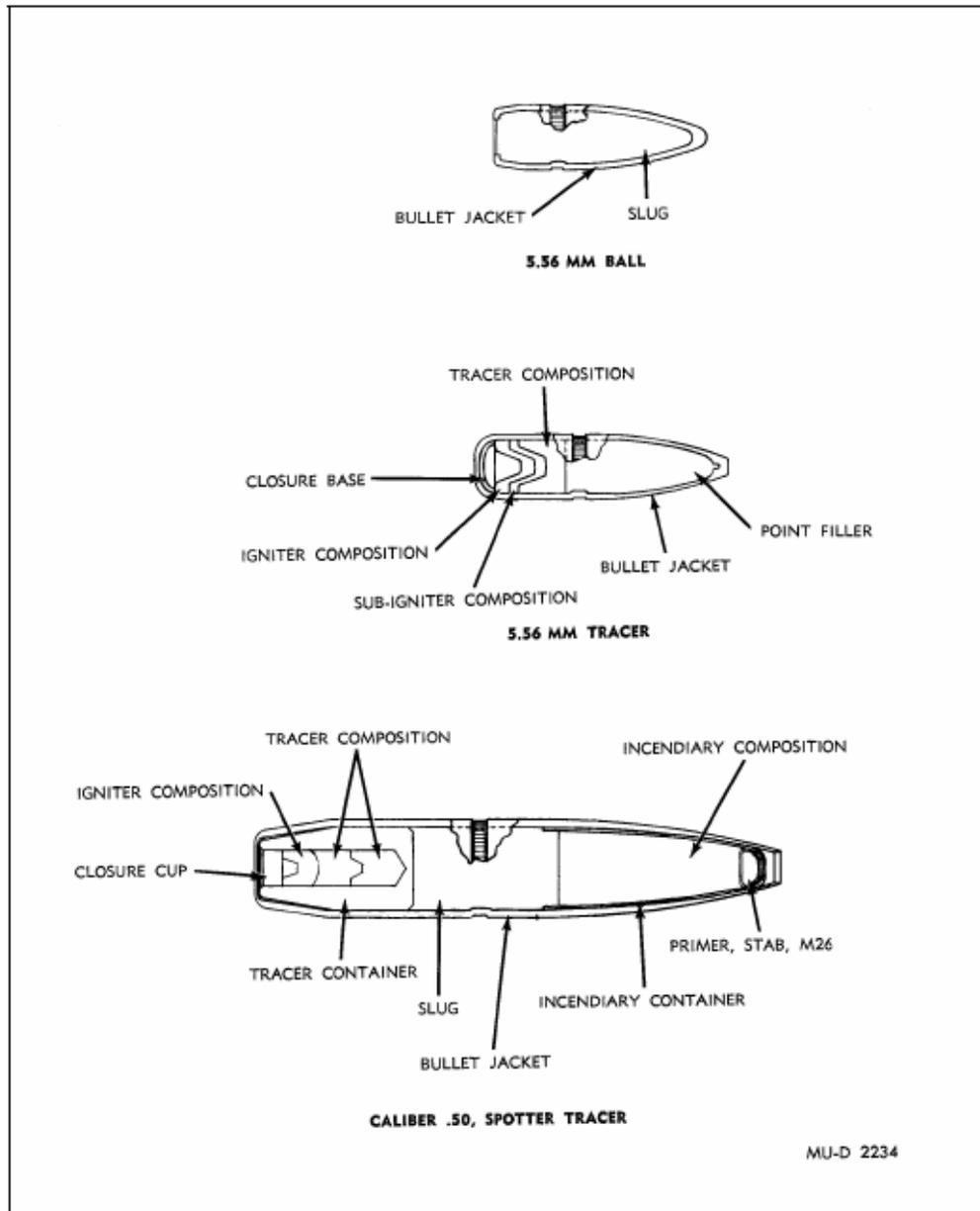


Figure 3. 5.56mm and caliber .50 spotter tracer bullets (sectioned)

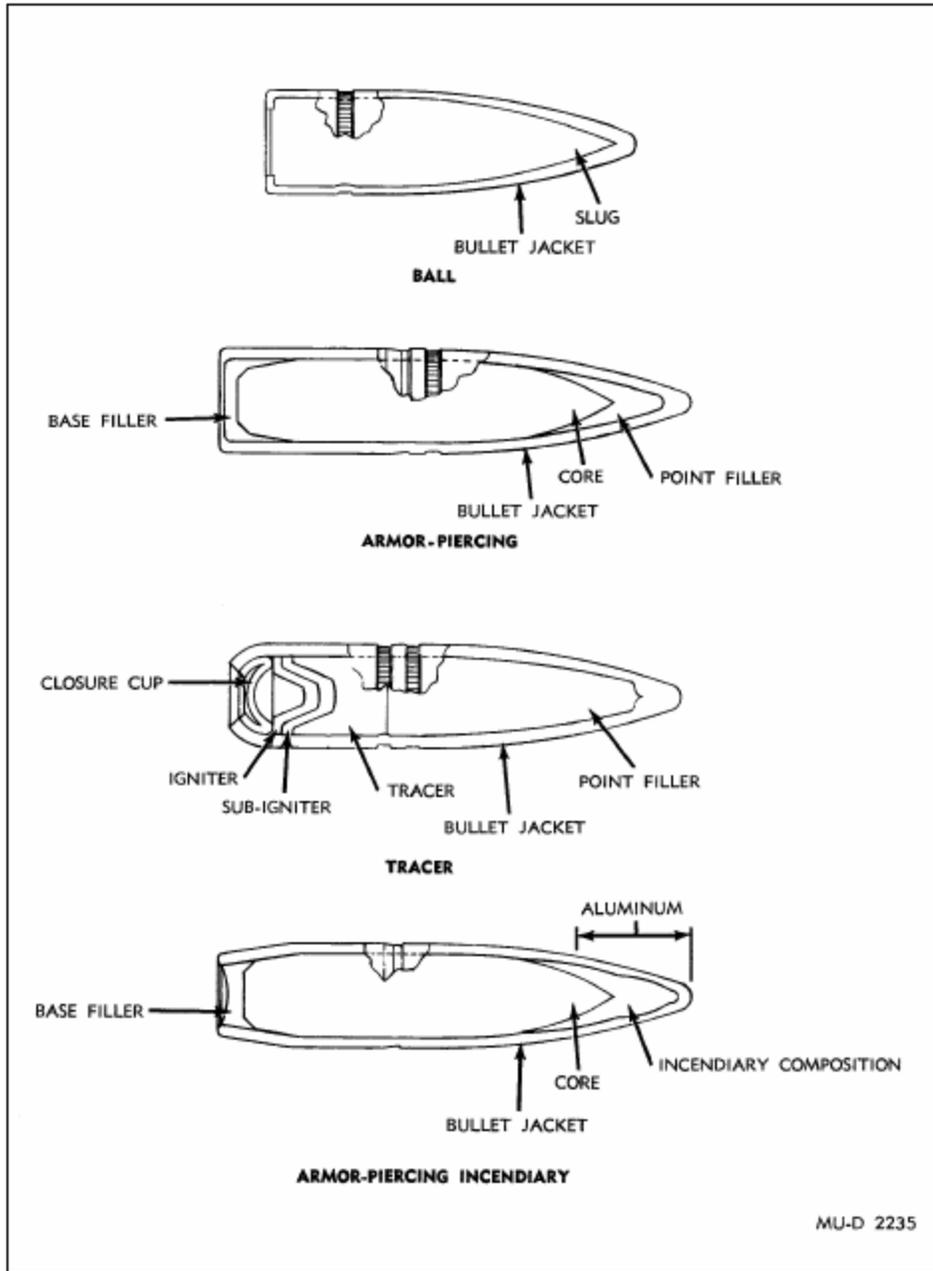


Figure 4. Caliber .30 bullets (sectional)

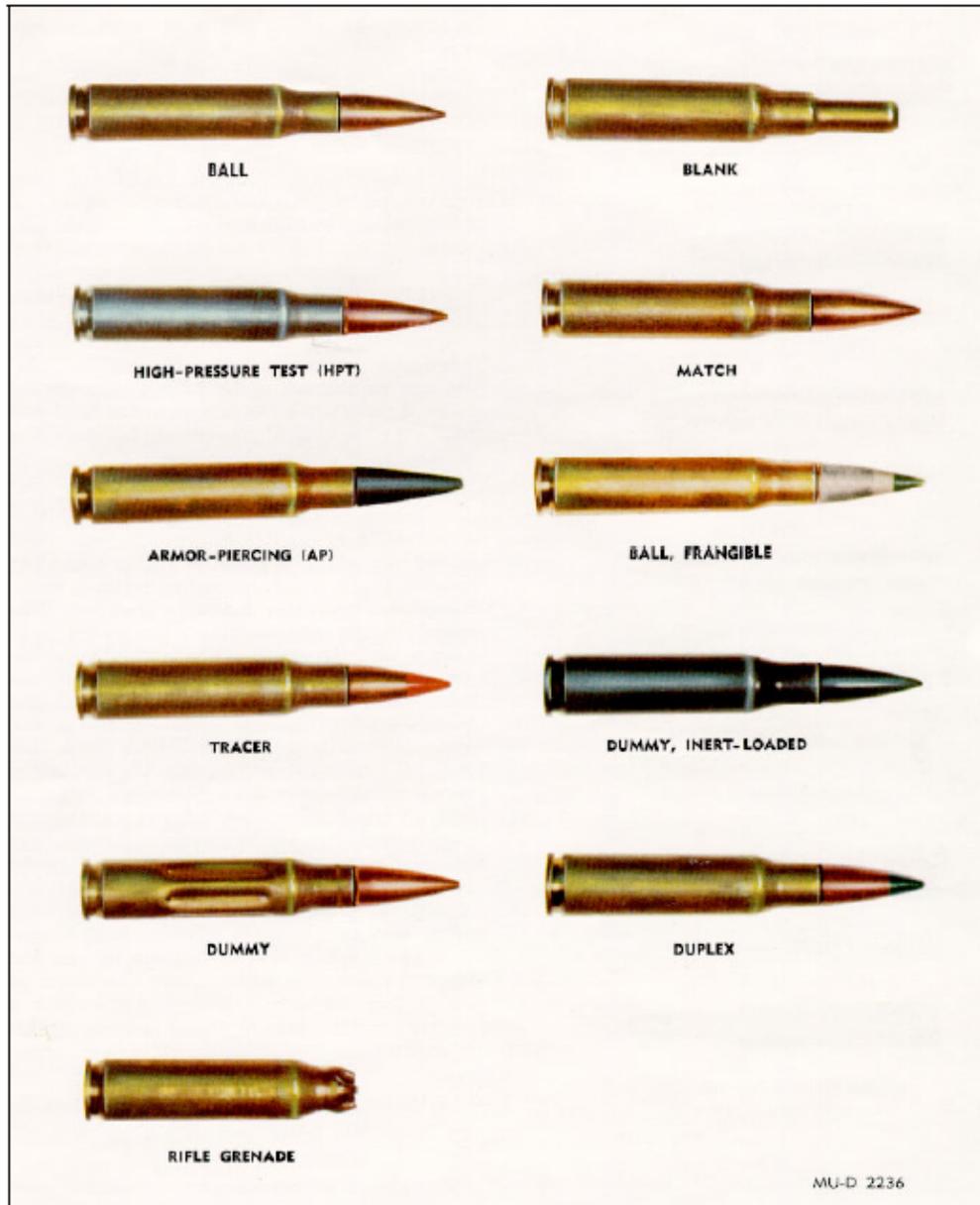


Figure 5. 7.62mm cartridges



Figure 6. 5.56mm cartridges

Propellant. Cartridges are loaded with varying weights of propellant. This is to impart sufficient velocity (within safe pressures) to the projectile to obtain the required ballistic performance. These propellants are either of the single-base (nitrocellulose) or double-base (nitrocellulose and nitroglycerine) type. The propellant grain configuration may be cylindrical with a single, lengthwise perforation, spheroid (ball) or flake. Most propellants are coated with a deterrent (to assist in controlling the rate of combustion) and with a final coating of graphite (to facilitate flow of propellant and eliminate static electricity in loading cartridges).

Primer. Small-arms cartridges contain either a percussion or electric primer. The percussion primer consists of a brass or gilding metal cup that contains a pellet of sensitive explosive material secured by a paper disk and a brass anvil. The electric primer consists of an electrode button in contact with the priming composition, a primer cup assembly and insulator. A blow from the firing pin of the weapon on the center of the percussion primer cup base compresses the primer composition between the cup and the anvil. This causes the composition to explode. The function of the electric primer is accomplished by a firing pin with electrical potential, which contacts the electrode button. This allows current to flow through the energy-sensitive priming composition to the grounded primer cup and cartridge case, exploding the priming composition. Holes or vents in the anvil or closure cup allow the flame to pass through the primer vent in the cartridge case and ignite the propellant. Rimfire ammunition, such as the caliber .22 cartridge, does not contain a primer assembly. Instead, the primer composition is spun into the rim of the cartridge case and the propellant is in intimate contact with the composition. On firing, the firing pin strikes the rim of the cartridge case, compressing the primer composition and initiating its explosion.

Bullet. With few exceptions, bullets through caliber .50 are assemblies of a jacket and a lead or steel core. They may contain other components or chemicals which provide the terminal ballistic characteristics of the bullet type. The bullet jacket may be either gliding metal, gliding-metal clad steel, or copper plated steel. Caliber .30 and 7.62mm frangible bullets are molded of powdered lead and a friable plastic which pulverizes into dust upon impact with the target. The pellets used in the shotgun shells are spheres of lead alloys varying from 0.08 inch to 0.33 inch in diameter.

