
FINAL



Site-Specific Work Plan Addendum to the MMRP Programmatic Work Plan for the Site Inspection of Malta Test Station

FUDS Project # **C02NY089801**

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

Prepared for:

U.S. Army Engineering and Support Center, Huntsville

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November 2006

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TABLE OF CONTENTS

LIST OF TABLES	iv
LIST OF FIGURES (See Appendix A)	iv
LIST OF ACRONYMS AND ABBREVIATIONS	v
GLOSSARY OF TERMS	xi
 1. INTRODUCTION.....	 1-1
1.1 Project Authorization	1-1
1.2 Project Scope and Objectives.....	1-2
1.3 Technical Project Planning Summary.....	1-5
1.4 Work Plan Organization	1-6
 2. PROJECT DESCRIPTION AND PROJECT MANAGEMENT PLAN	 2-1
2.1 Project Location	2-1
2.2 Site Description.....	2-1
2.2.1 Topography	2-1
2.2.2 Climate and Vegetation.....	2-2
2.2.3 Geology and Soils	2-2
2.3 Site History	2-3
2.4 Current Use and Projected Land Use.....	2-4
2.5 Previous Investigations of the Site.....	2-4
2.5.1 1980 Inventory Project Report (INPR), amended 2005.....	2-4
2.5.2 1989 Aerial Photo Analysis	2-5
2.5.3 1992 Literature Search Report	2-5
2.5.4 1995 Remedial Investigation (RI) Report and Ongoing Feasibility Study.....	2-5
2.5.5 1999 Superfund Preliminary Site-Closeout Report	2-8
2.5.6 2006 Environmental Assessment.....	2-9
2.6 Initial Summary of Risk from Munitions and Explosives of Concern and Munitions Constituents	 2-11
2.7 Project Organization	2-12
2.8 Project Schedule.....	2-17
 3. MUNITIONS AND EXPLOSIVES OF CONCERN FIELD INVESTIGATION PLAN ...	 3-1
3.1 Approach to Munitions Response Activities	3-1
3.2 Data Quality Objectives.....	3-1
3.3 Conceptual Site Model.....	3-2

3.4	Munitions and Explosives of Concern Exposure Analysis.....	3-2
3.4.1	Demographics	3-4
3.4.2	Site Accessibility/Future Use.....	3-4
3.4.3	Munitions and Explosives of Concern and Munitions Constituents Exposure Routes	3-5
3.5	Pre-Field Activities	3-6
3.5.1	Identification of Areas of Concern	3-6
3.6	Environmental Protection Program.....	3-7
3.6.1	Threatened and Endangered Species	3-8
3.6.2	Wetlands	3-8
3.6.3	Cultural, Archaeological, and Water Resources	3-8
3.6.4	Coastal Zone	3-8
3.6.5	Tree and Shrub Removal	3-8
3.6.6	Existing Waste Disposal Sites	3-9
3.7	Munitions and Explosives of Concern Avoidance Design and Rationale	3-9
3.7.1	Site Reconnaissance and Field Procedures	3-9
3.7.2	Equipment	3-10
3.7.3	Calibration and Method Testing	3-11
4.	MUNITIONS CONSTITUENT SAMPLING AND ANALYSIS PLAN.....	4-1
4.1	Introduction.....	4-1
4.2	Non-Direct Measurement Data Acquisition	4-1
4.2.1	Rationale for Non-Direct Measurement.....	4-1
4.2.2	Criteria for Non-Direct Measurement.....	4-2
4.2.3	Use of Reputable Sources	4-2
4.2.4	Multiple Data Source Comparison.....	4-2
4.2.5	Senior Technical Review	4-2
4.2.6	Independent Expert Evaluation.....	4-3
4.3	Field Activities.....	4-3
4.3.1	Background Samples	4-5
4.3.2	Surface Soil.....	4-5
4.3.3	Subsurface Soil	4-6
4.3.4	Sediment	4-6
4.3.5	Surface Water.....	4-7
4.3.6	Groundwater	4-7
4.4	Field Operations Documentation	4-7
4.4.1	Sample Handling.....	4-8

4.4.2	Investigative Derived Waste	4-8
4.4.3	Quality Assessment/Three Phase Inspection Procedures	4-8
4.4.4	Nonconformance/Corrective Action	4-8
4.5	Munitions Response Site Prioritization Protocol and Hazardous Ranking System Data Acquisition	4-8
4.6	Site-Specific Quality Assurance Project Plan.....	4-16
4.6.1	Data Quality Objective Process	4-16
4.6.2	Technical Project Planning Process	4-17
4.6.2.1	Identify Decision Types	4-17
4.6.2.2	Identify Data Uses and Needs.....	4-18
4.6.2.3	Design Data Collection Program	4-19
5.	SITE SPECIFIC ACCIDENT PREVENTION PLAN.....	5-1
6.	REFERENCES	6-1
APPENDIX A—FIGURES		
APPENDIX B—DATA QUALITY OBJECTIVE WORKSHEETS AND MEASUREMENT QUALITY OBJECTIVES		
APPENDIX C—TPP MFR Worksheets		
APPENDIX D—LOGS AND FORMS USED DURING THE SITE INSPECTION		

LIST OF TABLES

<u>Number</u>	<u>Title</u>
2-1	Potential Risk From Munitions and Explosives of Concern (MEC)
2-2	Points of Contact
3-1	MEC Type and Composition
4-1	Sampling Location Descriptions
4-2	Sample Identification Table
4-3A	Analytical Parameters, Methods, Standards, and Total Number of Soil Analyses
4-3B	Analytical Parameters, Methods, Standards, and Total Number of Sediment Analyses
4-3C	Analytical Parameters, Methods, Standards, and Total Number of Surface Water Analyses
4-3D	Analytical Parameters, Methods, Standards, and Total Number of Groundwater Analyses
5-1	Emergency Contact Information

LIST OF FIGURES (See Appendix A)

<u>Number</u>	<u>Title</u>
1	General Installation Map
2	Historical Aerial (1978)
3	Historic Site Layout
4	Potential Ordnance Impact Areas
5	Soils Map
6	Wetlands and Water Bodies
7	Topography
8	Proposed Sampling Locations
9	Proposed Geophysical Reconnaissance Areas
10	Project Schedule
11	Working Draft Conceptual Site Model

LIST OF ACRONYMS AND ABBREVIATIONS

ABIH	American Board of Industrial Hygiene
Alion	Alion Science and Technology Corporation
AOC	Area of Concern
APP	Accident Prevention Plan
APR	Air Purifying Respirator
°C	Degrees Celsius
CAS#	Chemical Abstracts Service Number
CENAB	Corps of Engineers North Atlantic Baltimore
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHE	Chemical Warfare Material Hazard Evaluation
CIH	Certified Industrial Hygienist
CONUS	Continental United States
CPR	Cardiopulmonary Resuscitation
CSM	Conceptual Site Model
CX	Center of Expertise
DC	Design Center
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
DNT	Dinitrotoluene
DoD	Department of Defense
DQO	Data Quality Objective
EA	EA Engineering, Science, and Technology, Inc.
EDS	Environmental Data Services, Inc.
EHE	Explosive Hazard Evaluation
ERM	ERM-Northeast, Inc
EM	Engineering Manual