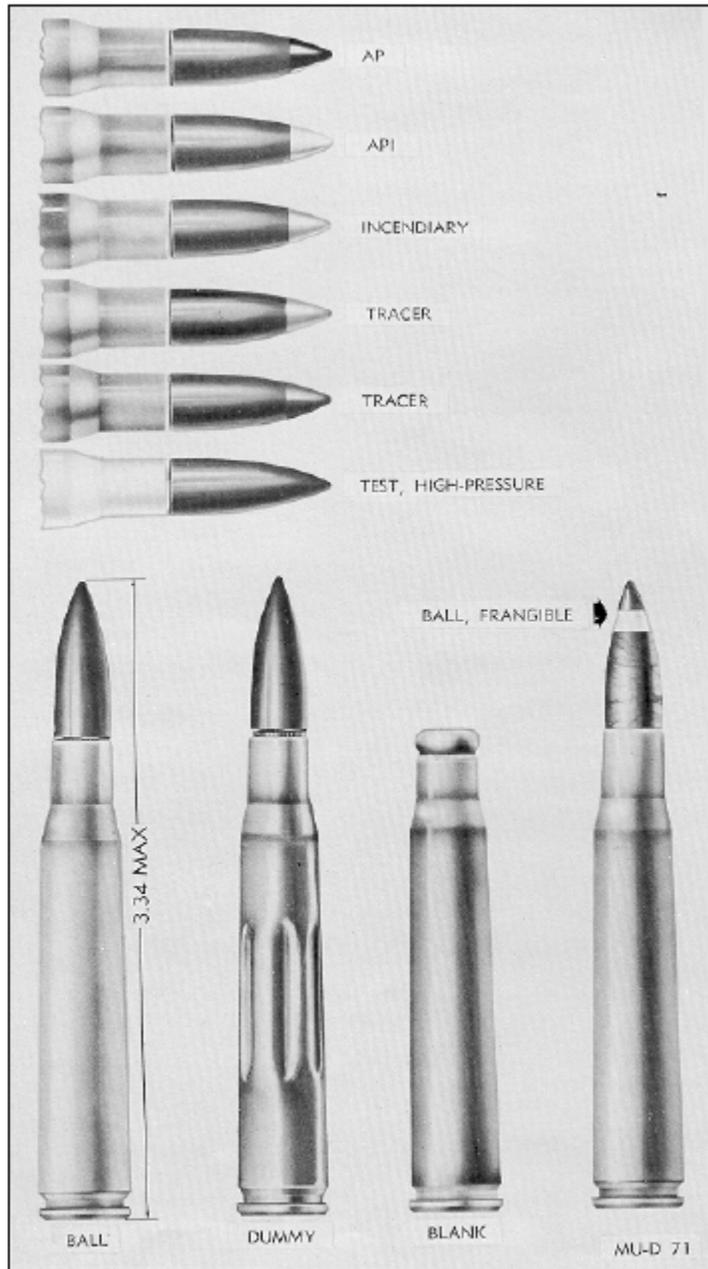


Figure 7. Caliber .30 cartridges

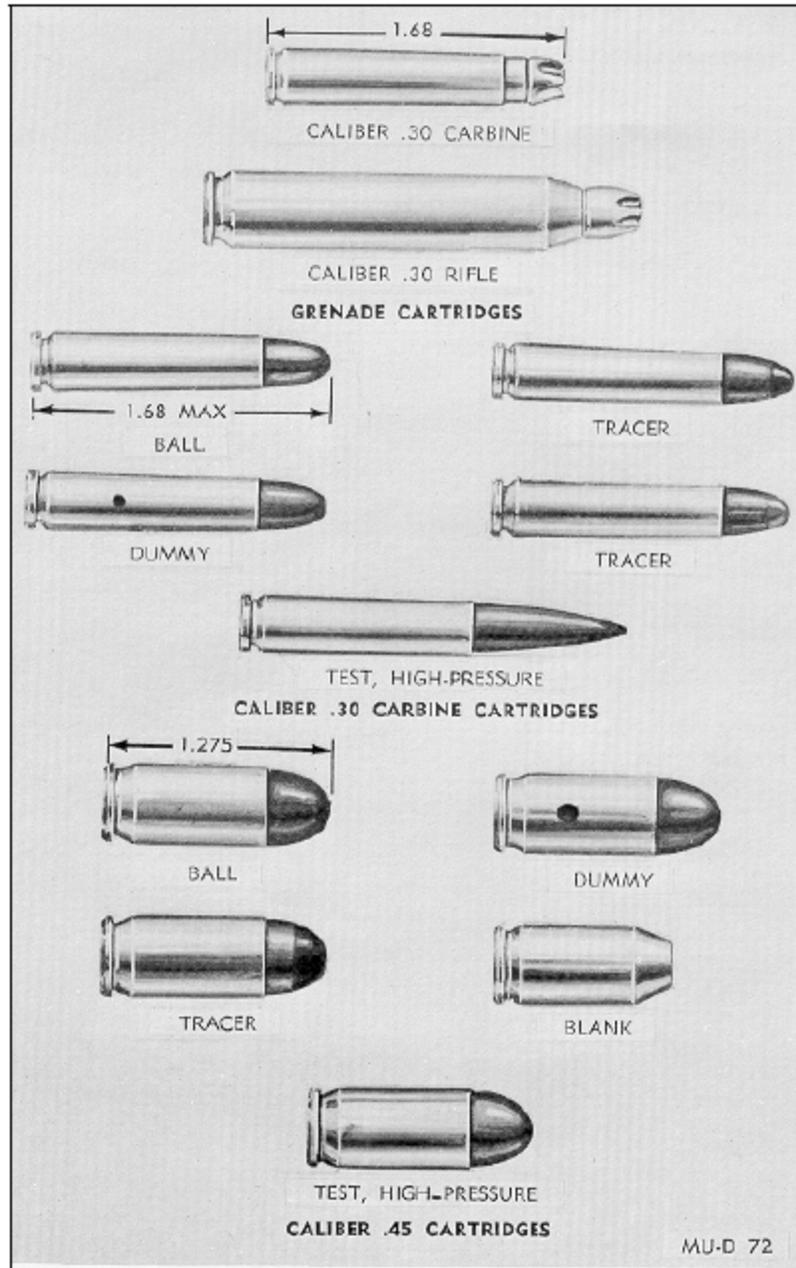


Figure 8. Caliber .30 carbine and caliber .45 cartridges



Figure 9. Caliber .50 cartridges

Ball Cartridge. The ball cartridge is intended for use in rifles, carbines, pistols, revolvers and/or machineguns against personnel and unarmored targets. The bullet, as designed for general purpose combat and training requirements, normally consists of a metal jacket and a lead slug. Caliber .50 ball bullet and 7.62-mm, Ball M59 bullet contain soft steel cores.

Tracer Cartridge. By means of a trail of flame and smoke, the tracer cartridge is intended to permit visible observation of the bullet's in-flight path or trajectory and the point of impact. It is used primarily to observe the line of fire. It may also be used to pinpoint enemy targets to ignite flammable materials and for signaling purposes. The tracer element consists of a compressed, flammable, pyrotechnic composition in the base of the bullet. This composition is ignited by the propellant when the cartridge is fired. In flight, the bullet emits a bright flame which is visible to the gunner. Trace burnout occurs at a range between 400 and 1,600 yards, depending upon the caliber of ammunition.

Match Cartridge. The match cartridge is used in National and International Match Shooting competitions. The bullet consists of a gliding-metal jacket over a lead slug. The cartridges are identified on the head face with the designation NM (National Match) or Match.

Armor-Piercing Cartridges. The armor-piercing cartridge is intended for use in machine-guns or rifles against personnel and light armored and unarmored targets, concrete shelters, and similar bullet-resisting targets. The bullet consists of a metal jacket and a hardened steel-alloy core. In addition, it may have a base filler and/or a point filler of lead.

Armor-Piercing-Incendiary Cartridge. The armor-piercing-incendiary cartridge is used in rifles or machineguns as a single combination cartridge in lieu of separate armor-piercing and incendiary cartridges. The bullet is similar to the armor-piercing bullet, except that the point filler is incendiary mixture instead of lead. Upon impact with the target, the incendiary mixture burst into flame and ignites flammable material.

Armor-Piercing-Incendiary Tracer Cartridge. The bullet of the armor-piercing- incendiary-tracer cartridge combines the features of the armor-piercing, incendiary, and tracer bullets and may be used to replace those cartridges. The bullet consists of a hard steel core with compressed pyrotechnic mixture in the cavity in the base of the core. The core is covered by a gilding-metal jacket with incendiary mixture between the core point and jacket. This cartridge is for use in caliber .50 weapons only.

Duplex Cartridge. The duplex cartridge contains two special ball type bullets in tandem. The front bullet is positioned partially in the case neck, similarly to a standard ball bullet. The rear bullet, positioned completely within the case, is held in position by a compressed propellant charge. The base of the rear bullet is angled so that in flight, it follows a path slightly dispersed from that of the front bullet.

Spotter-Tracer Cartridge. The spotter-tracer cartridge is intended for use in coaxially mounted caliber .50 spotting rifles. The bullet trajectory closely approximates that of

106mm projectiles. Thus, this cartridge serves as a fire control device to verify weapon sight settings before firing 106mm weapons. The bullet contains an impact detonator and incendiary composition which identify the point of impact by flash and smoke.

Blank Cartridge. The blank cartridge is distinguished by absence of a bullet. It is used for simulated fire, in training maneuvers, and for saluting purposes. It is fired in rifles and machineguns equipped with blank firing attachments.

Grenade Cartridge. The grenade cartridge is used to propel rifle grenades and ground signals from launchers attached to rifles or carbines. All rifle grenade cartridges are distinguished by the rose petal (rosette crimp) closure of the case mouth.

Frangible Cartridge. The caliber .30 frangible cartridge, designed for aerial target training purposes, is also used in rifles and machineguns for target shooting. Caliber .30 and 7.62mm frangible cartridges are used in tank machineguns, firing single shot, for training in tank gunnery. At its normal velocity, the bullet, which is composed of powdered lead and friable plastic, will completely disintegrate upon striking a 3/16-inch aluminum alloy plate at 100 yards from the muzzle of the gun. These cartridges are not to be used on any but well ventilated indoor ranges to preclude buildup of toxic bullet dust. Inhalation of bullet dust may be injurious to health.

Incendiary Cartridge. The incendiary cartridge was designed for aircraft and ground weapon use to ignite combustible targets (e.g., vehicular and aircraft fuel tanks). The bullet contains a compressed incendiary mixture which ignites upon impact with the target. The incendiary cartridge has been superseded by the API and APIT cartridges because of their improved terminal ballistic effects.

Special Purpose Cartridge

Cartridges of various calibers. (figures. 10 through 12), which consist of different types of projectiles and bullets, are used for training and special purposes. They include the following:

- (1) Caliber .22 long rifle and caliber .38 and .45 wad-cutter cartridge for target shooting.
- (2) Caliber .45 blank cartridges fired in exercises to condition dogs to gun fire.
- (3) Caliber .22 hornet and .410 shotgun cartridges for firing in Air Force combination (survival) weapons for hunting purposes.
- (4) Caliber .45 line-throwing cartridges for firing in caliber .45 line-throwing rifles. The Navy uses these for throwing lines from ship-to-ship. The Army Signal Corps uses these for projecting signal wires over elevated terrain.

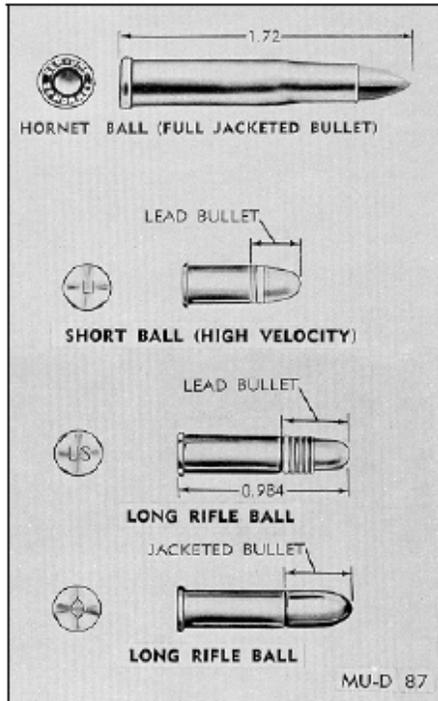


Figure 10. Caliber .22 cartridges

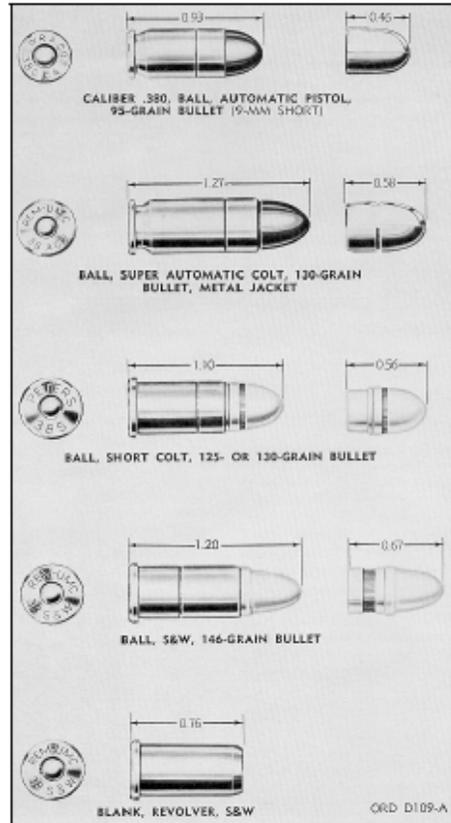


Figure 11. Caliber .38 cartridges

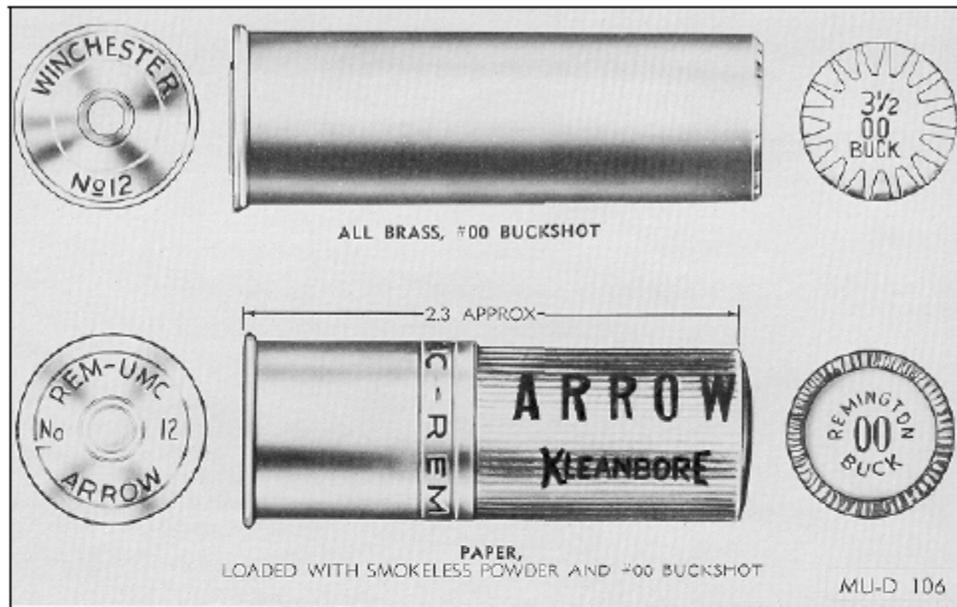


Figure 12. 12 gage shotgun shells

(5) Shotshells containing the designated shot sizes as required for the following:

- 12 gage #00 Buck for guard duty
- 12 gage #4 Buck for guerrilla purposes.
- 12 gage #6, 7½ and 8 shot for clay target shooting for training purposes.
- .410 gage #7 shot for caliber .22/.410 survival weapons maintained by aircraft

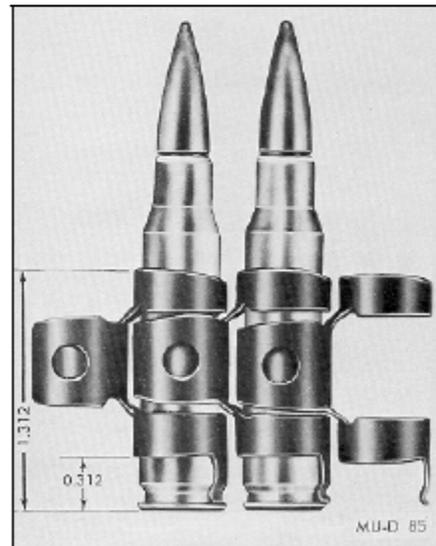


Figure 13. Linked 7.62-mm cartridges

Special purpose cartridges also include the following types of military cartridges:

(1) *Dummy*. The dummy cartridge is used for practice in loading weapons and simulated firing to detect flinching of personnel when firing weapons. It consists of a cartridge case and a ball bullet. Cartridge identification is by means of holes through the side of the case or longitudinal corrugations in the case and by the empty primer pocket.

(2) *Dummy inert-loaded*. This cartridge consists of a cartridge case, a ball bullet and inert granular material in the case simulating the weight and balance of a live cartridge. The exterior of the cartridge is identified by a black chemical finish and by the absence of a primer. This cartridge is used by installations for testing weapon function, linkage and feed chutes.

(3) *High-pressure test*. High-pressure test ammunition is specially loaded to produce pressures substantially in excess of the maximum average or individual pressures of the corresponding service cartridge. This cartridge is not for field issue. It is used only by armorers and weapons mechanics for proof firing of weapons (rifles, pistols, machine guns) at place of manufacture, test and repair. Because of excessive pressures developed by this type of ammunition, and the potential danger involved in firing, proofing of weapons is conducted only by authorized personnel from fixed and shielded rests by means of a lanyard or other remote control methods.

Metallic Links and Clip

Metallic links. (figures. 13 and 14) are used with caliber .30, caliber .50, 5.56mm, 7.62mm and 20mm cartridges in machine guns. The links are made of steel, surface treated for rust prevention. They are used to assemble cartridges into linked belts of 100 to 750 cartridges per belt. The links must meet specific test and dimension requirements to assure satisfactory ammunition feed and functioning in the machine gun under all training and combat service conditions.

Different configurations of cartridge clips. These permit unitized packages of ammunition. This facilitates transfer of cartridges to appropriate magazines for caliber .30, 7.62mm and 5.56mm rifles. The caliber .30 eight-round clip feeds eight cartridges as a unit into the receiver of the rifle. The caliber .45 clip feeds three cartridges as a unit into the revolver cylinder. Five-round and eight-round clips are used with caliber .30 cartridges; five-round clips with 7.62mm cartridges; ten-round clips with caliber .30 carbine and 5.56-mm cartridges; and three-round clips with caliber .45 cartridges.

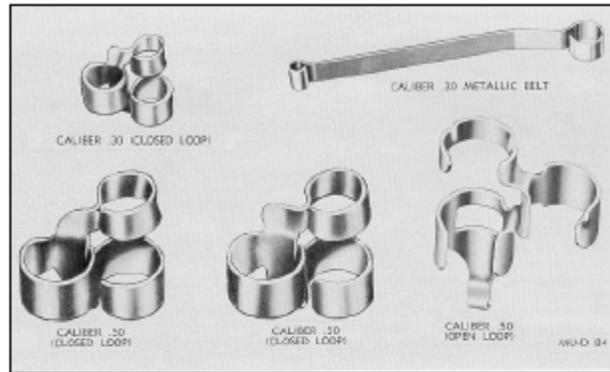


Figure 14. Links for caliber .30 and caliber .50 ammunition

Identification Markings. Each outer shipping container and all inner containers are fully marked to identify the ammunition. Wire-bound boxes are marked in black and ammunition boxes are painted olive drab, with markings in yellow. When linked ammunition is functionally packed, component lot numbers are replaced by a functional lot number. Typical packing and identification markings are illustrated in figures 15 through 17.

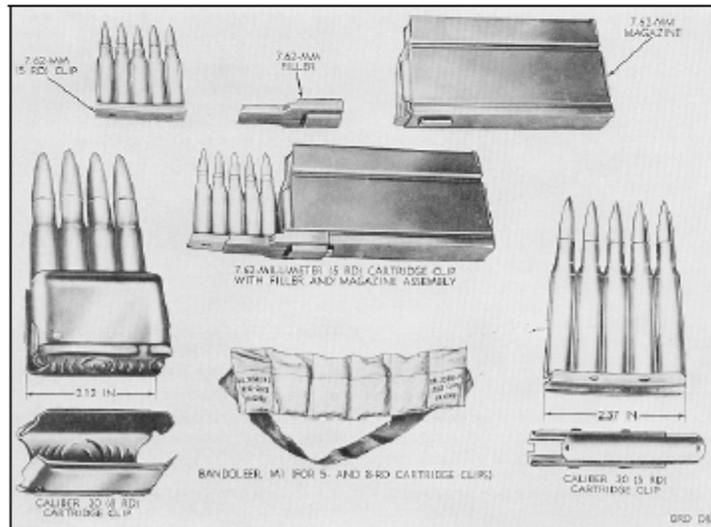


Figure 15. Cartridges, links, belt, cartons, bandoleers and ammunition box

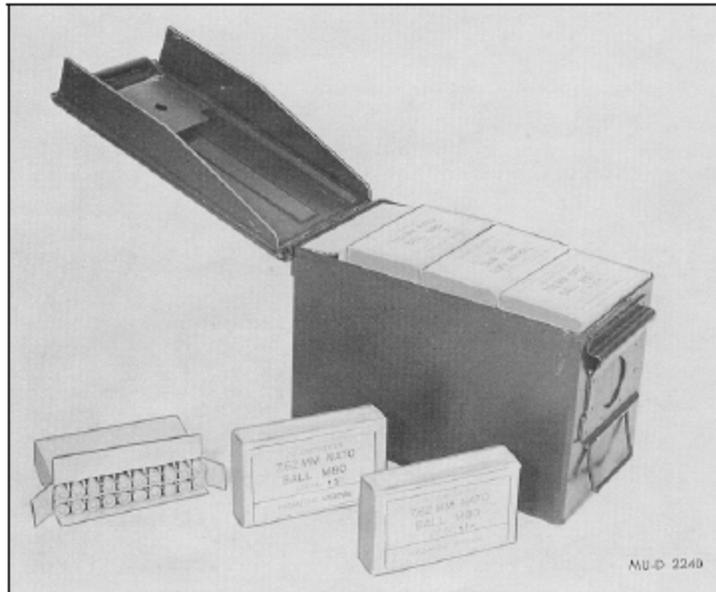


Figure 16. Cartridges, link belt, cartons, bandoleers and ammunition box

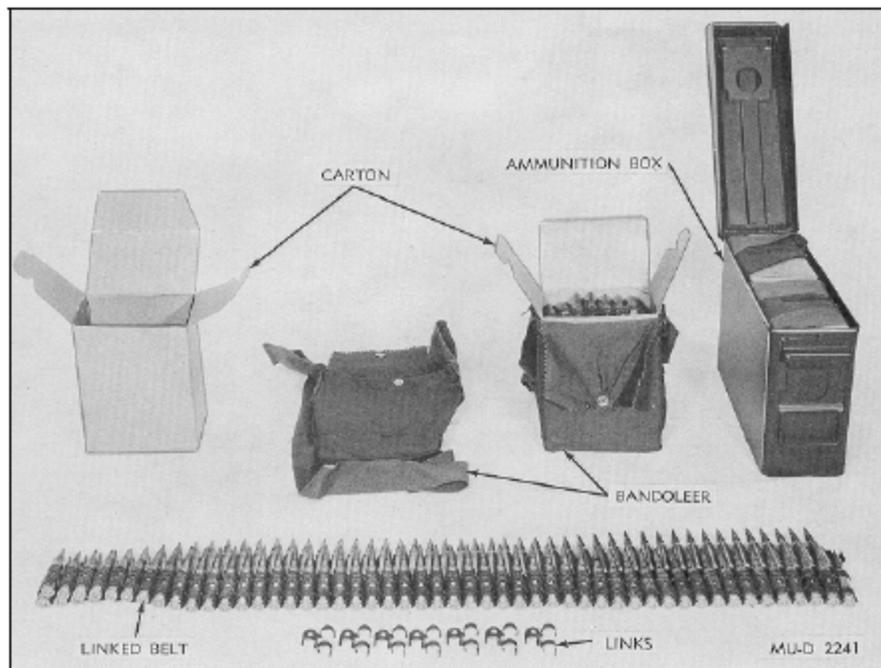


Figure 17. Cartridges, link belt, cartons, bandoleers and ammunition box

Care, Handling and Preservation

Small-arms ammunition is comparatively safe to handle. It is packed to withstand transportation, handling and storage conditions normally encountered in the field. However, consideration should be given to general handling precautions pertaining to ammunition and explosives.

Reference: This data is a reprint of Chapter 3, TM 9-1300-200, *Ammunition General*, October 1969

APPENDIX E—SITE SPECIFIC ACCIDENT PREVENTION PLAN

Site Specific Accident Prevention Plan

The purpose of this appendix is to augment the programmatic Accident Prevention Plan (APP), Appendix D of the PWP (Alion 2005) by presenting site-specific information and any procedural deviations. The Programmatic APP will accompany this SS-WP during field activity.

SITE-SPECIFIC Accident Prevention Plan

Client: U.S. Army Corps of Engineers Baltimore

Project Name/Number: Site Inspection of Montauk Naval Sub Base

Site Location/Address: Montauk Naval Sub Base, Montauk, Suffolk County, New York (See Figure 1a – General Installation Site Map, Appendix A)

Work Description: Site Inspection of this Formally Used Defense Site (FUDS) will include site reconnaissance, limited geophysical surveys and soil sampling.

APPROVALS:

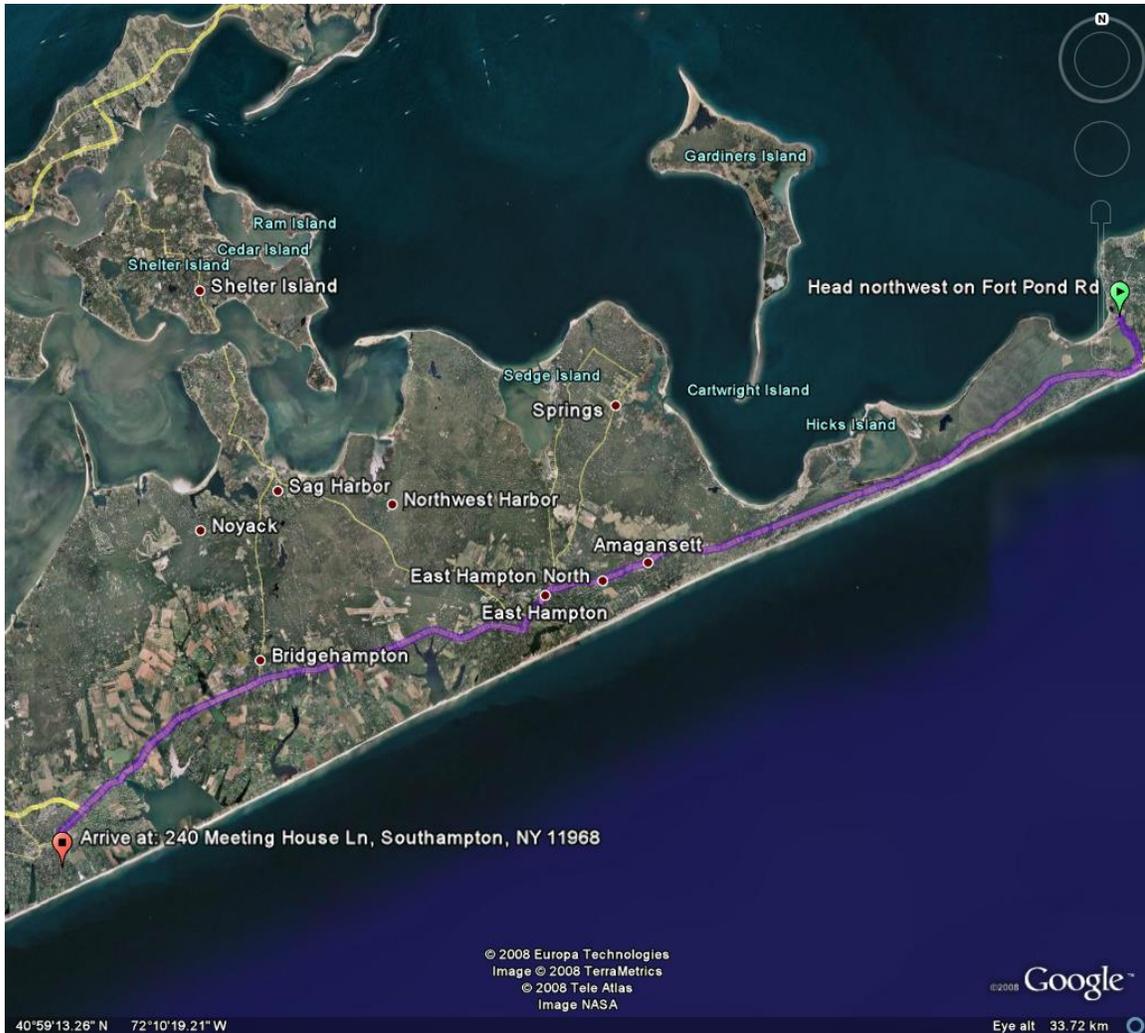
This Addendum to the project Work Plan and APP has been prepared under the supervision and review of a CIH certified by the American Board of Industrial Hygiene (ABIH).

Program Safety and Health Officer: _____
Todd Nance, CIH (ABIH No. 7541CP)

Date

Project Manager: _____
Corrine Shia

Date



Hospital Name: Southampton Hospital

Hospital Phone: (631) 726-8200

Hospital Address: 240 Meetinghouse Lane, Southampton, NsdfdfY

In Case of Emergency Contact: Call 911 for first responder. Arrangements will be made for faster transport to the hospital if necessary (i.e., helicopter).

Route to Hospital (B) (from Rough Riders Condominiums (A)):

- 1. Head southeast on Fort Pond Rd (66 ft)**
- 2. Turn left toward Edgemere St (128 ft)**
- 3. Turn right at Edgemere St (1.1 mi)**
- 4. Turn right at The Plaza (420 ft)**
- 5. Turn right at Montauk Hwy/RT-27**

Continue to follow RT-27 (25.4 mi) to the light at the intersection at Hampton Road (just past the Princess Diner). Go straight at that light rather than following the highway, which veers to the right.

- 6. Continue on Hampton Rd/Montauk Hwy to the blue hospital “H” sign at Old Town Road (0.7 mi)**
- 7. Turn left at Old Town Rd – 2 blocks (0.4 mi)**
- 8. Turn right at Meetinghouse Ln (482 ft)**

TABLE E-1. EMERGENCY CONTACT INFORMATION:

Contacts	Name	Phone Number(s) work/cell
Program Manager	Roger Azar	Cell: 301-399-7304
Deputy Program Manager	Corinne Shia	703-259-5147 Cell: 703-217-3810
Project Manager	Rick Swahn	703-259-5286
Program Safety and Health Officer	Curtis Mitchell	Cell: 301-399-7152
Task Manager	Benjamin Claus	703-259-5264 Cell: 202-309-8448
Site Safety and Health Officer (SSHO)	Curtis Mitchell	Cell: 301-399-7152
Client Contact	Julie Kaiser – Baltimore District	410-962-4006
	Richard Gajdek – New York District	917-790-8234
	Alan Warminski – Baltimore District	410-962-2179
	Paul Greene	410-322-2745
Regulatory Contact (NYSDEC)	Chek Ng	518-402-9620
Property Owner/Manager	Gatis Mastins – Rough Riders Condo. Association	631-668-3650
Hospital	Southampton Hospital, Southampton, NY	631-726-8200
Poison Control		800-222-1222
National Response Center		800-424-8802
Alion/HFA Medical Services	Bill Beckett	Business 1: 908-852-0733 Business 2: 919-405-3145 Cell: 908-619-0259

HAZARDS OF CONCERN: Check as many as are applicable. See Section 6 of Programmatic APP (Alion 2005) for Chemical, Physical and Biological Hazards.

- Heat Stress Reactive Oxygen Deficient Insect Bite
 Cold Stress Noise Corrosive Snake Bite
 Explosion/Flammable Inorganic Toxic Excavations
 Biological Organic Inert Vegetation
 Radiological Confined Space (see Section 9 of Programmatic APP)
 Volatile Other, specify: Potential MEC. Site workers will practice MEC

avoidance. Any suspected MEC will be left alone. A MEC avoidance team (provided by Alion/HFA) will identify routes free of anomalies to a sampling area. The MEC team will also ascertain that sample locations are free of anomalies. Once the MEC team has identified that a sampling area is free of anomalies, the MC sampling team will then collect samples for analysis. Soil samples will be collected from areas identified by CSM or the MEC survey to be suspect or contain high concentrations of MEC and/or MC. Activity Hazard Analysis tables have been completed for the proposed field work (to include Site Inspection and Reconnaissance and general sample collection) and are included at the end of this chapter. Care should be taken while in or near surface water bodies or while boating. Approved flotation devices will be worn at all times when within the boat. Additionally, the boat will have the capacity to safely carry the 3 member Alion field team.

PATHWAYS:

- Air Dust/Soil Surface Water Sediment Groundwater Other

OVERALL HAZARD EVALUATION: High Medium Low Unknown

JUSTIFICATION (brief narrative of how work activities may encounter hazards and their controls, include known or anticipated contaminant concentrations):

Site workers may be exposed to chemicals of concern (metals and explosives) present in site soil during sampling activities. Site sampling will occur in wooded/overgrown areas that may contain biting insects and/or poisonous plants.

FIRE/EXPLOSION POTENTIAL: High Medium Low Unknown

SURROUNDING POPULATION: Residential Industrial Rural Urban

ANTICIPATED LEVEL OF CHEMICAL EXPOSURE:

Low levels.

() Face Shield: _____ Gloves: () Not needed
() Goggles: _____ () Undergloves: _____
() Hard Hat: _____ **(X) Gloves: Nitrile, during sampling**
_____ () Overgloves: _____
() Hearing Protection: _____ () Other: Specify below

Boots: () Not Needed
Boots: **Work Boots, Steel toe boots required during Geophysical Surveying and soil sampling** Overboots: _____

Contingency

TASKS: **NONE**

LEVEL: A - B - (C) - D - Modified (Circle applicable)

UPGRADE CRITERIA: **Personal Protective Equipment (PPE) Upgrade not permitted under this /APP**

Respiratory: **(X) Not needed**
() SCBA, Airline: _____
() APR: _____
() Cartridge: _____
() Escape Mask: _____
() Other: _____

Head and Eye: **(X) Not needed**
() Safety Glasses: _____
() Face Shield: _____
() Goggles: _____
() Hard Hat: _____
_____ () Hearing Protection: _____

Boots: () Not Needed
Boots: _____

Protective Clothing: **(X) Not Needed**
() Encapsulating Suit: _____
() Splash Suit: _____
() Apron: _____
() Tyvek Coverall
() Saranex Coverall
() Coverall: _____
() Other: _____

Gloves: **(X) Not needed**
() Undergloves: _____
() Gloves: _____
() Overgloves: _____
() Other: Specify below

Overboots: _____

MONITORING EQUIPMENT: Monitoring equipment should be specified by task and type of site. Indicate type, as necessary. Attach additional sheets, as necessary.

TASKS: NONE

See APP for Calibration Procedures or attach if different. See 8-1 from the Programmatic APP (Alion 2005) for specific monitoring requirements and action levels.

INSTRUMENT

ACTION GUIDELINES

Combustible Gas Indicator
(X) Not needed

0-10% LEL Continue.
10-20% LEL Potential explosion hazard, continuous monitoring.
>20% LEL Explosion hazard; interrupt task/evacuate.

Oxygen (O₂) Percentage:

20.8% - O₂ normal.
<20.8% - O₂ deficient, investigate cause.
<19.5% O₂ Interrupt task/evacuate.