LIST OF ACRONYMS AND ABBREVIATIONS

EOD	Explosive Ordnance Disposal
EP	Engineer Pamphlet
EPA	U.S. Environmental Protection Agency
EPP	Environmental Protection Plan
ER	Engineering Regulation
ERA	Ecological Risk Assessment
ERM	ERM-Northeast, Inc.
eV	Electron Volts
°F	Degrees Fahrenheit
ft	Foot or Feet
ft/day	foot per day
FTL	Field Team Leader
FUDS	Formerly Used Defense Site(s)
GE	General Electric
GIS	Geographic Information Systems
GPL	GPL Laboratories, LLP
gpm	gallons per minute
GPS	Global Positioning System
GSA	General Service Administration
GW	Groundwater
HFA	Human Factors Applications, Inc.
HHE	Health Hazard Evaluation
HHRA	Human Health Risk Assessment
HMX	Octohydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
HRS	Hazard Ranking System
HTRW	Hazardous Toxic and Radiological Waste
ID	Identification
IDW	Investigative-Derived Waste

LIST OF ACRONYMS AND ABBREVIATIONS

IGD	Interim Guidance Document
in.	Inch(es)
INPR	Inventory Project Report
lb	Pound(s)
LEL	Lower Explosive Limit
LFTCEDC	Luther Forest Technology Campus Economic Development Center
LSR	Literature Search Report
m	Meter(s)
MC	Munitions Constituents
MCL	Maximum Contaminant Levels
MD	Munitions Debris
MDL	Method Detection Limits
MEC	Munitions and Explosives of Concern
mg/kg	milligram per kilogram
mi	Mile(s)
mi ²	Square Mile(s)
mm	Millimeter(s)
MM	Military Munitions
MMRP	Military Munitions Response Program
MPPEH	Material Potentially Presenting an Explosive Hazard
mph	Miles Per Hour
MQO	Measurement Quality Objective
MRA	Munitions Response Area
mrem/yr	millirem per year
MRFA	Malta Rocky Fuel Area
MRS	Munitions Response Site
MRSP	Munitions Response Site Prioritization Protocol
MS	Matrix Spike
MSD	Matrix Spike Duplicate

LIST OF ACRONYMS AND ABBREVIATIONS

N/A	Not Applicable
NAD	North American Datum
NAEVA	North American Exploration of Virginia, Inc.
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDAI	No Department of Defense Action Indicated
NPL	National Priorities List
NYSASDA	New York State Atomic and Space Development Authority
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSTAGM	New York State Technical Administrative Guidance Memorandum
OVA	Organic Vapor Analyzer
oz	ounce(es)
PCB	Polychlorinated biphenal
P.E.	Professional Engineer
PFSP	Programmatic Field Sampling Plan
PGM	Program Manager
PM	Project Manager
PMQL	Preferred Maximum Method Quantitation Limits
ppb	Parts per Billion
PPE	Personal Protective Equipment
ppm	Parts per Million
PQAPP	Programmatic Quality Assurance Project Plan
PRG	Preliminary Remediation Goal
PSAP	Programmatic Sampling and Analysis Plan
PWP	Programmatic Work Plan
PWS	Performance Work Statement
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control

LIST OF ACRONYMS AND ABBREVIATIONS

RAC	Risk Assessment Code
RBC	Risk Based Concentration
RDX	Hexahydro-1,3,5-trinitro-1,3,5-triazine
RI/FS	Remedial Investigation and Feasibility Study
ROD	Record of Decision
RSO	Radiation Safety Officer
SD	Sediment
SEDC	Saratoga Economic Development Corporation
SI	Site Inspection
SS	Surface Soil
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
SVOC	Semi-Volatile Organic Compound
SW	Surface Water
T&E	Threatened and Endangered
TAL	Target Analyte List
TBD	To Be Determined
TCE	trichloroethylene
TCL	Target Compound List
TCRA	Time Critical Removal Action
TNT	Trinitrotoluene
TPP	Technical Project Planning
U.S.	United States
USACE	U.S. Army Corps of Engineers
USAESCH	U. S. Army Engineering and Support Center, Huntsville
USDA	U. S. Department of Agriculture
USGS	U. S. Geological Survey

LIST OF ACRONYMS AND ABBREVIATIONS

UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance
VDS	Validation of Detection Systems
VOC	Volatile Organic Compound
µg/L	micrograms per liter
µrem/hr	microrems per hour

GLOSSARY OF TERMS

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)—Also known as “Superfund,” this congressionally enacted legislation provides the methodology for the removal of hazardous substances resultant from past / former operations. Response actions must be performed in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (USACE 2003).

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.

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.

Formerly Used Defense Site (FUDS)—Locations that were owned by, leased to, or otherwise possessed by the Department of Defense (DoD) are considered FUDS. A FUDS is eligible for the Military Munitions Response Program if the release occurred prior to October 17, 1986; the property was transferred from DoD control prior to October 17, 1986; and the property or project meets other FUDS eligibility criteria. The FUDS Program focuses on compliance and cleanup efforts at FUDS (USACE 2004a).

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.

GLOSSARY OF TERMS

Military Munitions—Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives, and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges; and devices and components thereof.

The term does not include wholly inert items; improvised explosive devices; and nuclear weapons, nuclear devices, and nuclear components, other than nonnuclear 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 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.

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

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

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))

GLOSSARY OF TERMS

Unexploded Ordnance (UXO)—Military munitions that (A) have been primed, fused, 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

1.0.1 This Site-Specific Work Plan Addendum (SS-WP) has been prepared to document the Site Inspection (SI) activities to be conducted at the Malta Test Station in accordance with the Military Munitions Response Program (MMRP). The SI at the Malta Test Station falls under the purview of the Defense Environmental Restoration Program (DERP) for Formerly Used Defense Sites (FUDS) and the specific FUDS project number is C02NY089802. 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 final PWP, dated October 2005, was approved by the U.S. Army Corps of Engineers (USACE) for use in conducting SIs at multiple sites. The reader is directed to the PWP (Alion 2005) for additional detail regarding general SI plans and procedures. This addendum provides site-specific plans, objectives, and procedures for conducting the SI at the Malta Test Station.

1.1 Project Authorization

1.1.1 Alion Science and Technology Corporation (Alion) has been contracted by the U. S. Army Engineering and Support Center Huntsville (USAESCH) to perform an SI at the Malta Test Station site. 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 has transferred management of the contract to the U.S. Army Corps of Engineers North Atlantic Baltimore (CENAB). CENAB works with USAESCH on this project.

1.1.2 The work under this task order is being completed by Alion and Human Factors Applications, Inc. (HFA), a wholly owned subsidiary of Alion Science and Technology Corporation, along with Alion's subcontractors EA Engineering, Science, and Technology, Inc. (EA); and North American Exploration of Virginia, Inc. (NAEVA); and GPL Laboratories, LLLP (GPL), collectively known as the Alion Team.

1.2 Project Scope and Objectives

1.2.1 The project objective is to conduct an SI at the Malta Test Station to determine whether the site warrants further response action or No Department of Defense Action Indicated (NDAI) 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 Engineer Regulation (ER) 200-3-1 (USACE 2004), 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 2004), this SI is a screening level assessment to determine presence/absence of MEC and MC, i.e., this SI is not a full-scale study of the nature and extent of MEC or MC hazards screening. Further project response actions, if required, will be conducted as a CERCLA response action.

1.2.2 The project objectives of this SI are as follows:

- Determine the presence/absence of MEC/MC.
- Eliminate from further consideration those releases that pose no significant threat to public health or the environment by collecting adequate samples to assess the presence or absence of MEC/MC at the site.
- Determine the potential need for an emergency response action and/or Time Critical Removal Action (TCRA) of MEC by collecting data from previous investigations/reports, conducting site visits, and performing analog geophysical activities as necessary or as appropriate.
- Collect data, as appropriate, to determine if a release has occurred to confirm the need to transition the project into a Remedial Investigation and Feasibility Study (RI/FS).
- Collect additional data, as appropriate, for Hazard Ranking System (HRS) scoring that will be performed by the U.S. Environmental Protection Agency (EPA).

- Collect the additional data necessary to complete the Munitions Response Site Prioritization Protocol (MRSPP).

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

- Conduct a site visit of the Malta Test Station, as necessary, as a part of the historical information gathering process to locate site-specific data (associated reports and documents) as well as contact individuals familiar with operations at the site to augment existing knowledge of the site.
- Review available reports/data for the Malta Test Station to identify pathways, receptors, and potential data gaps.
- Prepare a read-ahead package for review by stakeholders to orient stakeholders to MMRP process, to present potential MEC hazards, and present proposed MC sampling locations.
- Initiate the Technical Project Planning (TPP) process to involve site owners and regulators (stakeholders) in a meeting or a series of meetings to establish/confirm project objectives and data needs required to: (1) Screen the property for releases that, if present, would trigger the RI phase of the CERCLA process; if releases are not present, the objective is to determine the data required to reach project closeout; (2) Develop/discuss Data Quality Objective (DQO) worksheets; (3) Prepare/discuss a preliminary “working draft” conceptual site model (CSM), which is used to identify the various MC and MEC pathways and potential receptors, and prioritize those of the highest interest (the CSM will be used to support plans for limited surface mapping for MEC, and in particular, the MC sampling areas where impacts are expected); (4) Obtain stakeholder consensus on planned field activities and document the results of the TPP meeting in the TPP Memorandum.
- Prepare a SS-WP (this document) that incorporates a review of existing information and any additional information obtained. This includes development of the Site-Specific MEC Field Investigation Plan (Section 3) and the Site-Specific MC Sampling and Analysis Plan (SS-SAP) (Section 4).

- Conduct site reconnaissance, anomaly avoidance, and MC sampling activities to assess the presence or absence of MEC and MC.
- Complete a comprehensive SI Report to document findings and provide recommendations. The SI Report will follow the Site Inspection Report Outline found in Appendix A of the Performance Work Statement (PWS) (found in Appendix A of the PWP [Alion 2005]). The narrative portion of the SI Report will provide, at a minimum, an executive summary; an introduction; a site description and regulatory history; the operational history and MEC/MC characteristics; and information pertaining to groundwater use, surface water, and terrestrial exposure, summary of results, completion of a Screening-Level Risk Assessment (which includes a human health risk assessment [HHRA] and ecological risk assessment [ERA]), completion of the MRSPP and HRS data collection, conclusions, and references.

1.2.4 As the PWP (Alion 2005) indicates, this task order for SI of MMRP sites does not require MEC intrusive/clearing activities. Furthermore, no TCRA or emergency response actions are within the SI scope. In the event that Material Potentially Presenting an Explosive Hazard (MPPEH), which includes Unexploded Ordnance (UXO), Discarded Military Munitions (DMM), Munitions Debris (MD), Range Related Debris, or Cultural Debris, is observed and the Alion Team cannot clearly identify the MPPEH as MD, Range Related Debris, or Cultural Debris, the Alion Team, in consultation with USACE, shall consider the site/area for a potential emergency response. An emergency response action may be initiated if there is a complete pathway between receptor and the source [confirmed MEC/UXO/DMM] and the situation is viewed as an “immediate and unacceptable hazard” to the local populace or site personnel. The Alion Team will adhere to the requirements of Engineer Pamphlet (EP) 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 2006a) for initiating an emergency response. Specific points of contacts for emergency response actions are further discussed in Section 2. The IGD includes the requirement to implement the following steps:

- The area will be flagged and Global Positioning System (GPS) coordinates obtained. The property owner will be notified of the hazard and advised to call the local emergency response authority. CENAB Project Manager (PM) will be notified.

- The property owner will be informed that if they do not call the local response authority within 1 hour, the UXO Technician will notify the local emergency response authority.
- The local response authority will decide on whether or not to respond to the reported incident. The local authorities are authorized 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 and provide accurate location information to the emergency response authority.

1.2.5 As previously discussed, the primary project objective to be completed during the SI for MMRP is to determine whether the Malta Test Station site warrants further response action under the CERCLA or NDAI designation is appropriate. A determination of NDAI or RI/FS for an MMRP project will address MEC/MC issues at a site and this determination does not address potential hazardous, toxic, and radioactive waste (HTRW) issues which may exist at the property. Potential HTRW concerns identified during SI activities will be documented and the information will be provided to USACE for determination of future action. In addition, if a determination of NDAI is made, and MEC/MC contamination is discovered at a later date, an MMRP project may be re-opened by USACE.

1.3 Technical Project Planning Summary

The TPP Meeting for the Malta Test Station was conducted on 23 May 2006 at the site of the Malta Test Station, presently known as the Luther Forest Technology Campus, in Saratoga Springs, New York. The Final TPP Memorandum documenting the meeting was issued in July 2006 (Alion 2006). The meeting participants included representatives from the CENAB, USACE New York District, the Luther Forest Technology Campus Economic Development Corporation (LFTCEDC), the New York State Department of Environmental Conservation (NYSDEC), Wright Malta Corporation, the New York State Energy Research and Development Authority (NYSERDA), C.T. Male Associates, Continental Placer Inc., the Saratoga Economic Development Corporation (SEDC), New York State Department of Health (NYSDOH), and the Alion Team. The participants in the TPP discussed the results of previous investigations, historical aerial photographs, the CSM, and DQOs. The TPP participants concurred with the technical approach for the planned SI activities discussed during the TPP as documented in the TPP memorandum. More specific details of the TPP Meeting are contained in the Final TPP

Memorandum (Alion 2006). Information obtained from the TPP has been incorporated into this SS-WP and the TPP worksheets have been revised (included with this SS-WP).

1.4 Work Plan Organization

This SS-WP covers the inspection and all associated preparations necessary for SI activities at the Malta Test Station. Refer to the PWP (Alion 2005) for additional detail regarding general SI plans and procedures. This SS-WP is organized as follows:

Section 1	Introduction
Section 2	Project Description and Project Management Plan
Section 3	MEC Field Investigation Plan
Section 4	MC Sampling and Analysis Plan
Section 5	Accident Prevention Plan
Section 6	References
Appendix A	Figures
Appendix B	Data Quality Objective Worksheets and Measurement Quality Objectives
Appendix C	TPP MFR Worksheets
Appendix D	Logs and Forms used during the Site Inspection.

2. PROJECT DESCRIPTION AND PROJECT MANAGEMENT PLAN

2.1 Project Location

2.1.1 The Malta Test Station, FUDS Project No. CO2NY089802 is located on a square parcel of approximately 165 acres (USACE 1980) in the towns of Malta and Stillwater, Saratoga County, New York, approximately 1.5 miles (mi) south of Saratoga Lake and 2 mi northeast of Round Lake (Figure 1). This site falls under the geographical jurisdiction of the USACE New York District.

2.2 Site Description

2.2.0.1 The Malta Test Station was established in 1945 by the DoD and was used as a research and development facility for rockets and weapons testing for more than 50 years. The U.S. also acquired a perpetual easement of 1,800 acres over a circular area around the station. The testing involved the use of carbon tetrachloride and trichloroethylene (TCE) as solvents and degreasers. The site is comprised of 33 buildings, multiple rocket test stands, concrete quench pits, leach fields, septic tanks, dry wells, storage areas, disposal areas, and an artificial pond (ERM 1995). General Electric Company (GE) served as the contractor/operator of the facility for the duration of DoD ownership of the site which began in 1945 and ended in 1964. The entire property, including the 1,800 acre easement, was reported excess to the General Services Administration and conveyed to the New York State Atomic and Space Development Authority (NYSASDA). This easement no longer exists. The deed prohibited human habitation and hunting in the area.