Type _____

Photoionization Detector Specify
() 11.7 ev () 10.2 ev () 09.8 ev () __ ev

Type: Photovac or MiniRAE (circle applicable or list other):

(X) Not needed

Flame Ionization Detector Specify:

Type Photovac or Organic Vapor Analyzer (OVA) (circle applicable or list other):

(X) Not needed

Detector Tubes Monitor Specify: (Chemical, Range) COMMENTS (Interferences)
Type _____

(X) Not needed

Dust Monitor Specify:
Type _____

(X) Not needed

Radiation Survey Meter

	> Background	Contact Radiation Safety Officer (RSO)/SSHO and PM
	3 x Background	Notify CIH and stop work
	2.5mrem/hr	Interrupt task/evacuate
(X) Not needed	Note: Annual Exposure not to exceed 100 mrem/yr or 50 urem/hr average	
Other	Specify:	

DECONTAMINATION PROCEDURES:

Summarize personnel decontamination/containment and disposal method

() Not needed

Nitrile Gloves will be disposed of after sampling as general refuse.

Summarize equipment decontamination/containment and disposal method

() Not needed

Sampling equipment will be dedicated and disposed of following sample collection as general refuse following sample collection.

Summarize heavy equipment decontamination/containment and disposal method

(X) Not needed

**TABLE E-2 SITE INSPECTION SAMPLING (SOIL SEDIMENT AND GROUNDWATER)
ACTIVITY HAZARD ANALYSIS**

PRINCIPLE STEP	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
All Activities Related to soil sampling	Slips, Trips, Falls	Keep work area free of excess material and debris.
		Remove all trip hazards by keeping materials/objects organized and out of walkways.
		Be aware of uneven surfaces while walking around sampling locations.
		Keep work surfaces dry when possible.
		Wear appropriate PPE including non-slip rubber boots if working on wet or slick surfaces.
		Stay aware of footing and do not run.
	Heat/Cold Stress	Take breaks as needed.
		Be aware of weather conditions and dress appropriately.
		Consume adequate food/beverages.
		If possible, adjust work schedule to avoid heat/cold stresses.
	Biological Hazards: Insects, Snakes, Wildlife, Vegetation	Inspect work areas when arriving at a sampling site to identify hazard(s).
		Use insect repellent as necessary.
		Stay alert and safe distance away from biological hazards.
		Wear appropriate PPE including work gloves, long sleeves and pants, and snake chaps if probability of encountering snakes, ticks, poison ivy or oak.
		Workers with allergies should carry antidote kits, if necessary.
	Traffic (including pedestrian)	Notify attendant and/or site owner/manager of work activities and location.
		Set up exclusion zone surrounding work area.
		Wear appropriate PPE including high visibility clothing such as reflective vest if in high traffic areas.
		Inspect area behind vehicle prior to backing and use spotter.
	Fire/Explosion	Ensure type ABC, fully charged fire extinguisher on-site.
		Stop work if hazardous conditions are identified.
	Physical Hazard (Electrical)	Identify electrical utility hazards prior to sampling.
		Inspect work areas for spark sources, maintain safe distances, properly illuminate work areas, and provide barriers to prevent inadvertent contact.
		Maintain minimum clearance distances for overhead energized electrical lines as specified in the GHASP.
	Physical Hazards (Weather)	Monitor radio for up-to-date severe weather forecasts.
		Discontinue work during thunderstorms and severe weather events.
	MEC Hazards	Follow established MEC avoidance protocols when performing intrusive sampling activities. If MEC is discovered or suspected, use existing access roads to retract from the MEC after completion of sample collection activities.

	Chemical Hazards (including MEC)	Perform environmental monitoring as required in SSHASP. Where appropriate PPE (including nitrile gloves) as indicated in the SSHASP.	
	Biological Hazards (Blood borne pathogens)	Wear proper PPE (including nitrile gloves) and a face shield or goggles when sampling sludge or sediments (if appropriate). Wash with soap and water as soon as PPE is removed or when contact or exposure has occurred.	
	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS	EQUIPMENT TO BE USED
<ul style="list-style-type: none"> • Vehicle • hand tools 	<ul style="list-style-type: none"> • Inspect PPE prior to each use • Inspect vehicle daily • Use appropriate PPE • Underground hazards require clearance prior to execution • Work area upon arrival on site • Inspect emergency equipment/supplies daily (first aid kit, eye wash, fire extinguisher) 	<ul style="list-style-type: none"> • Use and limitations of PPE • AHA-review • SSHP-review • Valid driver's license • Use and limitations of PPE • Operator will be trained in equipment used • Lifting • AHA-review • SSHP-review • First aid/CPR—at least 2 people on site • Hazardous waste sites require 8-hour annual refresher and supervisor training 	

TABLE E-3 SITE INSPECTION AND RECONNAISSANCE ACTIVITY HAZARD ANALYSIS		
PRINCIPLE STEP	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
Driving to site and between site sampling / reconnaissance locations.	Automobile accidents/personal injury	Follow posted speed limits and obey traffic/roadway signs.
		Always wear your seat belt when driving. In some states it may be the law.
		Follow the "Rules of the Road" including: use your turn signals, use the 2-second rule ¹ when following behind a vehicle, and allow vehicles the right of way when they are turning or entering intersections in front of you.
		Review/make yourself familiar with maps and driving directions before beginning the drive to the Site. Do not attempt to drive and review maps/directions at the same time. Pull over and stop your vehicle before looking at maps/directions.
		Do not perform reconnaissance or inspections while driving. Your vehicle should be parked in a safe location when viewing or surveying the Site and vicinity.
		Avoid sudden turns and stops, don't drive recklessly.
		In inclement weather, drive as road conditions allow but at least 5-10 mph below the posted speed limit.
		If feeling drowsy or sleepy do not drive. Below ² are warning signs of drowsiness or fatigue. Pull over in a safe place if you experience any of these signs to rest.
		Never operate a vehicle under the influence of alcohol or illegal substances
		Keep your eyes on the road.
All Activities Related to Site Inspection and Reconnaissance	Slips, Trips, Falls	Keep work area free of excess material and debris.
		Remove all trip hazards by keeping materials/objects organized and out of walkways.
		Be aware of uneven surfaces while walking or getting in and out of the vehicle.
		Keep work surfaces dry when possible.
		Wear appropriate PPE including non-slip rubber boots if working on wet or slick surfaces.
		Install rough work surface covers where possible.
		Stay aware of footing and do not run.
	Heat/Cold Stress	Take breaks as needed.
		Be aware of weather conditions and dress appropriately.
		Consume adequate food/beverages.
	Biological Hazards: Insects, Snakes, Wildlife, Vegetation	If possible, adjust work schedule to avoid heat/cold stresses.
		Inspect work areas when arrive at site to identify hazard(s).
		Use insect repellent as necessary.
		Stay alert and safe distance away from biological hazards.

TABLE E-3 SITE INSPECTION AND RECONNAISSANCE ACTIVITY HAZARD ANALYSIS		
PRINCIPLE STEP	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
		Wear appropriate PPE including work gloves, long sleeves and pants, and snake chaps if probability of encountering snakes, ticks, poison ivy or oak.
		Workers with allergies should carry antidote kits, if necessary.
	Traffic (including pedestrian)	Notify attendant and/or site owner/manager of work activities and location.
		Utilize cones, signs, flags and/or other traffic control devices as outlined in the Traffic Control Plan.
		Set up exclusion zone surrounding work area.
		Wear appropriate PPE including high visibility clothing such as reflective vest.
		Inspect area behind vehicle prior to backing and use spotter.
	Fire/Explosion	Ensure type ABC, fully charged fire extinguisher on-site.
		Stop work if hazardous conditions are identified.
	Physical Hazard (Electrical)	Identify electrical utility hazards prior to reconnaissance if possible.
		Inspect work areas for spark sources, maintain safe distances, properly illuminate work areas, and provide barriers to prevent inadvertent contact.
		Maintain minimum clearance distances for overhead energized electrical lines as specified in the GHASP.
	Physical Hazards (Weather)	Monitor radio for up-to-date severe weather forecasts.
Discontinue work during thunderstorms and severe weather events.		
MEC Hazards	Follow established MEC avoidance protocols when performing site reconnaissance activities. If MEC is discovered or suspected, use existing access roads to retract from the area containing MEC after documenting coordinates and collecting samples (if appropriate).	
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<ul style="list-style-type: none"> Vehicle 	<ul style="list-style-type: none"> Inspect PPE prior to each use Inspect vehicle daily 	<ul style="list-style-type: none"> AHA-review SSHP-review Valid driver's license Use and limitations of PPE First aid/CPR—at least 2 people on site Hazardous waste sites require 8-hour annual refresher and supervisor training

1. "Two second rule" works by the driver choosing an object along the road in front of them. As the vehicle in front of them passes it, count aloud, slowly, "one thousand one, one thousand two." If you reach the object before you finish counting, you are following too closely. Allow the other vehicle to get further ahead. In bad weather, increase the count to three or four seconds for extra space.

TABLE E-3 SITE INSPECTION AND RECONNAISSANCE ACTIVITY HAZARD ANALYSIS		
PRINCIPLE STEP	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS

2. Warning signs of drowsiness or

fatigue:

- can't remember the last few miles driven
- have wandering or disconnected thoughts
- experience difficulty focusing or keeping your eyes open
- have trouble keeping your head up
- drift from lanes or hit a rumble strip
- yawn repeatedly
- tailgate or miss traffic signs
- find yourself jerking your vehicle back into lane

If you find yourself experiencing the above, you may be suffering from drowsiness or fatigue. Continuing to drive in this condition puts you at serious risk of being involved in a fatigue-related crash. You should pull over in a safe place and get some rest before resuming your trip.

TABLE E-4 BOATING ACTIVITY HAZARD ANALYSIS

Task	Potential Hazards	Hazard Control Measures
MOBILIZATION / DEMOBILIZATION	Physical Hazards (slips, trips, fall, cuts, etc.)	<ul style="list-style-type: none"> • Clear walkways, work areas of equipment, tools, debris. • Watch for accumulation of water work surfaces. • Mark, identify, or barricade obstructions. • Wear cut-resistant work gloves when the possibility of lacerations or other injury caused by sharp or protruding objects occurs.
	Physical Hazards (Material Handling, Moving, Lifting)	<ul style="list-style-type: none"> • Observe proper lifting techniques. • Obey sensible lifting limits (60 lb maximum per person manual lifting). • Use mechanical lifting equipment (hand carts, trucks, etc.) to move large awkward loads. • Use two or more persons for heavy bulk lifting.
	Physical Hazards (Vehicle and Pedestrian Traffic)	<ul style="list-style-type: none"> • Use orange traffic cones where necessary. • Use reflective warning vests if exposed to vehicular traffic. • Locate staging areas in locations with minimal traffic.
	Physical Hazards (Cold Stress /Heat Stress)	<ul style="list-style-type: none"> • Monitor of cold/heat stress as recommended in Section 6 of the GHASP.
	MEC Hazard	<ul style="list-style-type: none"> • Practice site reconnaissance with a trained, experienced MEC specialist capable of recognizing MEC hazards. If MEC is discovered, use existing access roads to retract from the MEC.
	Biological Hazards (insects, poisonous plants, ticks)	<ul style="list-style-type: none"> • Wear protective outer clothing and insect repellent to avoid insect bites and ticks. • Wear long sleeve shirts when working in areas with poison ivy or oak. • Workers with allergies should carry antidote kits, if necessary.
SAMPLING ACTIVITIES	Physical Hazards (slips, trips, fall, cuts, etc.)	<ul style="list-style-type: none"> • Clear walkways, work areas of equipment, tools, debris. • Watch for accumulation of water work surfaces. • Mark, identify, or barricade obstructions. • Wear cut-resistant work gloves when the possibility of lacerations or other injury caused by sharp or protruding objects occurs.

TABLE E-4 BOATING ACTIVITY HAZARD ANALYSIS

Task	Potential Hazards	Hazard Control Measures
	Physical Hazard (Electrical)	<ul style="list-style-type: none"> Identify electrical utility hazards prior to sampling. Inspect work areas for spark sources, maintain safe distances, properly illuminate work areas, and provide barriers to prevent inadvertent contact. Maintain minimum clearance distances for overhead energized electrical lines as specified in the GHASP.
	Physical Hazards (Weather)	<ul style="list-style-type: none"> Monitor radio for up-to-date severe weather forecasts. Discontinue work during thunderstorms and severe weather events.
	Physical Hazard (Vehicle and Pedestrian Traffic)	<ul style="list-style-type: none"> Establish an exclusion zone around the drilling location. Use orange traffic cones (if necessary). Use reflective warning vests if exposed to vehicular traffic. Locate staging areas in locations with minimal traffic.
	Physical Hazards (Cold Stress /Heat Stress)	<ul style="list-style-type: none"> Monitor of cold/heat stress as recommended in Section 6 of the GHASP.
	MEC Hazards	<ul style="list-style-type: none"> Follow established MEC avoidance protocols when performing intrusive sampling activities. If MEC is discovered or suspected, use existing access roads to retract from the MEC.
	Chemical Hazards (including MEC)	<ul style="list-style-type: none"> Perform environmental monitoring as required in SSHASP. Where appropriate PPE as indicated in the SSHASP.
	Biological Hazards (Bloodborne pathogens)	<ul style="list-style-type: none"> Wear proper PPE including nitrile gloves and a face shield or goggles when sampling sludge. Wash with soap and water as soon as PPE is removed or when contact or exposure has occurred.
	Biological Hazards (insects, poisonous plants, ticks)	<ul style="list-style-type: none"> Wear protective outer clothing and insect repellent to avoid insect bites and ticks. Wear long sleeve shirts when working in areas with poison ivy or oak. Workers with allergies should carry antidote kits, if necessary.
BOATING ACTIVITIES	Vessel Operation	<ul style="list-style-type: none"> Field team personnel will operate a rented vessel in accordance with all guidelines outlined in this hazard analysis to ensure safe operation.

TABLE E-4 BOATING ACTIVITY HAZARD ANALYSIS

Task	Potential Hazards	Hazard Control Measures
	Physical Hazards (Weather)	<ul style="list-style-type: none"> • Monitor radio for up-to-date severe weather forecasts. • Discontinue work during thunderstorms and severe weather events.
	Physical Hazard (Slips, Trips, and Falls, including Falls Overboard)	<ul style="list-style-type: none"> • SSHO will inspect the boat prior to operation. The SSHO will ensure the number of PFD's is equal to or greater than the number of passengers on board. • No personnel will embark or disembark the vessel without the direction of the SSHO. SSHO will ensure passengers are wearing PFD's while on deck. At the request of the SSHO, personnel will be seated. • Passengers will stay seated until boat is docked. Ensure three point contact whenever possible or practical • A Type IV throwable device will be readily available onboard.

APPENDIX F—LOGS AND FORMS USED DURING THE SITE INSPECTION

HEALTH AND SAFETY ACTIVITY REPORT

Site: Montauk Naval Sub Base Location: Montauk, Suffolk County, NY

Weather Conditions: _____ Onsite Hours: From _____ To _____

Morning Briefing Topic:

General Activities Complete:

Morning Briefing Attendance: _____

Changes in PPE Levels*

Work Operations

Reasons for Change

Site Safety and Health Plan
Violations

Corrective Action
Specified

Corrective Action
Taken (yes/no)

Observations and Comments:

*Contract W912DY-04-D-0017
Task Order # 00170001*

Alion Science and Technology

Completed by: _____

Date: _____

Site Health and Safety Supervisor

*Only SSHO may change PPE levels, using only criteria specified in Programmatic APP.

Alion Science and Technology, Inc.
DAILY QUALITY CONTROL REPORT

Report Number:		Date:	
Project Name: Montauk Naval Sub Base		Contract Number: W912DY-04-D-0017	
Location of Work:			
Description of Work: Conduct Site Inspection by collecting environmental samples,			
performing reconnaissance, photographing site, etc.			
Weather:	Rainfall:	Temperature: Min.	Max.
1. Work performed today by Alion.			
Reconnaissance Acreage Discussion:			
Samples Collected:			
Field Tests:			
Calibration of Instruments:			
Other:			

2. Work performed today by Subcontractors.
3. Type and results of Control Phases and Inspection. (Indicate whether Preparatory – P, Initial – I, or Follow-Up – F and include satisfactory work completed or deficiencies with actions to be taken)
4. List type and location of tests performed and results of these tests.
5. List material and equipment received.
6. Submittals reviewed. (Include Transmittal No., Item No., Spec/Plan Reference, by whom, and any action.
7. Off-site surveillance activities, including action taken.
8. Job Safety. (Report safety violations observed and actions taken)

9. Remarks. (Instructions received or given. Conflicts in Plans or Specifications)

Alion Science and Technology, Inc's Verification: On behalf of Alion, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

Quality Control System Manager (Sign and
Print Name)

FIELD CALIBRATION FORM - YSI

(pH, CONDUCTIVITY, TURBIDITY)

Site Name: _____

CALIBRATION
DATE:
TIME:
METER ID:

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0		
7.0		

CONDUCTIVITY CALIBRATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU		
100 NTU		

FIELD CALIBRATION FORM (continued) - YSI

COMMENTS

SIGNATURE

PID AND CGI CALIBRATION LOG

Site Name: _____

INSTRUMENT:	INSTRUMENT ID No:
OPERATOR:	WEATHER:
SPAN GAS TYPE:	DATE:
CALIBRATION NOTES:	
COMMENTS:	
SIGNATURE: _____	
DATE _____	

WELL PURGING AND SAMPLING RECORD

WELL ID _____ SAMPLE NO. _____

WELL/SITE DESCRIPTION _____

DATE ____/____/____ TIME _____ AIR TEMP. _____

WELL DEPTH _____ ft CASING HEIGHT _____ ft

WATER DEPTH _____ ft WELL DIAMETER _____ in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. _____ in

EQUIVALENT VOLUME OF STANDING WATER _____

(gal) (L)

PUMP RATE _____ (gpm)

(LPM)

PUMP TIME _____ min

WELL WENT DRY? () Yes () No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? () Yes () No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
		Unit:								

COMMENTS _____

SIGNATURE _____

**APPENDIX G—LIST OF ENDANGERED, THREATENED AND SPECIAL
CONCERN FISH & WILDLIFE SPECIES FOR NEW YORK STATE**



August 12, 2008

Corinne Shia
Alion Science & Technology
3975 Fair Ridge Drive, Suite 125
Fairfax, VA 22033

Dear Ms. Shia:

In response to your recent request, we have reviewed the New York Natural Heritage Program databases with respect to an Environmental Assessment for the proposed Soil Samplings at the Montauk Naval Sub Base, site as indicated on the map you provided, located in the Town of Montauk, Suffolk County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and should not be released to the public without permission from the New York Natural Heritage Program.