The site includes ten main areas of evaluation based on past operations at the site (Figure 3). These ten areas are the Control Station Area, Fuel Test Area, Firing Range, Gas Storage Area, Powder Storage Area, Ram Jet Area, Range Pond Area, Test Structure Area, Test Pit Area, and Fuel Magazine Area (Kazyaka 2006). Each of these areas will be evaluated for MEC and MC concerns as part of this SI.

2.2.1 Topography

2.2.1.1 The topography of the Malta Test Station area is characterized by gently rolling hills with elevations ranging from 300 to 350 feet (ft) above mean sea level. Several ravines are present along the southwestern boundary of the site with elevations dropping to 250 ft above mean sea level in the ravines. Much of the topography onsite has been disturbed by earth moving and

construction activities associated with the site buildings and testing facilities. A small hill and valley remain within the site boundary, extending across the center of the site in a northeast-southwest orientation (Figure 7). The small valley contains Muggett's Pond and Muggett's Pond Drainage Ditch (ERM 1995).

2.2.2 Climate and Vegetation

2.2.2.1 The climate in the Malta Test Station region is characterized by long winters and short summers with average temperatures in the area ranging from 24 degrees Fahrenheit (° F) (-4.4 degrees Celsius [°C]) in January to 72° F (22.2°C) in July. The mean annual temperature in the area is 48° F (8.9°C). The average annual rainfall in the vicinity of the site is 37 inches (in.) and the average annual snowfall is 63.8 in. with the ground remaining frozen from late November to early March (ERM 1995).

2.2.2.2 Winds in the Malta Test Station area are predominantly from the west and northeast between the months of January and April and predominantly from the south between the months of May and December. Wind speeds in the area are highly variable and range between 10 miles per hour (mph) to 20 mph with the stronger winds occurring November through May (ERM 1995).

2.2.3 Geology and Soils

2.2.3.1 The Malta Test Station is underlain by a series of unconsolidated deposits including aeolian sands, lake sands, lake silty sands, and lake clays and silts. The aeolian deposits vary in thickness from 0 to 14 ft and are underlain by a series of glacio-lacustrine deposits varying in thickness from 30 to 60 ft. Below the lucustrine sands lies a layer of 30 to 40 ft thick lucustrine sand and silt which differs from the lucustrine sands by a higher silt composition and the presence of clay lenses. Underlying the lucustrine sand and silt is a layer of lucustrine blue-gray clay and silt extending to a depth of approximately 140 ft below ground surface. Below the blue-gray clay and silt lies a lucustrine blue-clay layer and gray clay layer extending to an approximate depth of 250 ft below ground surface. Underlying the clay layers is a dense glacial till deposit extending to an approximate depth of 275 ft below ground surface, which lies directly above the Canajoharie Shale bedrock. The bedrock consists of blue-black to gray shale ranging from several feet to several in. thick and containing thin layers of sandstone (ERM 1995).

2.2.3.2 Surface soils in the area of the Malta Test Station are aeolian deposits consisting of Colonie Silty Sand. This soil is generally deep, homogenous, and moderately well to well drained throughout the site (ERM 1995).

2.2.4 Hydrology

2.2.4.1 Several artificial water bodies are present at the Malta Test Station including three quench pits associated with testing facilities and Muggett's Pond located in the center of the site. Muggett's Pond is a small man-made pond (approximately 50 ft by 60 ft) that contains water throughout the year (ERM 1995). The concrete quench pits are located at Building 3, Building 4, and Building 25 and also contain water throughout the year. There are four storm water retention basins without standing water and two dry, unused lagoons present at the site. Adjacent to the site are several streams/ravines.

2.2.4.2 Surface water runoff at the Malta Test Station is expected to flow towards Muggett's Pond, the four storm water retention basins, two dry lagoons, three quench pits, and/or a low area between Building 24 and Area D-1 (ERM 1995).

2.2.4.3 Atmospheric precipitation is the source of all groundwater at the Malta Test Station. There is one water supply system in proximity to the site. This existing water supply is known as Saratoga Water Services. The system has two sources of groundwater, the Knapp Road Well Field to the south of the site, and the Cold Spring Road Well Field to the north of the site. The groundwater in the area generally lies 15-25 ft below grade, but can be deeper in some areas. Residential consumers in the area are supplied by one of the systems located in a deep (200-400 ft), highly permeable aquifer. During the 1995 remedial investigation (RI) (ERM 1995), both aquifers and the supply system were determined to be disconnected hydrogeologically from any groundwater contamination at the site (ERM 1995, C.T. Male 2006).

2.2.4.3 The site contains at least two private water wells that serve the LFTCEDC. Forty-eight existing wells (monitoring and production) are present on the site. Pumping tests for the two active wells indicate that the wells can yield 30 gallons per minute (gpm). In general, in the shallow glacio-lacustrine deposits, groundwater flows to the west with an average hydraulic conductivity of 4.27 foot per day (ft/day). In deeper lake silt and sand deposits, a southeast to northwest groundwater divide results in westerly and northerly flows with an average hydraulic conductivity of 3.10 ft/day (ERM 1995).

2.3 Site History

2.3.1 The Malta Test Station was established on a 165 acre tract of land in the towns of Malta and Stillwater, New York by the United States (U.S.) Government in 1945 (Figure 2). The Test

Station was owned and operated by various agencies of the U.S. Government for a variety of rocket and weapons testing and for space research activities from 1945 to 1964. During this time, and for the duration of the DoD ownership, GE was contractor-operator of the approximately 25 structures on site. Several other companies, acting as contractors to the U.S. Government, have utilized portions of the facility including: Wright-Malta Corporation, Exxon Nuclear Company, Inc., Curtis-Wright Corporation, Olin Corporation, Advanced Nuclear Fuels, Iso-Nuclear Corporation, Gamma Processing Company, MTI, and PTI. The use of Malta Test Station was granted to the U.S. Air Force by permit from October 1955 to 30 June 1960 and the National Aeronautics and Space Administration (NASA) used the site to simulate re-entry conditions for space vehicles in 1960 (USACE 1980).

2.3.2 The property of the Malta Test Station was reported excess to the General Service Administration (GSA) on 25 November 1960. GSA conveyed the 165.36 acre in fee to the New York State Atomic and Space Development Authority (NYSASDA), now known as New York State Energy Research and Development Authority (NYSERDA), by quitclaim deed dated 4 February 1964. This deed prohibited human habitation and hunting with the right to remove buildings used for human habitation and to post signs indicating the nature and extent of control over the easement. NYSASDA was succeeded by the New York State Energy Research Development Authority (NYSERDA) (USACE 1980).

2.4 Current Use and Projected Land Use

2.4.1 LFTCEDC is the current owner of the approximately 165-acre site. LFTCEDC, plans to develop the Malta Test Station site into a technology campus (Alion 2006). An initial activity of the new development is the installation of high voltage power lines (Figure 3).

2.5 Previous Investigations of the Site

2.5.1 1980 Inventory Project Report (INPR), amended 2005

The USACE New York District completed an Inventory Project Report (INPR) for Malta Test Station in 1980, which was later amended in 2005. The site was determined to be formerly used by the Department of the Army for the research, development, and testing of rocket engines and fuels. The signed Findings and Determination of Eligibility concluded that the site consisted of 165.36 acres, was used from 1945 to 1964, and was eligible for restoration under the purview of DERP FUDS. A project, DERP FUDS Project No.C02NY089800, was proposed to address the remaining ordnance hazards at the site (USACE 1980). An amendment to the INPR for the

Malta Test Station was recommended to evaluate the potential for munitions and explosives of concern and/or munitions constituents at the site. Based on the review of the Site Survey Summary Sheet and other available records, the potential for the presence of MEC exists at the site. A site inspection was recommended in accordance with the protocol of MMRP to evaluate the potential for the presence of MEC/MC (USACE 2006a). In a Memorandum dated 8 February 2006, a MMRP project was granted to perform an SI at Malta Test Station. A preliminary Risk Assessment Code (RAC) of 2 was assigned to the site 16 August 2003 (USACE 1980). RAC scores indicate 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.

2.5.2 1989 Aerial Photo Analysis

The EPA Environmental Photographic Interpretation Center analyzed aerial photographs from 1952 through 1982 of the Malta Test Station Site per the request of the Superfund Branch of the EPA in 1989. The EPA divided the site into three separate areas which included the Test Station/Triangular Parcel, the former GE/Exxon Building, and Area D-3. The analysis concluded that there was evidence of the presence of tanks, drums, standing liquid, stains, waste/drum burial, fill areas, excavations, an open burning pit, and an impoundment on site (ERM 1995).

2.5.3 1992 Literature Search Report

A Literature Search Report (LSR) was completed for the Malta Test Station Site in 1992. The report contains a culmination of 26 environmental-related investigations conducted by 16 different companies or government agencies at the site from 1977 through 1992. The LSR includes interviews of present/ Malta Test Station personnel, a summary of the chemicals used and detected, and a summary of activities by building/area (ERM 1995).

2.5.4 1995 Remedial Investigation (RI) Report and Ongoing Feasibility Study

2.5.4.1 An RI was completed for the Malta Test Station by ERM-Northeast, Inc. (ERM) in February 1995. The objective of the RI was to assess the nature and extent of constituents present in the environment originating from past site activities, conduct a risk assessment, and evaluate and select appropriate cleanup activities, if necessary. A comprehensive field investigation was conducted between 1991 and 1994. During the course of the RI, a total of 48 distinct area of the site were investigated by collecting samples from various media (soil, surface water, sediment, and groundwater) analyzed for Target Compound List/Target Analyte List (TCL/TAL) plus Boron, a radiation survey in the former GE/Exxon Nuclear building,

geophysical surveys to identify locations of possible buried metal at 19 areas on site, and soil gas surveys at 46 areas to evaluate the extent of Volatile Organic Compounds (VOCs) in shallow soil, a dry well investigation from 23 dry well features (dry wells, catch basins, floor drains, a swale and an open sump), and a septic tank investigation. The groundwater investigation included the installation of 30 monitoring wells to supplement the existing network of 18 monitoring wells already on site. During the RI, 108 soil samples, 254 shallow subsurface soil samples, three deep subsurface soil samples, 17 surface water samples, 17 sediment/soil samples, and 43 groundwater samples were analyzed for TAL metals and were validated under USEPA Region 2 validation requirements (ERM 1995, EPA 1999).

2.5.4.2 As part of the 1994 RI, ERM developed media-specific Malta Rocket Fuel Area (MRFA) Comparative Criteria for data comparison. The MRFA Criteria used a comparison of maximum background concentrations (statistically derived for soil from validated soil sampling results); available regulatory standards, guidance values, and criteria; and health-based criteria. These MRFA criteria referred to in the RI as Health-based comparative criteria were developed for VOCs, Semi-Volatile Organic Compounds (SVOCs), and inorganic analytes. Specifically, MRFA Criteria were only developed for twenty-one of the twenty-five inorganic analytes. Health-based comparative criteria were not calculated for the remaining four inorganic analytes (barium, beryllium, cobalt, and selenium) because the MRFA RI analytical results showed that these inorganic analytes were either not detected, were detected at concentrations below the 1992 New York State Technical Administrative Guidance Memorandum (NYSTAGM)¹ value, or were below the maximum statistical background concentration in all of the soil samples collected. For the inorganic data, if the calculated health-based comparative criteria for an inorganic analyte exceeded both the NYSTAGM value and the maximum statistical background concentration, then the health-based comparative criteria was used for the MRFA Comparative Criteria. It is also noted that no criteria were developed for molybdenum, strontium, titanium, and zirconium. These metals are not expected to be associated with MEC formerly used at the site (ERM 1995, EPA 1999).

1 The New York State Technical Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Clean-up Levels (NYSTAGM) (NYSDEC, 1992 values for inorganic analytes and organic compounds in the soil were considered under this first category (i.e., regulatory guidance). If a specific inorganic analyte did not have a NYSTAGM value, then the maximum statistical background concentration was used. No statistical analysis was performed for organic compounds in soil because either no background organic compound data was available or the analytical results (SVOCs in surface soil only) were below the NYSTAGM values. The NYSTAGM values and maximum statistical background concentrations were then compared to the calculated health-based comparative criteria (ERM 1995).

2.5.4.3 The MRFA Comparative Criteria were developed to assess the significance of the RI analytical data and identify which areas potentially required further investigation. These Criteria were not intended as cleanup goals or preliminary remediation goals (PRGs); rather, ERM reported the criteria as “a level of environmental quality above which further characterization and potential risk evaluation may be warranted.” The MRFA criteria were used to establish the baseline level of metals in the Malta Test Station area (ERM 1995, EPA 1999).

2.5.4.4 The RI determined that the depth to groundwater at the site ranged from 15 to 55 feet below the land surface. The water supply system onsite consists of two active production wells that began being treated by an air stripper in January 1987. Groundwater samples collected during the RI confirmed the presence of VOCs above federal drinking water standards. The RI indicated that the ground water plume, defined by 5 ppb isoconcentration contour for carbon tet and trichloroethylene (TCE), was well within the safety easement established for the site. Carbon tet and TCE were detected near the center of the site at maximum concentrations of 220 ppb and 280 ppb, respectively, compared to their Maximum Contaminant Levels (MCLs) of 5 ppb. The ground water and surface water samples collected at the site show that the VOC concentrations were generally steady and decreasing, which suggested that the plume is not migrating in the subsurface into uncontaminated areas under current ground water flow conditions (ERM 1995, EPA 1999).

2.5.4.5 The results of the sampling were used to complete a Human Health Risk Assessment and Ecological Risk Assessment for the site. The risk assessments indicated unacceptable concentrations of polychlorinated biphenyls (PCBs) in soil at Building 23P area (where lead also was detected) and mercury in the soil at the Muggett’s Pond Drainage Ditch Intersection (ERM 1995). Cleanup goals of 10 ppm of PCBs in the surface soil (top one foot) and 25 ppm in the subsurface soil (below one foot), 1,000 ppm of lead at the Building 23P area, and 2 ppm of mercury at the Building 23P area were established. Although the risk due to groundwater contamination falls within acceptable risk range the EPA Record of Decision (ROD) calls for the treatment of the Malta Test Station water supply to MCLs and monitoring of natural attenuation and degradation processes until the groundwater plume attains MCLs (ERM 1995, EPA 1999).

2.5.4.6 Several response actions were performed concurrent with the RI in accordance with EPA-approved work plan, including: 1) decommissioning and removal of two compressed gas cylinders; 2) excavating and recycling 560 empty, buried, crushed drums; 3) cleaning out several septic tanks, catch basins, and dry wells; 4) cleaning out a sump; and 5) disposal of investigation-derived waste generated during the RI. The FS report evaluated in detail five remedial

alternatives to address ground water contamination and four remedial alternatives to address soil contamination at the site (ERM 1995, EPA 1999).

2.5.5 1999 Superfund Preliminary Site-Closeout Report

2.5.5.1 The EPA issued an Administrative Order to eight potentially responsible parties for the performance of a remedial investigation and feasibility study (RI/FS). Following the issuance of EPA's Record of Decision in July of 1996, a Consent Decree was signed in September 1997 by settling federal agencies and seven defendants for performance of remedial design and remedial design action. GE is identified in the Consent Decree as the performing party responsible for implementation of the remedy selected in the ROD (EPA 1999).