PLEASE NOTE: This project is adjacent to the East Hampton Wildlife Management Area

PLEASE NOTE: This project is adjacent to the New York Hither Woods State Park.

This project location is adjacent to a designated Significant Coastal Fish and Wildlife Habitat. This habitat is part of New York State's Coastal Management Program (CMP), which is administered by the NYS Department of State (DOS). Projects which may impact the habitat are reviewed by DOS for consistency with the CMP. For more information regarding this designated habitat and applicable consistency review requirements, please contact:

Jeff Zappieri or Vance Barr - (518) 474-6000
NYS Department of State
Division of Coastal Resources and Waterfront Revitalization
41 State Street, Albany, NY 12231

The presence of rare species may result in your project requiring additional permits, permit conditions, or review. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should NOT be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,



Tara Seoane

Information Services

NY Natural Heritage Program

cc: Reg. 1, Wildlife Mgr.
Reg. 1, Fisheries Mgr.
Tom Lyons, NYS OPRHP, Empire State Pl, Bldg. 1, Albany, 12238, 17th floor

Natural Heritage Report on Rare Species and Ecological Communities



NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor, Albany, NY
12233-4757
(518) 402-8935

~This report contains **SENSITIVE** information that should not be released to the public without permission from the NY Natural Heritage Program.
~Refer to the User's Guide for explanations of codes, ranks and fields.
~Location maps for certain species and communities may not be provided 1) if the species is vulnerable to disturbance, 2) if the location and/or extent is not precisely known, 3) if the location and/or extent is too large to display, and/or 4) if the animal is listed as Endangered or Threatened by New York State.

Natural Heritage Report on Rare Species and Ecological Communities



BUTTERFLIES and SKIPPERS

Speyeria idalia

Regal Fritillary	NY Legal Status: Endangered	NYS Rank: SH - Historical	Office Use 10327
	Federal Listing:	Global Rank: G3 - Vulnerable	ESU
	Last Report: **	EO Rank: **	
	County: Suffolk, New York State Waters		SC
	Town: East Hampton, Ny State Waters		
	Location: At, or in the vicinity of, the project site.		
	Directions: **		
	General Quality and Habitat: **For information on the population at this location and management considerations, please contact the NYS DEC Regional Wildlife Manager for the Region where the project is located, or the NYS DEC Endangered Species Unit at 518-402-8859.		

COMMUNITIES

Maritime heathland

This occurrence of Maritime Heathland is considered significant from a statewide perspective by the NY Natural Heritage Program. It is either an occurrence of a community type that is rare in the state or a high quality example of a more common community type. By meeting specific, documented significance criteria, the NY Natural Heritage Program considers this occurrence to have high ecological and conservation value.

	NY Legal Status: Unlisted	NYS Rank: S1	Office Use 5486
	Federal Listing:	Global Rank: G3	
	Last Report: 1997-05-08	EO Rank:	
	County: Suffolk		SL
	Town: East Hampton		
	Location: Montauk Mountain		
	Directions: The heathland is west of Fort Pond. From Montauk Beach, go east on Montauk Highway (Route 27), north on Second House Road to near the end, and left (west) on Fort Lane (a steep hill) to the end of a cul-de-sac.		
	General Quality and Habitat: Hilltop overlooking Fort Pond, dominated by ericads at summit. Oaks and pines on slopes with heath remnant understory.		



Coastal oak-heath forest

This occurrence of Coastal Oak-Heath Forest is considered significant from a statewide perspective by the NY Natural Heritage Program. It is either an occurrence of a community type that is rare in the state or a high quality example of a more common community type. By meeting specific, documented significance criteria, the NY Natural Heritage Program considers this occurrence to have high ecological and conservation value.

Office Use

NY Legal Status:	Unlisted	NYS Rank:	S3	287
Federal Listing:		Global Rank:	G4	
Last Report:	1999-10-07	EO Rank:		
County:	Suffolk			
Town:	East Hampton			
Location:	Hither Woods			
Directions:	The forest community covers much of Hither Hills and extends east to Fort Pond, south to Montauk Point State Parkway, west to Petticoat Hill, and north to Napeague Bay. Access is from Old Tar Road which is driveable northeast to Flaggy Hole.			
General Quality and Habitat:	This is a large, mature, intact community with some putative old growth cores, in a regionally intact landscape. A large oak forest with heath understory forming the matrix of an intact 2000 acre coastal forest complex on top of a large push moraine at the east end of Long Island. Coastal oak-hickory forest forms the remainder of the forest matrix. Included in these forests are small patches of coastal oak-laurel forest and historically burned successional areas classified as pitch pine-oak heath woodland. The landscape is intact with only a few small bisecting dirt roads.			

Maritime post oak forest

This occurrence of Maritime Post Oak Forest is considered significant from a statewide perspective by the NY Natural Heritage Program. It is either an occurrence of a community type that is rare in the state or a high quality example of a more common community type. By meeting specific, documented significance criteria, the NY Natural Heritage Program considers this occurrence to have high ecological and conservation value.

Office Use

NY Legal Status:	Unlisted	NYS Rank:	S2S3	6092
Federal Listing:		Global Rank:	G3G4	
Last Report:	1999-09-23	EO Rank:		
County:	Suffolk, New York State Waters			
Town:	East Hampton, Ny State Waters			
Location:	Hither Woods			
Directions:	From the junction of Route 27 and Old Montauk Highway, go east on Route 27 about 0.8 mi to the access road. Turn left on the access road and follow it northwest about 0.4 mi to an intersection. Turn right and continue on the road northeast about 0.2 mi to another intersection. Park and follow the road about 0.2 mi NNW to the ocean. The forest is on the bluffs above the beach and the dunes.			
General Quality and Habitat:	Moderate to large, mature, diverse, <1% exotics, bisected by Long Island railroad, within a regionally intact landscape. A narrow band of maritime forest on exposed bluffs of Napeague Bay. A very narrow strip of maritime dunes and maritime beach occurs on the slope of the bluff and below it to the north. The maritime forest grades into the matrix forest of the moraine, coastal oak-heath forest, and small patches of coastal oak-laurel forest to the south. The Long Island Railroad bisects the maritime forest near its southern edge. The community is contained within a natural area of 3000 acres that includes an intact 2000 acre coastal forest complex.			



Marine rocky intertidal

This occurrence of Marine Rocky Intertidal is considered significant from a statewide perspective by the NY Natural Heritage Program. It is either an occurrence of a community type that is rare in the state or a high quality example of a more common community type. By meeting specific, documented significance criteria, the NY Natural Heritage Program considers this occurrence to have high ecological and conservation value.

Office Use

NY Legal Status: Unlisted **NYS Rank:** S1S2 9166
Federal Listing: **Global Rank:** G5
Last Report: 1999-09-23 **EO Rank:**
County: Suffolk, New York State Waters
Town: East Hampton, Ny State Waters
Location: Napeague Bay
Directions: From the junction of Route 27 and Old Montauk Highway, go east on Route 27 about 0.8 mi to the access road. Turn left on the access road and follow it northwest about 0.4 mi to an intersection. Turn right and continue on the road northeast about 0.2 mi to another intersection. Park and follow the road about 0.2 mi NNW to the ocean. The community extends west to Goff Point and east to Rocky Point.

General Quality and Habitat: Moderate size, minimal disturbance, codium litter (<1%), bordered by natural communities, some vehicles on beach, in a regionally intact landscape. A rocky shore of Napeague Bay from Goff Point to Rocky Point. Long Island Sound is to the north and a maritime beach is adjacent to the south. The maritime beach is adjacent to a narrow band of maritime forest which is adjacent to a 2000 acre coastal forest complex. The Long Island Railroad bisects the forest complex and runs parallel to the shore approximately 200 m from the marine rocky intertidal. The marine rocky intertidal forms the edge of an 1100 acre natural area unbisected by paved roads and anatural area of 3000 acres.

VASCULAR PLANTS

Amelanchier nantucketensis

Office Use

Nantucket Juneberry **NY Legal Status:** Endangered **NYS Rank:** S1 - Critically imperiled 4841
Federal Listing: **Global Rank:** G3Q - Vulnerable
Last Report: 2001-05-09 **EO Rank:** Excellent or Good
County: Suffolk
Town: East Hampton
Location: Hither Woods
Directions: From the Hither Hills State Park office, follow Montauk Highway west to Old Tar Road. Park immediately after turning northwest on Old Tar Road. Walk northwest to railroad. The plants begin to appear midway between Montauk Highway and the first trail crossing the railroad. Most plants are on the east side of the railroad allowing for a slight western exposure. The plants continue along the railroad throughout Hither Hills State Park.

General Quality and Habitat: Nearly 200 stems are scattered throughout the area near the railroad, powerline crossing and the tourist overlook. A mowed roadside/pathway and burned area surrounded by a pitch pine-oak-heath woodland. Railroad right-of-way, powerline right-of-way and overlook area receive occasional mowing or burning to keep shrubby vegetation in-check. Most plants are restricted to areas where they have a slight western exposure. Associated species: Quercus alba, Quercus velutina, Amelanchier stolonifera, Myrica pensylvanica, Rhus copallina, Vaccinium angustifolium, Rubus allegheniensis, Arctostaphylos uva-ursi, Schizocharium scoparium, Helianthemum dumosum, Carex pensylvanica, Deschampsia flexuosum, Danthonia spicata, Cyperus filiculmis, Hieracium gronovii, Lechea maritima.

Amelanchier nantucketensis

Office Use

Nantucket Juneberry **NY Legal Status:** Endangered **NYS Rank:** S1 - Critically imperiled 5107
Federal Listing: **Global Rank:** G3Q - Vulnerable
Last Report: 1997-05-08 **EO Rank:** Fair
County: Suffolk
Town: East Hampton
Location: Montauk Mountain
Directions: The plants are 0.3 mi south of the extreme west end of Fort Pond. The plants are just south, after the entrance gate, about 10-15 m down slope on Montauk Mountain overlooking Fort Pond Bay and Fort Pond.

General Quality and Habitat: There are 6 clones in a small, protected habitat. The area is a small heath-dominated hilltop. There is good quality heathland on the hill top. Associated species: Andropogon, Myrica, Vaccinium and Arctostaphylos.



Eleocharis uniglumis var. *halophila*

Salt-marsh Spikerush	<p>NY Legal Status: Threatened</p> <p>Federal Listing:</p> <p>Last Report: 1985-09-07</p> <p>County: Suffolk</p> <p>Town: East Hampton</p> <p>Location: Fort Pond</p> <p>Directions: From the junction of Second House Drive and Industrial Road, go east 0.1 mi on Industrial Road. The plants occur south of the road. 1936 specimen label: edge of a pond, south of the railroad station.</p> <p>General Quality and Habitat: This is a fair population in diverse, but disturbed habitat. Shallow water and exposed sand bar surrounded by Phragmites. Associated species: Phragmites, Limosella australis, Cyperus sp., Hydrocotyle spp. 1936: edge of pond.</p>	<p>NYS Rank: S2 - Imperiled</p> <p>Global Rank: G4T4G4T4</p> <p>EO Rank: Good or Fair</p>	<p>Office Use 117</p> <p>SL</p>
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Helianthemum dumosum

Bushy Rockrose	<p>NY Legal Status: Threatened</p> <p>Federal Listing:</p> <p>Last Report: 2005-06-10</p> <p>County: Suffolk</p> <p>Town: East Hampton</p> <p>Location: Montauk Mountain</p> <p>Directions: Montauk Mountain is west of the village of Montauk. From the junction of Industrial Road and Second House Road, go SSW 0.4 miles to hill tops with open grassy vegetation. The plants are scattered in 4 disjunct locations at the Montauk Mountain Preserve and also at the Fite House.</p> <p>General Quality and Habitat: There is an average of 1048 plants over a three-year period in good habitat. Part of the area is protected by The Nature Conservancy. The plants are on grassy-heath knolls surrounded by houses and oak woods on slopes of hills. They are scattered in a remnant of maritime heathland at five disjunct sites. Associated species: Schizachyrium scoparium, Arctostaphylos uva-ursi, Hudsonia sp., Liatris sp., Gaylussacia baccata.</p>	<p>NYS Rank: S2 - Imperiled</p> <p>Global Rank: G3 - Vulnerable</p> <p>EO Rank: Excellent</p>	<p>Office Use 9036</p>
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Hydrocotyle verticillata

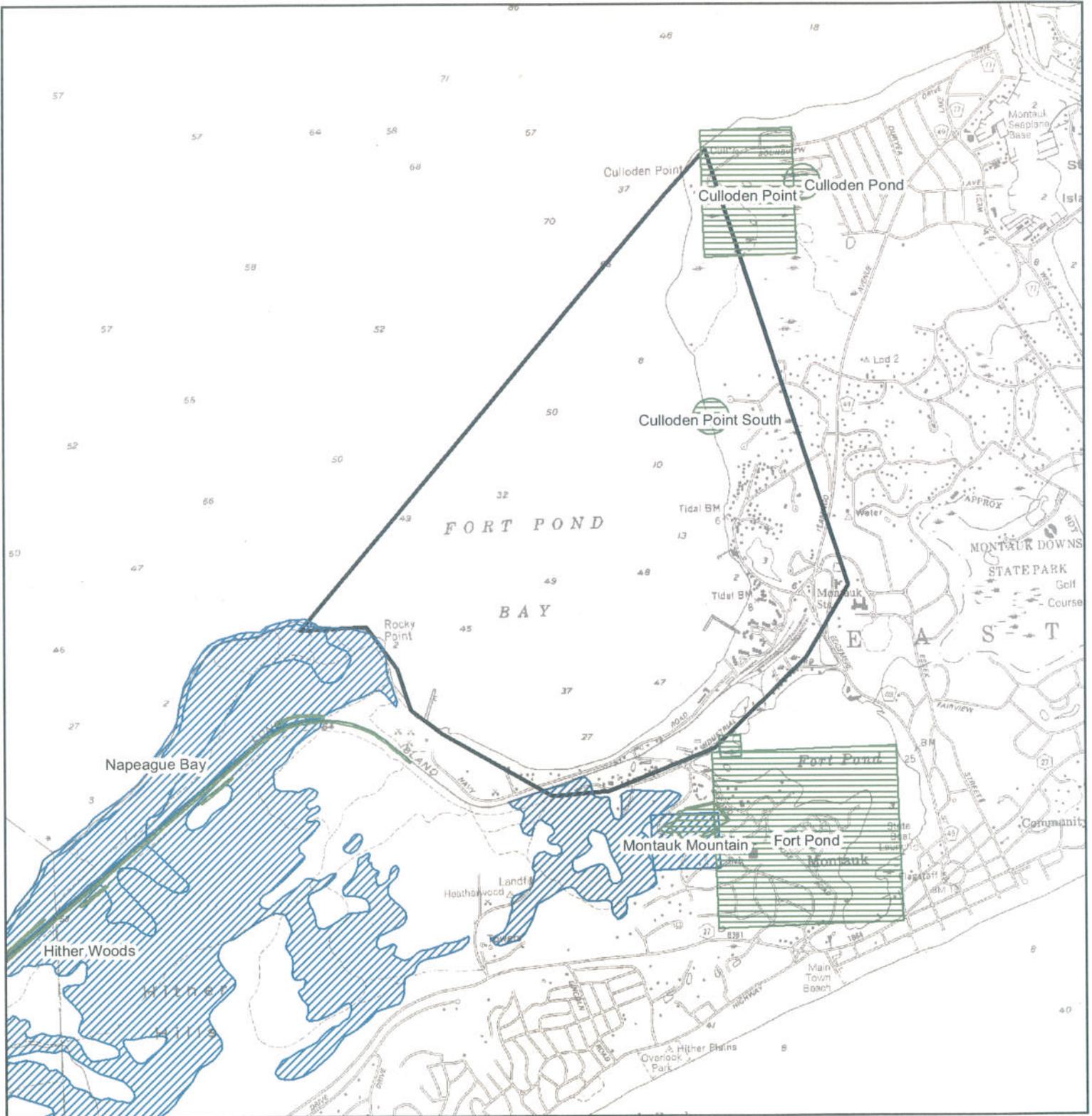
Whorled-pennywort	<p>NY Legal Status: Endangered</p> <p>Federal Listing:</p> <p>Last Report: 2004-08-25</p> <p>County: Suffolk</p> <p>Town: East Hampton</p> <p>Location: Fort Pond</p> <p>Directions: Group 1: The plants are south of Industrial Road along the north shore just west of the LILCO sub-station. Group 2: The plants are in the south lobe of the pond along the east side of the boardwalk to the gazebo from Montauk Highway. The plants are along the upper pond margin.</p> <p>General Quality and Habitat: There are hundreds of leaves, dozens of individuals in a small area in fair habitat. The plants are growing at the upper pond margin and in shallow water in sandy, gravelly soil. Associated species: Cyperus spp. and Phragmites.</p>	<p>NYS Rank: S1 - Critically imperiled</p> <p>Global Rank: G5 - Demonstrably secure</p> <p>EO Rank: Fair</p>	<p>Office Use 7771</p> <p>SL</p>
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Ligusticum scoticum ssp. *scoticum*