2.5.5.2 The major components identified by the EPA are the following (EPA 1999):

- Continued pumping of the Test Station water supply wells and treatment of the water by air stripping to provide an acceptable drinking water supply for the Test Station employees, which may be accomplished using the existing air stripper. Continued monitoring of the influent and effluent of the air stripper in accordance with New York State requirements to ensure that it effectively treats the onsite water supply to federal MCLs, or if more stringent, New York State drinking water standards.
- Natural attenuation and degradation of VOCs in groundwater that are not captured by the pumping wells until the groundwater attains federal MCLs, or if more stringent, New York State drinking water standards.
- Monitoring of surface water and groundwater to ensure that off-site groundwater users are not impacted by contamination from the site, that contaminated groundwater does not migrate into uncontaminated areas (i.e., that the groundwater plume is contained), and that the natural attenuation and degradation processes are restoring the groundwater to the cleanup standards. The existing surface water and groundwater sample locations may be modified as necessary to meet the objectives of this monitoring program.
- Excavation of contaminated soil at the Building 23P area at a depth of one foot or less having a concentration of greater than 10 ppm of PCBs, soil at depth below one foot having a concentration of greater than 25 ppm of PCBs, and soil at any depth with a concentration of lead of greater than 1,000 ppm.
- Excavation of contaminated soil at the Muggett's Pond Drainage Ditch Intersection at any depth with a concentration of greater than 2 ppm of mercury.

- Backfilling of excavations in the Building 23P area and at Muggett's Pond Drainage Ditch Intersection with clean fill material, grading to blend with the surrounding areas, and revegetation.
- Transportation of the excavated soil from the Building 23P area and Muggett's Pond Drainage Ditch Intersection and disposal off-site at an appropriate EPA-approved facility, consistent with RCRA regulations and all other applicable or relevant and appropriate requirements.
- Implementation of institutional controls, which may include new deed restrictions, to prevent ingestion of contaminated groundwater, to restrict withdrawal of groundwater within the vicinity of the plume that could adversely impact groundwater remediation, and to restrict the Test Station to its current commercial/industrial land use.
- Evaluation of site conditions at least once every five years to ensure that the remedy is protective of human health and the environment.

2.5.5.3 The following Remedial Design and Remedial Action took place at the Malta Test Station as per the ROD (EPA 1999):

- Approximately four cubic yards of soil was excavated from the Building 23P area on July 1998 and was backfilled with clean fill material. Six post-excavation soil samples were collected from the excavation site and were analyzed for PCBs and lead. All of the samples contained less than 10 ppm of total PCBs and less than 1,000 ppm of lead, and thus met the cleanup criteria specified in the ROD (EPA 1999).
- Soil was excavated from the concrete trough at the Muggett's Pond Drainage Ditch Intersection and surrounding areas in July 1998. Nine post-excavation samples were collected in the excavation area, six of which had concentrations of mercury greater than the 2 ppm cleanup criteria specified in the ROD. Additional soil excavation was conducted in September 1998 to the nearest RI sampling locations that were known to be below the 2 ppm cleanup goal. Approximately 62 cubic yards of soil were excavated in this area and were backfilled with clean fill material, including visible elemental mercury in the soil and debris.

2.5.6 2006 Environmental Assessment

2.5.6.1 A Phase II Environmental Site Assessment (ESA) was conducted at the Malta Test Station by C.T. Male and Associates, P.C. (C.T. Male) in April 2006 as requested by the LFTCEDC. The purpose of the assessment was to further evaluate and identify potential or known sources of hazardous wastes, hazardous substances, and/or chemical or petroleum contamination relative to underground storage tanks, surface water bodies, and to determine the

quality of site soil and groundwater in the area of building 24. The data collected during the assessment were used to establish a baseline condition at the time Wright Malta Corporation vacated the subject property and to establish future protocols for abandoning structures. The assessment included a subsurface and tank investigation, excavation of test pits, six soil borings (three converted to micro-monitoring wells), collection of soil samples for VOC vapor screening, and the collection and analysis of tank contents, groundwater samples, surface water samples, a sediment sample and a soil sample for TCL of VOCs, SVOCs, and TAL metals laboratory analysis (C.T. Male 2006).

2.5.6.2. The assessment confirmed the existence of six underground storage tanks on site with varying degrees of product. An active spill with contaminated soil was encountered at the manways of two tanks in the tank farm area. The PID soil screening results of the soil samples from borings at Building 24 did not indicate the presence of VOC vapors. Laboratory analysis of the soil samples did not detect VOCs or SVOCs above the laboratory method detection with the exception of p-Isopropyltoluene which was detected at a level slightly higher than its NYSDEC recommended cleanup value (C.T. Male 2006).

2.5.6.6 Various metals were detected in the surface water samples in Muggett's Pond and the Building 20 pond. Several metals exceeded surface water standards or guidance values including aluminum, cobalt, iron, and manganese in Muggett's Pond and antimony in the Building 20 pond. All metals detected were generally less than or within an order of magnitude of the surface water standard. Various metals were detected in the sediment sample collected at Muggett's Pond, but did not exceed soil cleanup objective values, except for mercury, iron, and zinc. Mercury and iron were found within background levels typical for the Eastern United States and zinc was found just above these levels. All metals detected were generally less than or within an order of magnitude of the cleanup objective values. Metals were also detected in the soil samples collected from borings at Building 24. All metals detected were within the soil cleanup objective values except for copper, iron, magnesium, mercury, nickel, and zinc. Copper, iron, nickel, and zinc were found within background levels. The magnesium and mercury were found above background values at isolated locations at the site. Mercury, iron, and zinc were generally less than or within an order of magnitude of the cleanup objective values. Various metals were detected that exceeded groundwater standards or guidance values from the micro monitoring wells at Building 24 including beryllium, chromium, copper, iron, magnesium, manganese, nickel, and lead. Cobalt and Vanadium were found above surface water standards. These metals were generally less than or within an order of magnitude of the groundwater standards, surface water standards, or guidance values and according to C.T. Male may be attributed to suspended solids present in the groundwater samples (C.T. Male 2006).

2.6 Initial Summary of Risk from Munitions and Explosives of Concern and Munitions Constituents

2.6.1 Previous investigations and information pertaining to the historical use of the site were reviewed to assess whether MEC/MC is likely to be present at the site (USACE 1980; ERM 1995). Conventional munitions were used at Malta Test Station from 1945 to 1964. The site was used for a variety of rocket and weapons testing throughout its history. As a result of these operations, MEC could remain on the site grounds. Likely media where MC may be present include soil, sediment, surface water, and groundwater in the area of the range pond, former test pits, fuel storage magazines, Muggett's Pond, drainage ditches, ram jet lab, fuel test area, gas storage, chemical test pit, powder storage, pump test area, and test structures. Further discussion can be found in Section 3.5.1 Identification of Areas of Concern.

2.6.2 The current Malta Test Station Site Manager, Ray Kazyaka, provided the Alion Team with a map designating potential ordnance impact areas at the site, as shown in Figure 4 (2006). Mr. Kazyaka also was the prior Site Manager at the Malta Test Station under the prior ownership of Wright-Malta Corporation. Mr. Kazyaka indicated during the TPP site walk and in the review of this SS-WP that 105 mm ammunition boxes, 90 mm projectiles, 120 mm projectiles, 155 mm projectiles, Black powder, Bismuth and liquid propellants (HAN and OTTO) have been found in the area of the fuel storage magazines in the past.

2.6.3 MEC was found in several areas at Malta Test Station while digging test pits for the 1995 RI/FS. Several artillery shells were found within the top eight ft of soil in test pits P-2, P-27, P-28, P-29, and P-33 in the area of the firing range pond. The munitions found included 18 in. artillery shells and casings, and several other unspecified artillery shells. Four unspecified artillery shells were found in the area designated D-2 (south east of the firing range pond) during the RI/FS in test pit P-20. During the TPP site walk in May 2006 a 60 millimeter (mm) mortar and a potential 120 mm practice mortar were found partially buried on the road near the firing range pond.

2.6.4 The Malta Test Station was assigned a RAC of 2 due to the presence of conventional ordnance on the site. The 1995 RI indicated the existence of artillery shells in the firing range pond area and an individual with former knowledge of the site noted that there may be 105 mm and 90 mm projectiles buried on site (ERM 1995). A summary of site specific details is provided in Table 2-1.

Table 2-1. Potential Risk from Munitions and Explosives of Concern (MEC) (ERM 1995, Kazyaka 2006, Alion 2006)

Site Name	Range/Area Name	Acreage ¹	RAC Score ¹	Type Of Munitions	Munitions Identification (ID)
Malta Test Station	Malta Test Station	165.36	2	Conventional	• 120 millimeter (mm) Projectiles Full Range Practice • 155 mm Projectiles • 18 inch (in.) artillery shells • 105 mm to 152 mm tank guns • 105 mm to 155 mm Howitzers • 60 mm, 90 mm, and 150 mm recoiler rifles • Rocket Fuel • Hydrazine/hydrazine nitrate liquid monopropellants

2.7 Project Organization

2.7.1 Technical, ordnance, and managerial personnel required to support the SI activities are provided from a pool of professional members of the Alion Team. Key positions include the Program Manager (PGM), Site-Specific PM, Task Managers, Field Team Leaders (FTLs), Chemical Quality Control (QC) Officer, Certified Industrial Hygienist (CIH), UXO Technician II/Technician III, and Geographic Information Systems (GIS) Manager. The roles and responsibilities of the key positions are described in the PWP (Alion 2005). The individuals selected to fill various positions and their qualifications are listed in Appendix H of the PWP (Alion 2005). Additional subcontractors (including laboratory), along with management procedures for management of subcontractors under the Alion Team, are further discussed in the PWP (Alion 2005).

2.7.2 Project Points of Contact for the Malta Test Station SI are outlined in Table 2-2. Project communication and reporting will be performed in accordance with the procedures outlined in the PWP (Alion 2005).

2.7.3 All field activities will be coordinated in advance of mobilization with LFTCEDC's Site Manager, Mr. Ray Kazyaka. The Alion Team will check in with Mr. Kazyaka daily. Mr. Kazyaka will provide the Alion Team access into the secured Malta Test Station during the conduct of field investigations.

Table 2-2. Local 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)	256-895-1174	P. O. Box 1600 4820 University Square Huntsville, AL 35807	Bradford.L.McCowan@hnd01.usace.army.mil	Military Munitions Response Program (MMRP) Site Inspection (SI) Program Manager
Robert Williams	U.S Army Corps of Engineers North Atlantic Baltimore (CENAB) Military Munitions (MM) Design Center (DC)	410-962-4006	City Crescent Building 10 S. Howard St. Baltimore, MD 21201	Robert.j.williams@nab02.usace.army.mil	MMRP SI Regional Program Manager
Leland Reeser	CENAB MM DC	410-962-2186	10 South Howard Street Room 10040D Baltimore, MD 21201	Leland.H.Reeser@nab02.usace.army.mil	MMRP SI Regional Program Manager
Gregory Goepfert	USACE New York District	917-790-8235	U.S. Army Corps of Engineers 190 State Highway 18, Suite 202, E. Brunswick, NJ 08816	Gregory.J.Goepfert@nan02.usace.army.mil	MMRP SI Geographic District Program Manager
Hamid Rafiee	CENAB	410-962-7546	City Crescent Building 10 S. Howard St. 10 th floor Baltimore, MD 21201	hamid.rafiiee@usace.army.mil	Design Team Leader
Paul Greene	CENAB MM DC	410-962-6741	City Crescent Building 10 S. Howard St. 10 th floor Baltimore, MD 21201	Paul.E.Greene@usace.army.mil	DC Safety Specialist

Table 2-2. Local Points of Contact					
NAME	ORGANIZATION	PHONE	ADDRESS	E-MAIL	PROJECT ROLE
Alan Warminski	CENAB MM DC	410-962-2179	USACE Baltimore District Attn: CENAB City Crescent Building 10 S. Howard St. 10 th floor Baltimore, MD 21201	Alan.S.Warminski@usace.army.mil	DC Project Chemist
Roger Azar	Alion Science and Technology	301-399-7304	1000 Park Forty Plaza Suite 200 Durham, NC 27713	razar@alionscience.com	Contractor - Program Manager
Corinne Shia	Alion Science and Technology	703-259-5147	3975 Fair Ridge Drive Suite 125 South Fairfax, VA 22033	cshia@alionscience.com	Contractor – Deputy Program Manager
Bonnie Herring	Alion Science and Technology	919-406-2138 919-558-9218 (fax)	1000 Park Forty Plaza Suite 200 Durham, NC 27713	bherring@alionscience.com	Contractor - Contracts Administration
Scott Hemstreet	Alion Science and Technology/HFA	301-705-5044 919-549-0611	Alion Science and Technology 1000 Park Forty Plaza Suite 200 Durham, NC 27713	SHemstreet@hfactors.com	Operations Manager- Munitions and Explosives of Concern
Curtis Mitchell	Alion Science and Technology/HFA	301-399-7152	Alion Science and Technology 7730 Harborview Drive, Charlotte Hall MD, 20622	Rmitchell@hfactors.com	Contractor – Quality/Safety Manager and Unexploded Ordnance Technician
Timothy Reese	EA Engineering, Science, and Technology	410-538-8202 x101 410-935-3887 cell	15 Loveton Circle Sparks, MD 21152	treese@eaest.com	Contractor-Project Manager
Katie Drewett	EA Engineering, Science, and Technology	410-771-4950 x5342	15 Loveton Circle Sparks, MD 21152	kdrewett@eaest.com	Contractor-Project Technical Lead

Table 2-2. Local Points of Contact					
NAME	ORGANIZATION	PHONE	ADDRESS	E-MAIL	PROJECT ROLE
Daniel Hinckley	EA Engineering, Science, and Technology	410-771-4950 x 5149	EA Engineering 15 Loveton Circle Sparks, MD 21152	dhinckley@eaest.com	Contractor –Chemical Quality Control Officer
Kris Hoiem	EA Engineering, Science, and Technology	410-771-4950 x 5101	EA Engineering 15 Loveton Circle Sparks, MD 21152	khoiem@eaest.com	Contractor – Certified Industrial Hygienist
Bill Merrey	EA Engineering, Science, and Technology	410-771-4950 x 5159	EA Engineering 15 Loveton Circle Sparks, MD 21152	bmerrey@eaest.com	Contractor – Geographical Information Systems Manager
Suzanne Boltz	EA Engineering, Science, and Technology	410-771-4950 x 5143	EA Engineering 15 Loveton Circle Sparks, MD 21152	sboltz@eaest.com	Contractor – Cultural Resources
Paul Ioannides	GPL Laboratories, LLLP	301-694-5310	7210A Corporate Court Frederick, MD 21703-8386	ioannides@gplab.com	Analytical Laboratory General Manager
Lyn Benkers	STL Denver (Quality Assurance Lab)	303-736-0110	4955 Yarrow St. Arvada, CO 80002	lbenkers@stl-inc.com	Project Manager
Raymond Kayzaka	Luther Forest Technology Campus Economic Development Corporation (LFTCEDC)	518-587-0945	Saratoga Economic Development Corporation 28 Clinton Street Saratoga Springs, NY 12866-2191	RPKazyaka@aol.com	Site Manager
Jon Kelley	Luther Forest Technology Campus Economic Development Corporation (LFTCEDC)	518-587-0945	Saratoga Economic Development Corporation 28 Clinton Street Saratoga Springs, NY 12866-2191	jkelley@saratogaedc.com	Property Owner Representative