Scotch Lovage	<p>NY Legal Status: Endangered</p> <p>Federal Listing:</p> <p>Last Report: 1991-09-18</p> <p>County: Suffolk, New York State Waters</p> <p>Town: East Hampton, Ny State Waters</p> <p>Location: Culloden Point South</p> <p>Directions: The plants are 0.8 mi south of Culloden Point along the beach. The plants are on a steep morainal bank.</p> <p>General Quality and Habitat: Dense, but small population, probably protectable. An eroded bank covered with disturbed area species. The plants are growing on a steep bank with Myrica pensylvanica, Oenothera, Rosa sp., and Tussilago.</p>	<p>NYS Rank: S1 - Critically imperiled</p> <p>Global Rank: G5T3T5 - Vulnerable</p> <p>EO Rank: Good</p>	<p>Office Use 880</p> <p>SC</p>
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Natural Heritage Map of Rare Species and Ecological Communities

Prepared July 30, 2008 by the NY Natural Heritage Program, NYS DEC Albany, NY



Legend

Project Site

NY Natural Heritage Program Database Records*

Plant

Community

1:30,000



*The locations that are displayed are considered sensitive and should not be released to the public without permission. We do not provide map locations for all records. Please see report for details.



Natural Heritage Report on Rare Species and Ecological Communities



NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

HISTORICAL RECORDS

The following plants and animals were documented in the vicinity of the project site at one time, but have not been documented there since 1979 or earlier.

There is no recent information on these plants and animals in the vicinity of the project site and their current status there is unknown. In most cases the precise location of the plant or animal in this vicinity at the time it was last documented is also unknown and therefore location maps are generally not provided.

If appropriate habitat for these plants or animals is present in the vicinity of the project site, it is possible that they may still occur there.

Natural Heritage Report on Rare Species and Ecological Communities



MOTHS

Abagrotis nefascia benjamini

Coastal Heathland
Cutworm

NY Legal Status: Unlisted

NYS Rank: S1S3 - Critically imperiled

Office Use
3104

Federal Listing:

Global Rank: G4T3 - Vulnerable

Last Report: 1951-09-09

EO Rank: Historical, no recent
information

County: Suffolk

Town: East Hampton

Location: Montauk

Directions: Montauk, Long Island.

General Quality
and Habitat:

SC

Schinia tuberculum

Golden Aster
Flower Moth

NY Legal Status: Unlisted

NYS Rank: S2 - Imperiled

Office Use
2836

Federal Listing:

Global Rank: G4 - Apparently secure

Last Report: 1927-07-20

EO Rank: Historical, no recent
information

County: Suffolk

Town: East Hampton

Location: Montauk

Directions: Montauk, Long Island, New York.

General Quality
and Habitat:

M

VASCULAR PLANTS



Agalinis acuta

Sandplain
Gerardia

NY Legal Status: Endangered

NYS Rank: S1 - Critically imperiled

Office Use
1668

Federal Listing: Endangered
Last Report: 1937-08-18

Global Rank: G1 - Critically imperiled
EO Rank: Historical, no recent information

USFWS

County: Suffolk
Town: East Hampton
Location: North Of The Inn At Montauk
Directions: Specimen labels: North of the inn at Montauk [probably refers to Montauk Manor which is 0.2 mi east of Montauk Railroad Station].
General Quality and Habitat: Specimen labels: Open downs.

Carex hormathodes

Marsh Straw
Sedge

NY Legal Status: Threatened

NYS Rank: S2S3 - Imperiled

Office Use
7270

Federal Listing:
Last Report: 1936-06-18

Global Rank: G4G5 - Apparently secure
EO Rank: Historical, no recent information

County: Suffolk
Town: East Hampton
Location: Railroad Station Montauk
Directions: Montauk.
General Quality and Habitat: Bog near railroad station, border of a pond near railroad station.

M

Carex straminea

Straw Sedge

NY Legal Status: Endangered

NYS Rank: S1 - Critically imperiled

Office Use
395

Federal Listing:
Last Report: 1925-06-24

Global Rank: G5 - Demonstrably secure
EO Rank: Historical, no recent information

County: Suffolk
Town: East Hampton
Location: Northwest Of The Inn At Montauk
Directions: Moist sand near Seabeach north of inn at Montauk.
General Quality and Habitat: Moist sand.

M

Chasmanthium laxum

Slender
Spikegrass

NY Legal Status: Endangered

NYS Rank: S1 - Critically imperiled

Office Use
5600

Federal Listing:
Last Report: 1923-06-30

Global Rank: G5 - Demonstrably secure
EO Rank: Failed to find but search more

County: Suffolk
Town: East Hampton
Location: Fort Pond
Directions: Fort Pond, Montauk.
General Quality and Habitat: Failed to find the plant, but more habitat is available.



Digitaria filiformis

Slender Crabgrass NY Legal Status: Threatened

NYS Rank: S1 - Critically imperiled

Office Use
1320

Federal Listing:

Global Rank: G5 - Demonstrably secure

Last Report: 1924-09-20

EO Rank: Historical, no recent information

County: Suffolk, New York State Waters

Town: East Hampton, Ny State Waters

Location: Hither Woods

Directions: Hither Woods, Montauk.

General Quality and Habitat:

Eleocharis uniglumis var. halophila

Salt-marsh NY Legal Status: Threatened

NYS Rank: S2 - Imperiled

Office Use
6559

Spikerush

Federal Listing:

Global Rank: G4T4G4T4

Last Report: 1936-06-18

EO Rank: Historical, no recent information

County: Suffolk

Town: East Hampton

Location: Fort Pond

Directions: Brackish pond, southeast part of village, Montauk Point.

General Quality and Habitat: Brackish pond.

Eupatorium hyssopifolium var. laciniatum

Fringed Boneset NY Legal Status: Threatened

NYS Rank: S2 - Imperiled

Office Use
5707

Federal Listing:

Global Rank: G5T4T5 - Apparently secure

Last Report: 1925-09-12

EO Rank: Historical, no recent information

County: Suffolk

Town: East Hampton

Location: North Of The Inn At Montauk

Directions: Open dry downs, north of the inn at Montauk.

General Quality and Habitat: Dry open downs.

M

Helianthemum dumosum

Bushy Rockrose NY Legal Status: Threatened

NYS Rank: S2 - Imperiled

Office Use
4588

Federal Listing:

Global Rank: G3 - Vulnerable

Last Report: 1920-06-02

EO Rank: Failed to find but search more

County: Suffolk

Town: East Hampton

Location: West Of The Inn

Directions: 0.2 mi east of Fort Pond.

General Quality and Habitat: Open downs.

M



Iris prismatica

<p>Slender Blue Flag</p> <p>NY Legal Status: Threatened</p> <p>Federal Listing:</p> <p>Last Report: 1962-06-29</p> <p>County: Suffolk</p> <p>Town: East Hampton</p> <p>Location: Fort Pond</p> <p>Directions: 1962: borders of Fort Pond, Montauk. 1923-pre: Montauk Point.</p> <p>General Quality and Habitat: Borders of pond.</p>	<p>NYS Rank: S2 - Imperiled</p> <p>Global Rank: G4G5 - Apparently secure</p> <p>EO Rank: Historical, no recent information</p>	<p>Office Use 6667</p>
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Potamogeton pulcher

<p>Spotted Pondweed</p> <p>NY Legal Status: Threatened</p> <p>Federal Listing:</p> <p>Last Report: 1920-07-28</p> <p>County: Suffolk</p> <p>Town: East Hampton</p> <p>Location: Montauk</p> <p>Directions: Shallow pond, south of inn.</p> <p>General Quality and Habitat: Shallow pond.</p>	<p>NYS Rank: S2 - Imperiled</p> <p>Global Rank: G5 - Demonstrably secure</p> <p>EO Rank: Historical, no recent information</p>	<p>Office Use 4816</p> <p>M</p>
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Schoenoplectus heterochaetus

<p>Slender Bulrush</p> <p>NY Legal Status: Endangered</p> <p>Federal Listing:</p> <p>Last Report: 1923-07-07</p> <p>County: Suffolk</p> <p>Town: East Hampton</p> <p>Location: Northwest Of The Inn At Montauk</p> <p>Directions: The plant was collected from the water of a small pond northwest of the inn at Montauk.</p> <p>General Quality and Habitat: A small pond.</p>	<p>NYS Rank: S1 - Critically imperiled</p> <p>Global Rank: G5 - Demonstrably secure</p> <p>EO Rank: Historical, no recent information</p>	<p>Office Use 4003</p>
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Spiranthes vernalis

<p>Spring Ladies'-tresses</p> <p>NY Legal Status: Endangered</p> <p>Federal Listing:</p> <p>Last Report: 1928-08-02</p> <p>County: Suffolk</p> <p>Town: East Hampton</p> <p>Location: Lake Montauk</p> <p>Directions: West of Great Pond [Lake Montauk], dry hills.</p> <p>General Quality and Habitat: Dry hills.</p>	<p>NYS Rank: S1 - Critically imperiled</p> <p>Global Rank: G5 - Demonstrably secure</p> <p>EO Rank: Historical, no recent information</p>	<p>Office Use 7844</p>
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Spiranthes vernalis

Spring
Ladies'-tresses

NY Legal Status: Endangered

NYS Rank: S1 - Critically imperiled

Office Use
9216

Federal Listing:

Global Rank: G5 - Demonstrably secure

Last Report: 1947-08-02

EO Rank: Historical, no recent
information

County: Suffolk

Town: East Hampton

Location: Montauk

Directions: Montauk Station, meadow.

General Quality and Habitat: Meadow. Associated species: Drosera.

M

15 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at <http://www.natureserve.org/explorer>, from NYSDEC at <http://www.dec.ny.gov/animals/7494.html> (for animals), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

FINAL



Response to Comments – Site Specific Work Plan
(SS-WP) for the Formerly Used Defense Site (FUDS)
Montauk Naval Sub Base

FUDS Project # **C02NY076602**

Prepared Under: **Contract No. W912DY-04-D-0017**
Delivery Order # 00170001

Prepared for:

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September 2008

PROJECT: Fort Michie MMRP SI - Site Specific Work Plan Addendum

New York State Department of Environmental Conservation (NYSDEC)

DESIGN REVIEW COMMENTS

Document reviewed: Draft Site-Specific Work Plan Addendum to the Programmatic Work Plan for the Formerly Used Defense Sites Military Munitions Response Program Site Inspection of Montauk Naval Sub Base, Suffolk County, New York, prepared by Alion Science and Technology, Durham, NC, June 2008

AREAS of REVIEW: SS-WP
 DATE of REVIEW: 25 August 2008
 NAME of REVIEWER: Check Ng - NYSDEC

ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1	General	<p>In the analysis of the soil and sediment results, the soil analysis should be compared to New York State 6 NYCRR Part 375 Soil Cleanup Objectives for Unrestricted Use (Website: http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsupdoc.pdf). The sediment samples should be compared to NYSDEC Division of Fish, Wildlife and Marine Resources Technical Guidance for Screening Contaminated Sediments (Table 2) (Website: http://www.dec.ny.gov/docs/wildlife.pdf/scddoc.pdf). A copy of both standards is included in the attachment to this letter. If New York State's standards are found to be the most stringent, the comparison of the soil and sediment results should be made in accordance with New York State's standards</p>	<p>N-NONCONCUR – Consistent with USACE direction on the MMRP SIs, federal criteria are used during the SI screening-level risk assessment. This approach is documented in the DQO 1:</p> <p>MC: If the maximum concentrations measured at the site exceed EPA human health screening criteria based on current and future land use and/or EPA interim ecological risk screening values, or site-specific background levels (highest value and mean value), then an RI/FS may be recommended for the site. If the maximum concentrations measured at the site do not exceed human health screening criteria or ecological risk screening values, then an NDAI may be recommended.</p> <p>In summary, all lines of evidence including secondary lines of evidence, such as historic data, field</p>

PROJECT: Fort Michie MMRP SI - Site Specific Work Plan Addendum

New York State Department of Environmental Conservation (NYSDEC)

DESIGN REVIEW COMMENTS

Document reviewed: Draft Site-Specific Work Plan Addendum to the Programmatic Work Plan for the Formerly Used Defense Sites Military Munitions Response Program Site Inspection of Montauk Naval Sub Base, Suffolk County, New York, prepared by Alion Science and Technology, Durham, NC, June 2008

AREAS of REVIEW: SS-WP
 DATE of REVIEW: 25 August 2008
 NAME of REVIEWER: Check Ng - NYSDEC

ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
			data, comparison to regional background concentration ranges for metals, and comparison to state screening/cleanup criteria, will be considered when making a final decision for an NDAI or RI/FS. Screening values selected for comparison at this site are specified in the chemical-specific measurement quality objective (MQO) tables.

APPENDIX H—REGULATORY CORRESPONDENCE

PROJECT: DRAFT SSWP Deblois Precision Bombing Range (D01ME048301)

COMMENTS

REVIEW: DRAFT SSWP Deblois Precision Bombing Range
 DATE: 20 May 2008
 NAME: Claudia Sait (MEDEP)

ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1	General	<p>The document states: <i>“Collect adequate quality and quantity of data to determine if the site requires additional investigation through a remedial investigation/feasibility study (RI/FS) or if the site may be recommended for No Department of Defense Action Indicated (NDAI) based on the presence or absence of munitions and explosives of concern (MEC) and munitions constituents (MC) (page C-2 DQO statement). It also states: “If the maximum concentrations measured at the site exceed EPA Region 6 Human Health Medium – Specific Screening Levels (MSSLs) based on current and future land use or EPA interim ecological risk screening values, or site-specific background levels...” (page C-3, Site Specific DQO Statement) For a site this size, the number of proposed samples is very small, therefore it is critical that the sample locations represent worst case scenarios and that sample collection and lab processing be appropriate.</i></p> <p>MEDEP is concerned that proposed surface soil samples will not prove useful if located in the footprint of the cultivated blueberry fields. These samples must be re-located to areas relatively undisturbed by recent activities, and specific suggestions are included below, based upon examination of aerial photography for the site and the recent Site Evaluation data collected around the Air Force MMRP site. MEDEP has attached a figure showing its preferred sampling locations.</p>	<p>A – ACCEPTED/CONCUR. The revised sample locations presented by MEDEP are acceptable and were implemented in the Final SS-WP as shown on Figure 8 and Table 3-1.</p>
2	General	<p>In general the portions of the proposed “meandering path” site inspection that proceed through the cultivated portions of the fields or along the well-travelled roads are unlikely to be of value given that visible debris appears to have been removed when the fields were prepared for cultivation, and would not be present where the roads have been in use for 40 years since the closure of the range. Where possible the paths must be redirected into the untraveled areas of the range. In particular, although MEDEP supports the proposed background locations to the northeast corner of the Formerly Used Defense Site (FUDS), the access road on the east side of the former antenna was evaluated during a</p>	<p>A – ACCEPTED/CONCUR. The reconnaissance paths have been revised in the Final SS-WP. The reconnaissance proposed by Alion will be conducted in two different methods: (1) Visual qualitative reconnaissance by vehicle – this type of reconnaissance will be performed along stretches of existing roads that are traversed by vehicle to get from one point to another at the FUDS. (2) Analog geophysics – this type of reconnaissance will be performed on foot by a</p>

PROJECT: DRAFT SSWP Deblois Precision Bombing Range (D01ME048301)

COMMENTS			
		REVIEW: DRAFT SSWP Deblois Precision Bombing Range DATE: 20 May 2008 NAME: Claudia Sait (MEDEP)	
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
		recent investigation, and as such it will not provide new information relative to potential risk at the site.	UXO Technician utilizing analog geophysical equipment. The areas covered by analog geophysics will include routes to sampling points, areas surrounding a sampling location, as well as areas historically known to have had MEC/MD or have been used by DoD. This figure has also been revised in the Final SS-WP to show increased analog geophysics surrounding the target areas and the suspected excavation/dump area east of Sector 2 of the Columbia Falls Air Force Station.
3	General	Table 3-1, notwithstanding, MEDEP does not understand how the proposed sampling locations were selected and cannot concur with the locations at this point. MEDEP would like to meet with the Corps and their consultants on site, if possible, in order to see some the remaining bombing site relics and to ground-truth the sampling locations. (Also see comment 34.b. below.)	A – ACCEPTED/CONCUR. The sample locations were chosen based on information gathered from historic documents including the INPR, ASR, and ASR Supplement and input at the TPP meeting. Figure 8 and Table 3-1 were revised in the Final SS-WP to show sample locations or coordinates where MEDEP suggested the new samples be located as noted in response to Sait comment 1. As stated in the TPP Memo, with prior approval from USACE, Alion will contact MEDEP to meet on site in order to ground-truth the sampling locations. The number of samples proposed for collection will remain the same, which is in excess of that typically proposed for other FUDS.
4	General	MEDEP requires field and laboratory data to be submitted in the agency's electronic data deliverable (EDD) format to support hardcopy tables and discussion in the report. The EDD template, contact information and supporting tables are also available online at http://www.maine.gov/dep/rwm/egad/ . General questions may also be directed to the project geologist Chris Evans at 207-287-7656, or please contact the Database Manager Erika Bonenfant at 207-287-5767, or at the contact information listed at the website. The data may be emailed as an attachment or submitted on CD with the report.	A – ACCEPTED/CONCUR. Alion will submit field and laboratory data in the MEDEP electronic data deliverable (EDD) format to support hardcopy tables and discussion in the report.

PROJECT: DRAFT SSWP Deblois Precision Bombing Range (D01ME048301)

COMMENTS			
		REVIEW: DRAFT SSWP Deblois Precision Bombing Range DATE: 20 May 2008 NAME: Claudia Sait (MEDEP)	
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
6	General	A spreadsheet file of all the GPS location data collected during the Site investigation (SI) must be provided as an appendix to the SI Report, or as a separate worksheet with the EDD.	A – ACCEPTED/CONCUR. GPS data collected in the field is used to create the Figures for the SI Report. In addition, Alion will submit GPS data in the Final SI Report as part of Appendix H GIS Data.
7	General	The figures submitted for the Work Plan were difficult to review in letter size paper format, due to the large size of the site. At least, figure 8 with the sample locations should be developed in a 11” x 17” or larger format. (Also see comment 34.b below.)	A – ACCEPTED/CONCUR. All of the figures, including Figure 8 showing the sample locations, were presented in an 11” x 17” format in the Draft SS-WP. The revised Figure 8 in the Final SS-WP is still in an 11” by 17” format. Comment 34.b noted - See response to Sait comment 3.
8	General	The 2007 discovery of an unidentified bomb in one of the surrounding properties during installation of irrigation piping demonstrates that even the relatively non-intrusive re-use of the property for blueberry production has resulted in potential MEC/MC contact by workers.	A – ACCEPTED/CONCUR. Alion agrees with this observation and will include all documented historic MEC/MD finds to make recommendations. Given the past history of this site and MEC/MD discoveries, it is likely this SI will result in an RI/FS recommendation. The proposed field work will provide additional evidence to support a final recommendation, and the absence of MEC or MC findings during the site visit is not likely to change the presumptive recommendation.
9	General	The Corps must provide a Quality Assurance Project Plan which at a minimum it must include the following: <ol style="list-style-type: none"> a. Standard Operating Procedures (SOPs) for how the samples will be collected, handled, shipped, and processed. b. Analytical: parameters, project action limits, methods, project quantitation limits. What lab will be used and what are lab method detection limits, reporting limits & standard operating procedures. Give control limits for spikes, duplicates, surrogates & instrument checks. What data package will be expected from the lab? c. Corrective actions: how will any discrepancies in sampling and 	A – ACCEPTED/CONCUR. This information has been developed programmatically for all SIs in the northeastern U.S. The reviewer is directed to the <i>Alion 2005 Programmatic Work Plan for Formerly Used Defense Sites (FUDS) Military Munitions Response Program (MMRP) Site Inspections at Multiple Sites in the Northeast Region</i> , which includes a QAPP and all the associated information requested. A copy of this document was mailed to MEDEP on June 2, 2008.

PROJECT: DRAFT SSWP Deblois Precision Bombing Range (D01ME048301)

COMMENTS			
		REVIEW: DRAFT SSWP Deblois Precision Bombing Range	
		DATE: 20 May 2008	
		NAME: Claudia Sait (MEDEP)	
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
		analysis procedures or quality be corrected/ by whom/ how documented. Are any sampling/ analysis audits planned? d. How will data be evaluated? What verification and validation procedures will be used?	
10	<u>Page 1-2, Section 1.2, Project Scope and Objectives:</u>	<p>“...this SI is a screening-level assessment to determine presence/absence of MEC and MC...”</p> <p>Since very limited sampling is going to be performed the sampling points must located in areas that would represent the worst case scenario. For example, sample points should be in or as close as possible to some of the remaining site relics (e.g., bombing target, EOD pit, strafing targets, etc), and in undisturbed areas not in areas actively cultivated for blueberries.</p>	A – ACCEPTED/CONCUR. See response to Sait comment 3.
11	<u>Page 1-2, Section 1.2, Project Scope and Objectives, bullet 5:</u>	There is no facility personnel at the Deblois Precision Bombing Range. Does the Corps mean conduct interviews with the Cherryfield Foods personnel? Please revise, as necessary.	A – ACCEPTED/CONCUR. The text has been revised to clarify that, if necessary, Alion will coordinate with Cherryfield Foods, Inc. personnel familiar with the Deblois Precision Bombing Range, which is also known by Cherryfield Foods, Inc. personnel as the “Bombing Range Fields.”
12	<u>Page 1-4, Section 1.3, TPP action items, bullet 4:</u>	a. Based on MEDEP’s field visit to the adjacent/overlapping Columbia Falls Air Force radar site (CFAFS) and on data available on the Maine Geologic Survey’s sand & gravel aquifer map for that quadrant there are some wells located within the Munitions Response Site (MRS). If any of these wells are appropriate for sampling, it will be important to try to obtain an installation log or at least to get a depth-to-bottom reading to support interpretation of the data.	A – ACCEPTED/CONCUR. (a) Alion did not identify any groundwater wells that meet sampling criteria. Alion has talked to the FUDS owner representative, Mr. Ragnar Kamp of Cherryfield Foods, and although several test wells were dug in the area, which may be the same wells shown on the Maine Geologic Survey’s sand and gravel aquifer map, only one groundwater well on the FUDS showed potential and was developed for possible use by Cherryfield Foods as an irrigation well. However, according to Mr. Kamp, the well, which has a depth of approximately 70 feet, ran dry within a day and could not be used for irrigation of these fields. The fields are irrigated from a source

PROJECT: DRAFT SSWP Deblois Precision Bombing Range (D01ME048301)

COMMENTS			
		REVIEW: DRAFT SSWP Deblois Precision Bombing Range DATE: 20 May 2008 NAME: Claudia Sait (MEDEP)	
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
		b. Please be aware if the Site Inspection report will contain interpretation of geology or groundwater flow it will need a stamp and signature of a Maine Certified Geologist.	approximately two miles away from the fields. According to Mr. Kamp, the well still exists, but its depth is not adequate for sampling by Alion. The approximate location of this groundwater well, as generally indicated by Mr. Kamp, is north of the strafing target in MRS 1. Since no groundwater wells appropriate for sampling were identified, no groundwater samples will be collected during this SI. However, given the previous documented MEC/MD finds at the FUDS, and as discussed during the TPP meeting, the Deblois Precision Bombing Range is likely to proceed to RI/FS at which time groundwater may be addressed. A – ACCEPTED/CONCUR (b) The SI report will discuss site geology and groundwater conditions in general terms. There will be no interpretation of geologic conditions or groundwater flow directions, therefore a Maine Certified Geologists’ stamp will not be required.
13	Page1-5, Section 1.3, Technical Project Planning Summary;	a.) Bullet 11: <i>“Alion will revise the sample maps to reflect the collection of one to two groundwater samples if groundwater wells are present and able to be sampled during the field work.”</i> Depending of the location(s) of existing wells the data may or may not represent the aquifer in the proximity of EOD or bombing target so before this data collected and used to make regulatory decisions it must be determined that the data represents the water quality in the areas of concern. b.) Bullet 15: <i>“Alion will revise the sample maps to reflect the collection on one of the samples from the open burn/open detonation (OB/OD) explosive ordnance disposal (EOD) area at a depth approximately two feet below the ground surface instated of 0-6 inches below the ground surface.”</i>	A – ACCEPTED/CONCUR. (a) See response to Sait comment #12. A – ACCEPTED/CONCUR. (b) Figure 8 in the Draft SS-WP shows the collection of sample DPBR-RC-SB-02-01 with a corresponding symbol indicating a subsurface soil sample located within the OB/OD

PROJECT: DRAFT SSWP Deblois Precision Bombing Range (D01ME048301)

COMMENTS			
		REVIEW: DRAFT SSWP Deblois Precision Bombing Range DATE: 20 May 2008 NAME: Claudia Sait (MEDEP)	
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
		This change has not been reflected on figure 8.	subrange. However, per notes on MEDEP's suggested sampling map that was submitted with these comments, Figure 8 in the Final SS-WP has been revised to show two subsurface soil samples: one in the bombing target and one in the suspected OB/OD pit. These two subsurface samples were generated by moving the existing subsurface soil sample (DBPR-RC-SB-02-01) from the Draft SS-WP into the center of the OB/OD pit and changing a surface soil sample (DBPR-RC-SS-01-07) to a subsurface soil sample (DBPR-RC-SB-02-02) and moving it from the western part of the OB/OD subrange to the center of the bombing target.
14	<u>Pages 1-9 - 1-11 Table 1-1, Point of Contact:</u>	Please remove Iver McLeod's name from the list and for Claudia Sait's project role please change it to remedial project manager. For Ted Wolfe, his project role is Federal Facilities Unit Leader. Rick Jones is no longer on the Columbia Fall Air Force Station portion of the bombing range and the new contact is Vern Bartels. Lastly, take out Gerardo Millan-Ramos as the EPA contact and add Nancy Smith.	A – ACCEPTED/CONCUR. All requested changes have been incorporated into Table 1-1.
15	<u>Section 2.2.3, p. 2-1, Geology and Soils:</u>	Some additional detail on the geology would help put the topography and shallow soils in context. The site is located within an extensive area of glacial sand and gravel marine delta deposits and ice contact stratified drift. Boring logs for locations on the uplands indicate sand and gravel deposits up to approximately 30 to 50 feet deep. (Maine Geologic Survey, Surficial Materials, Montegail Pond Quadrangle, 2000)	A – ACCEPTED/CONCUR. The geology section has been updated to include this information pertaining to the geological conditions at the site.
16	<u>Page 2-4, Section 2.4, Current Use and Projected Land Use:</u>	This section must be updated to definitively state who currently owns the property. Is MEDEP correct that if this property is still owned by the Air Force that it will no longer be a Former Utilized Defense Site (FUDS) and will be handled by the Air Force?	A – ACCEPTED/CONCUR. The text of the Final SS-WP has been revised to state that Cherryfield Foods, Inc. owns the FUDS. A portion of the original FUDS is actually owned by the U.S. Air Force and therefore ineligible for inclusion as part of the FUDS program. No samples are proposed for collection in this area.

PROJECT: DRAFT SSWP Deblois Precision Bombing Range (D01ME048301)

COMMENTS			
		REVIEW: DRAFT SSWP Deblois Precision Bombing Range DATE: 20 May 2008 NAME: Claudia Sait (MEDEP)	
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
17	<u>Page 2-5, Section 2.5.2, Archives Search Report:</u>	Please depict the dump area discovered during the 1995 site visit on one of the figures.	A – ACCEPTED/CONCUR. The dump area discovered by USACE during the 1995 site visit for the ASR was shown on Figure 3 – Site Layout as “possible excavation” in the Draft SS-WP.
18	<u>Page 2-6, Table 2-1, Potential Risk from Munitions and Explosives of Concern:</u>	MEDEP tried to compare the list of potential MEC and MC between the Air Force’s work plan and the Corps’ however there are too many dissimilarities so MEDEP has attached the list of from the Air Force’s work plan. Please review and compare to ensure that all the items and associated MC and MEC are included in this work plan. (Some noticeable items that are missing from your list is the 6 and 10 pound incendiary bombs, smokeless powder, titanium tetrachloride.)	N – NON-CONCUR. The list presented by MEDEP pertains to the Columbia Falls Air Force Station’s list of munitions. The list compiled by Alion is based on site visits and historical documentations of findings and armaments used at this FUDS. Alion’s list does not include the 6 and 10-lb incendiary bombs because they were not historically documented to have been used at the FUDS. On the other hand, Alion has included the AN-M88 and AN-M81 Fragmentation Bombs (220 lbs and 260 lbs respectively) while the Columbia Falls Air Force Station’s list neglected to identify them. No Action required.
19	<u>Page 2-7, Table 2-1:</u>	The explosive(s) used to demilitarize the different munitions items in the OB/OD pit should also be included in this table.	N – NON-CONCUR. There are many different types of explosives that could have been used for demilitarizing munitions. There is no historical documentation of what type of explosives were used for OB/OD activities. No Action required.
20	<u>Page 2-7, Section 2.6.1, Approach to Munitions Response Activities:</u>	It was impossible to ascertain from the figures exactly where the proposed sample points were relative to the areas of interest so MEDEP developed its own figure using the provided northings and eastings. It appears that none of the proposed sample points were biased for the presence of MEC/MC impact, as stated. MEDEP recommends meeting with the Corps to discuss potential sampling locations or preferably visit the site together to discuss the sampling locations. (Also see comment 34.b. below.)	A – ACCEPTED/CONCUR. See response to Sait comment #3.
21	<u>Section 2.6.1, p. 2-7, Approach to Munitions</u>	MEDEP supports inclusion of information from the Columbia Falls Air Force Station (CFAFS) report into the Site Inspection (SI) Report. Munitions fragments previously identified include possible 57/75 mm High Explosives (HE) rounds and incendiary bombs (found at the debris area east of the	N – NON-CONCUR. The MRS cannot be changed to incorporate the “debris area”. As discussed at the TPP meeting and shown in the Draft and Final SS-WP, a sample will be collected from the “debris area”

PROJECT: DRAFT SSWP Deblois Precision Bombing Range (D01ME048301)

COMMENTS			
		REVIEW: DRAFT SSWP Deblois Precision Bombing Range DATE: 20 May 2008 NAME: Claudia Sait (MEDEP)	
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
	<u>Activities, and Table 2-1:</u>	CFAFS). This debris area is targeted by one of the surface soil locations, but is not included in the MRS-1 boundary, please revise and include that area in the MRS. The Work Plan must also incorporate the additional potential munitions.	(DPBR-RC-SS-01-06) and analog geophysics will be performed in this area. Findings and results of sampling and qualitative reconnaissance in the “debris area” will be discussed in the SI report. See Response to comment 18 regarding the additional munitions requested for inclusion in the SS-WP.
22	<u>Page 2-9, Table 2-2, Composition:</u>	At the Columbia Falls Air Force Station, nitroguanadine was found in sediment. This constituent must also be added here and throughout the document as necessary.	N – NON-CONCUR. Nitroguanadine was not one of the MC constituents associated with the MEC formerly used on the Deblois FUDS. The presence of nitroguanadine at the Columbia Falls Air Force Station may be associated with other activities in that area.
23	<u>Page 2-11, Section 2.6.2.1, Background Samples:</u>	The objective of background samples is to collect samples that reflect the background concentrations in various media that is unaffected by site use. Some of the locations are too close the bombing range and must be move to more distal locations.	N – NON-CONCUR. Background locations (soil, sediment, and surface water) have been relocated, where appropriate, and are outside of and upgradient from the MRS boundary, within the FUDS boundary, and of similar geology making them appropriate background sample locations. Please note that a background sample has been added for surface water.
24	<u>Page 2-12, Section 2.6.2.2, para 5:</u>	<p><i>“The sampling locations and qualitative reconnaissance paths are subject to change based on actual site conditions and discretion of the field sampling team.”</i></p> <p>While MEDEP understands the necessity of field changes there is a danger in MEDEP not accepting the new sampling locations as meeting the DQOs.</p>	A – ACCEPTED/CONCUR. See response to Sait comment #3.
25	<u>Page 2-12, Section 2.6.2.2, and Figure 8:</u>	<p><i>“The sampling locations and qualitative reconnaissance paths are subject to change based on actual conditions...”</i></p> <p>a.) There are several adjustments that are needed to the proposed sample points and reconnaissance paths in order to avoid areas previously investigated as part of the CFAFS, and to target areas that are not reworked by the blueberry cultivation activities. The portions of the site that have been surveyed as part of the CFAFS should be outlined on Figure 8.</p>	a) A – ACCEPTED/CONCUR. Qualitative reconnaissance (QR) has been adjusted to the areas where the new samples will be collected, per MEDEP’s revised sample locations. See response to Sait comment #2 for additional revisions made to the QR path in the Final SS-WP. The location of Sector 2 of the CFAFS is shown on Figure 3. No samples have been proposed for this area.

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ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
		b.) If MEDEP is unable to observe the fieldwork, please notify the Department of any significant changes to the final planned locations, and of the location (if any) of groundwater samples to be collected. Significant changes to the Work Plan may affect MEDEP ability to agree with the conclusions of the report. c.) If groundwater is not evaluated the site will not be cleared for unrestricted groundwater use. Given the limited soil samples proposed and the blueberry cultivation ongoing over a large percentage of the central portion MRS 1 making the choice of locations difficult, the soil MC detections could be below project criteria while groundwater criteria are exceeded. d.) para 6: One subsurface soil sample will be collected at a depth of approximately 18-24 inches within the OB/OD sub-range.” See comment 13.b above.	b) A – ACCEPTED/CONCUR. Alion will notify the Department of any significant changes to the final planned locations prior to the commencement of field work. While field work is occurring, the field team leader will use his/her best professional judgement to relocate samples, as necessary. In accordance with USACE guidance on the MMRP SIs, Alion will not be able to contact or receive direction from MEDEP (if MEDEP is onsite) on changes in field sampling locations. c) A – ACCEPTED/CONCUR. See response to Sait comment #12. d) A – ACCEPTED/CONCUR. See response to Sait comment #13b.
26	<u>Page 2-13, Section 2.6.2.2, and Figure 8:</u>	“In addition to the MC sampling activities described above, a qualitative reconnaissance will be performed...” In order for the reconnaissance to be effective, efforts should be made to redirect reconnaissance paths through areas not in blueberry cultivation and not on established roads, both of which are unlikely to have any remaining munitions fragments.	A – ACCEPTED/CONCUR. See response to Sait comment #2.
27	<u>Page 3-1, Section 3.1, Pre-Field</u>	Please provide at least 14 day notice of field activities, to enable MEDEP to arrange for observation of the fieldwork, if personnel schedules allow.	A – ACCEPTED/CONCUR. Alion, in coordination with the Corps of Engineers, will notify MEDEP of planned field activities 14 days in advance of the field

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ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
	<u>Activities:</u>		work start date.
28	<u>Page 3-2, Section 3.3.1.1, para 1, and Figure 8:</u>	<p>“Site reconnaissance and field sampling activities require the use of ...”</p> <p>a. The proposed paths to the east (toward DPBR-BG-SS-01-02) and west (toward DPBR-BG-SS-01-03) appear to follow the existing roads and must be redirected where possible to the undeveloped areas next to the road. MEDEP supports the proposed background samples to the north of the CFAFS antenna or other distal location, but the path up to the locations must be relocated to the west of the road if it is to have any value.</p> <p>b. Also, the southern half of the antenna area has been evaluated by EM-61 and the information must be incorporated to the SI Report. That area already covered by the geophysical survey is unlikely to yield new information.</p>	<p>a) N – NON-CONCUR. Portions of Figure 8 in the Final SS-WP have been revised to clarify that some of the QR performed is visual QR via vehicle and some of the QR will involve use of analog geophysics. Given the site of the site, this is an appropriate strategy. Refer to response to Sait comment #2.</p> <p>b) A – ACCEPTED/CONCUR. As stated in Section 2.6.1 of the Draft and Final SS-WP, this data will be reviewed and incorporated into the SI Report, as appropriate.</p>
29	<u>Page 3-3, Section 3.3.1.1, Land Areas, bullet 4:</u>	The local response authority in this case is Department of Public Safety (State police) however this State agency has limited experience and training in this field. Either the Air Force or the Corps must be prepared to deal with anomalies that may present an explosives hazard.	N – NON-CONCUR. The process described on Page 3-3, Section 3.3.1.1, Land Areas, bullet 4, is in line with programmatic procedures approved by the U.S. Army Corps of Engineers Center of Expertise.
30	<u>Page 3-5, Section 3-4, Munitions Constituents Field Sampling Activities, para 1:</u>	<p>“... except that the soil samples will be homogenized in a one-gallon plastic bag rather than in stainless steel mixing bowls.”</p> <p>Homogenizing the soil samples in a plastic bag is acceptable if the lab is going to use SW8330B method for processing the soil samples in the lab for explosives.</p>	N – NON-CONCUR. Explosives will be analyzed using SW8330A. Multi increment sampling via Method 8330B is not proposed for this FUDS SI. See response to comment #44.
31	<u>Pages 3-6, Table 3-1:</u>	<p>a.) If the Corps is targeting the worst case scenario then surface soil samples must be taken from within undisturbed areas in the target areas or in the OB/OD EOD range. See comment 1 above.</p> <p>b.) If access to groundwater locations is obtained those wells must be located</p>	<p>A – ACCEPTED/CONCUR. See response to Sait Comment #1.</p> <p>A – ACCEPTED/CONCUR. No groundwater samples</p>

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		using GPS along with the soil locations.	were identified for sampling by Alion during this SI. See response to Sait comment #12.
32	<u>Page 3-7, Section 3.4.1, Background Samples, Figure 8, and Table 3-1:</u>	DPBR-BG-SS-01-01 and DPGR-BG-SD-01-01 – please confirm these locations will target the upstream portion of the small tributary streams that cross the access road, and that the influence of the nearby cranberry bogs will be evaluated prior to sampling.	A – ACCEPTED/CONCUR. According to Mr. Ragnar Kamp of Cherryfield Foods, Inc., who is familiar with the area surrounding the FUDS, the cranberry bogs are located north of the FUDS. Although this may be upstream of the FUDS, no known sources of explosives, metals or perchlorate are affiliated with these bogs or any other land uses immediately upstream of the FUDS.
33	<u>Page 3-7 and 3-8, Sections 3.4.1 through 3.4.6:</u>	The Corps is proposing to analyze for 6 metals (antimony, copper, lead, magnesium, nickel and zinc), whereas the Air Force sampled for 24 metals. While 24 metals may not be necessary the metal analyzed must be based on the type of munitions known to be associated with this site. If the site scores high enough and an Remedial Investigation performed then all the metals could be analyzed for at that time, however if the site does not move to the RI phase there is a data gap and the State would not be able to concur with a finding of No Department of Defense Action Indicated.	A – ACCEPTED/CONCUR. Comment noted. The 6 metals proposed for analysis are based on the type of munitions known to be associated with this site. See response to Sait comment #18 for the differences between the Air Force study and this MMRP SI and see Sait comment #8 regarding the presumptive recommendation for this FUDS.
34	<u>Section 3.4.2, Surface Soil; Appendix C DQO Statement Number 1 p. C-2, Figure 8 & Table 3-1:</u>	a.) The text in Appendix C describes clearing a 25-foot radius around the sample point for MEC using the magnetometer and visual methods. USACE guidance recommends using at least a 30-point composite for soil samples for munitions constituents to reduce the inherent heterogeneity. To obtain representative data, sample collection and analysis must be SW8330B. b.) MEDEP has included a figure with revised sample locations. Specific location adjustments are as follows: <ul style="list-style-type: none"> • DPBR-RC-SS-01-01 & DPBR-RC-SS-01-04 – These locations must be shifted to portions of the target area not under blueberry cultivation. MEDEP has identified two possible locations uncultivated areas within the fields, there are also potential sample points at the edges of the fields. • DPBR-RC-SS-01-02 – This location must be shifted to the vicinity of one 	a) N – NON-CONCUR. In the response to Sait comment #44, Method 8330 B is not proposed for this SI. b) A – ACCEPTED/CONCUR. See response to Sait comments #1, #3 and #7.

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		NAME: Claudia Sait (MEDEP)	
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		<p>of the former strafing target berms, out of the blueberry field.</p> <ul style="list-style-type: none"> DPBR-RC-SS-01-04 – This location must be shifted into or as close as possible to the former target and out of the cultivated portion of the MRS. 	
35	<u>Section 3.4.3, Subsurface Soil, Section 1.3 second-to-last bullet, Figure 8 and Table 3-1:</u>	MEDEP suggests moving DPBR-RC-SB-02-01 into the former OB/OD EOD range. The current location is distal from the EOD berm and within a blueberry field, reducing the chances of providing useful data. The notes from the TPP meeting indicate this location would be moved, please revise the figure.	A – ACCEPTED/CONCUR. See response to Sait comment #13b.
36	<u>Page 3-9, Table 3-2:</u>	The field duplicate column needs to be totaled.	A – ACCEPTED/CONCUR. Table 3-2 has been revised to include the total duplicates.
37	<u>Section 3.4.5, Surface Water:</u>	Surface water samples should be collected just off the bottom of the water body not from the top of the water column. Please revise where necessary.	A – ACCEPTED/CONCUR. The Surface water samples will be collected just off the bottom of the water body, not from the top of the water column.
38	<u>Page 3-13, Section 3.4.6, Groundwater:</u>	Samples must be collected following USEPA’s low-flow procedures, and field parameter data must be collected (pH, ORP, dissolved oxygen, specific conductivity, temperature, and turbidity). Potential limitations on use of Cherryfield’s wells for sample data include improper location or wells screened over too large a portion of the aquifer.	N – NON-CONCUR. Alion did not identify any groundwater wells that meet sampling criteria; therefore, no groundwater samples will be collected during this SI. See response to Sait comments #12 and #49.
39	<u>Section 3.6, bullet 1:</u>	Please add a reference for the (draft-final) Comprehensive Site Evaluation for the CFAFS.	A - ACCEPTED/CONCUR. Refer to response to Sait comment 28b.
40	<u>Page 4-1 & 4-2, Section 4, Quality Assurance, para 2:</u>	<p>“The Preferred Maximum Method Quantitation Limit (PMMQL) (half the most stringent criteria) was identified...”</p> <p>MEDEP normally requires one third the most stringent screening criteria if attainable. If it is not attainable then it has to be highlighted.</p>	N – NON-CONCUR. This approach is consistent the Final Programmatic Work Plan (2005) and all work completed in the Northeast Region, including FUDS in Maine (e.g., Seal Island, Duck Island) has applied this protocol to determining the PMMQL.

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41	<u>Page B-3, Customer's Goals, Future Land Use(s):</u>	Rather than commercial should this state "Agricultural". Please revise.	A – ACCEPTED/CONCUR. Commercial has been revised to commercial/agricultural uses in the Final SS-WP.
42	<u>Page C-2, DQO Statement Number 1, Number of Samples Required:</u>	a.) If no groundwater data are collected then MEDEP will not be able to concur with a "No Department of Defense Action Indicated" recommendation for that media. b.) MEDEP has noted elsewhere that the paths as proposed include extensive portions of roads or areas previously cleared as part of the CFAFS and that most of these paths must be changed. These totals will need to be revised for the report.	a) A – ACCEPTED/CONCUR. Comment noted. Please refer to the response to comments #8 and #12 regarding the presumptive remedy. b) A - ACCEPTED/CONCUR. See response to Sait comment #25a and #26.
43	<u>Page C-3, DQO Statement Number 1, Sampling Method and Depths-MEC:</u>	The recent discovery of a bomb during excavation for an irrigation trench indicates munitions are present at the MRS. The bomb recovered did not resemble those presumed to be present at the site based on the news photo. This incident should be investigated further to determine the type of bomb and location and depth at which it was found. If the type of bomb is not currently listed, it must be listed as a line of evidence.	A – ACCEPTED/CONCUR. The November 2007 munition found by Cherryfield Foods, Inc. was described in news stories as a 100-pound bomb, which is already included in the list of munitions used in Table 2-2 of the SS-WP. Upon further review by a UXO technician, the canisters inside the bomb were believed to be designed to dispense smoke. The exact location of this find is unknown.
44	<u>Page C-3, Site Specific DQO Statement, MC:</u>	"The methods that can be used for analysis include the following: Explosives Methods-8330A, 8330A (mod) 6850; Metals Methods-010B (reduced), 6020 (reduced); Explosives Prep Methods-8330A (reduced), 8330A (mod); Metals Prep Method-3050B." SW 846 -8330 B must be used for soil and water for explosives since there is a reduced chance of error in the sampling and processing of the sample. Also surface soil samples must be collected using the multi-incremental sampling method with at least 30 point sample depending on the size of the decision unit.	N – NON-CONCUR. While Alion agrees with the concept of multi increment sampling, its application will not be applied to this FUDS since USACE and Alion did not plan for this sampling strategy when this task was issued; the schedule would be adversely impacted (MIS would increase the time frame for the SI, which is under a constrained schedule); and Alion's laboratory has not been certified for this type of analyses. Alion welcomes application of this methodology at other appropriate FUDS in Maine and, with USACE,

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			will work with MEDEP to identify and plan for MIS in advance of the TPP meeting to ensure schedule and cost impacts are minimized. Alion anticipates formal laboratory approval for Method 8330B analyses within the next 6 months. MIS is applied to surface soil sampling only and not water, sediment, or subsurface soil. Finally, as noted in the response to Sait comment #8, given the past history of this site and MEC/MD discoveries, it is likely this SI will result in an RI/FS recommendation, regardless of the sampling methodology applied. The field work proposed will provide additional evidence to support a final recommendation, and the absence of MEC or MC findings is not likely to change the presumptive recommendation.
45	<u>Page C-5, DQO Statement Number 2, Media of Interest:</u>	Any wells identified during the site investigation must be located using GPS and their locations shown on the report figures, even if sampling is not approved or appropriate.	N – NON-CONCUR. No groundwater wells were identified for sampling by Alion during this SI. See response to Sait comment #12.
46	<u>Page C-6, DQO Statement Number 2, Sampling Method and Depths:</u>	Please provide a copy of the Programmatic Field Sampling Plan. If it contains the SOPs and lab Quality Assurance Plan it will need to be reviewed and commented on as part of this work plan.	A – ACCEPTED/CONCUR. The Programmatic Work Plan (2005) was provided on a CD under a separate mailing on June 2, 2008 to Ms. Sait.
47	<u>Page C-9 – C-16, Tables 1 - 4:</u>	a.) Table 2 – for compounds with no sediment criteria, positive detections will be considered very conservatively by MEDEP, unless there are other sources for criteria in the relevant media.	a). A – ACCEPTED/CONCUR. Where no criteria are available for application in the risk screening, a weight of evidence evaluation will be applied based on the detections of other MC, the magnitude and frequency of exceedances of screening criteria, HQs (for ecological risk only), and other factors.

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		b.) Table 3 – Please revise to include the appropriate surface water criteria (the stricter of the State Ambient Water Quality Criteria (SWQC) or the federal Ambient Water Quality Criteria (AWQC) and the strictest criteria for freshwater or freshwater and organism) , rather than the groundwater values as listed. Also please replace “groundwater” with “surface water” in the third to last column.	b) N – NON-CONCUR. Federal human health screening values will be used in the SI Report. At this time, the most relevant and updated values are EPA Regional Screening Levels. Ecological screening values are derived from EPA studies or published documents. This approach is consistent with all SIs in the northeast, including SIs completed in Maine (e.g., Seal Island and Duck Island).
48	<u>Appendix D, p. D-12, Munitions List:</u>	See comment 18 above.	N – NON-CONCUR. See response to Sait comment 18.
49	<u>Appendix F, p. F-7, Field Calibration Form:</u>	Please add dissolved oxygen and oxidation-reduction potential to the calibration forms.	N – NON-CONCUR. As noted in the response to comment #38, dissolved oxygen and ORP are the two parameters not required by the approved PWP.

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COMMENTS

REVIEW: DRAFT SSWP Deblois Precision Bombing Range
 DATE: 13 May 2008
 NAME: Nancy Smith (U.S. EPA)

ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1	General	I will not be commenting on the report	A-Accept/Concur: No action necessary