Table 2-2. Local Points of Contact					
NAME	ORGANIZATION	PHONE	ADDRESS	E-MAIL	PROJECT ROLE
CENAB	Corps of Engineers North Atlantic Baltimore District				
CX	Center of Expertise				
DC	Design Center				
MM	Military Munitions				
MMRP	Military Munitions Response Program				
SI	Site Inspection				
USACE	U.S Army Corps of Engineers				

2.7.3 The Alion SI Field Team for the Malta Test Station will be comprised of a three-person team, with each person qualified in their area of expertise. The Field Team will be led by the FTL. The FTL is the Task Manager and is knowledgeable of the historical and logistical details regarding the Malta Test Station site. The FTL will manage the Field Team and make decisions on behalf of Alion's Program Manager. The FTL will be supported by a Sampling Technician charged with implementing the MC sampling. The Field Team will also include an UXO Technician (II or III) tasked with ensuring all aspects of field safety as well as identification of MEC, DMM, or any MD encountered. The UXO Technician also will conduct the geophysical reconnaissance and ensure safe pathways to allocated sampling locations.

2.7.4 The Malta Test Station SI Field Team will be comprised of the following individuals:

- FTL, Katie Drewett
- UXO Technician, To Be Determined
- Sampling Technician, To Be Determined

2.8 Project Schedule

A project schedule for the Malta Test Station SI is presented in Figure 10, Appendix A. The project schedule includes proposed submittal dates, review times for stakeholders, expected field work dates, and reporting dates. The schedule will be updated, as necessary, to reflect current progress and anticipated activities. In accordance with contractual requirements, the SI is to be completed within 18 months from notice to proceed. The contractual completion date for this SI is October 2007.

3. MUNITIONS AND EXPLOSIVES OF CONCERN FIELD INVESTIGATION PLAN

3.1 Approach to Munitions Response Activities

3.1.1 The overall approach to munitions response activities is presented in the PWP (Alion 2005). As discussed in Section 2 of this document, isolated MEC findings at the site are attributed to past ordnance-related operations. Therefore, the technical approach, as defined during the TPP Meeting (Alion 2006), will focus on biased screening for the presence of MEC/MC in the highest potential likelihood contaminated areas (potential ordnance impact areas as per Ray Kazyaka). In addition, site reconnaissance will be employed to support a systematic justification for reduced Areas of Concern (AOC) for subsequent RI/FS investigation or NDAI. To begin this process the Munitions Response Area (MRA)² must be identified and then divided into Munitions Response Sites (MRSs)³. The MRA for Malta Test Station is the FUDS Boundary, as shown in Figure 1. The MRA has been further divided into one MRS (see Figure 1): MRS 1 – Malta Test Station (includes all operational facilities).

3.1.2 The MRS/MRA will be used when completing the MRSPS scoring tables in the SI Report to systematically reduce the areas of concern. The MRSPS evaluation policy currently is draft, when the MRSPS policy is finalized the MRS and MRA boundaries may be refined. All changes to the MRA and MRS boundaries will be presented in the SI Report. Additional details regarding the site-specific MC and site reconnaissance strategy for Malta Test Station are described in sections 3.7 and 4.3, respectively.

3.2 Data Quality Objectives

DQOs have been developed for the Malta Test Station site in accordance with the process presented in Section 3 Data Quality Objectives of the PWP and the Programmatic Quality Assurance Project Plan (PQAPP), Appendix E.1 of the PWP (Alion 2005). The site-specific DQOs, including the chemical-specific Measurement Quality Objectives (MQOs), are included in Appendix B of this SS-WP.

² An MRA is any area on a defense site that is known or suspected to contain unexploded ordnance (UXO), discarded military munition (DMM), or MC (e.g., former ranges or munitions burial areas). An MRA must be comprised of at least one MRS, but may contain multiple MRSs.

³ An MRS is defined as a discrete location within an MRA that is known to require a munitions response. Subdividing an MRA into multiple MRSs allows better characterization of the MRS and tailoring munitions responses to address specific hazards and end uses.

3.3 Conceptual Site Model

As part of the TPP process, a working draft CSM has been developed for the Malta Test Station. The current version of the CSM (revised as per the findings of the TPP) is provided in Appendix A, Figure 11. The CSM is a dynamic model that will be updated throughout the SI process as additional site information is collected.

3.4 Munitions and Explosives of Concern Exposure Analysis

3.4.0.1 The types of MEC historically used at the site are presented in Table 3-1. The anticipated MC associated with the MEC (also listed in Table 3-1) includes metals and explosives. Information concerning demographics, site accessibility/future land use, and MEC and MC exposure routes are discussed below.

3.4.0.2 Perchlorate is a chemical commonly used in marking charges and pyrotechnics of practice bombs of the WWII era and is also used in rockets. Therefore, former use of perchlorate in the munitions at the Malta Test Station cannot be ruled out (the site was used for rocket testing). However, perchlorate typically migrates downward through the soil and has been shown historically to contaminate groundwater, not soil (DoD 2006). Discharge of perchlorate to the groundwater would have occurred during a relatively short time frame (about 6 months) at the Malta Test Station site. Additionally, perchlorate was analyzed for during three separate sampling events in 2003 and twice in 2004 at Malta Test Station at the request of the USEPA and NYSDOH. Sampling results indicated no detections of perchlorate in groundwater at the site. Based on these analyses, residual perchlorate is not present in groundwater based on ongoing environmental investigations by others; therefore, samples will not be collected and analyzed for perchlorate in this SI.

3.4.0.3 Ammonium picrate, a less sensitive explosive and a constituent of concern under the MMRP, is found generally in fixed artillery ordnance used by the Navy. Due to the fact that the site was used by the Army, (ERM 1995) and the type of munitions used historically at the site (tank guns, rockets, and rifles), ammonium picrate is not expected to be present; therefore, this constituent will not be included in the list of analytes for Malta Test Site.

3.4.0.4 TAL metals are a potential constituent of concern at the Malta Test Station due to previous munitions use and testing at the site. TAL metals are being addressed under ongoing environmental investigations by others and will not be analyzed during the SI. Existing TAL

metals data from the 1995 ERM RI will be used to satisfy the DQOs for this SI. For additional information refer to Section 2.5.4. and Section 4.6.2.3.

3.4.0.5 During the TPP it was noted that metals are included in the typical list of MC likely associated with an MMRP site. However, as discussed in Section 2.5, an RI/FS has been conducted at this site under ongoing environmental investigations by others to address potential contamination at the site due to past owner/operator activities. During the RI/FS, 108 surface soil samples, 254 shallow subsurface soil samples, three deep subsurface soil samples, 17 surface water samples, 17 sediment/soil samples, and 43 groundwater samples were collected and analyzed for TAL metals. The results were validated in accordance with USEPA Region 2 validation requirements (ERM 1995, EPA 1999). The areas sampled corresponded to those areas being evaluated by the Alion Team for the presence of MC (Figure 8). In general, only isolated exceedances of metals were noted (lead in the soil at Building 23P and mercury at the Muggett's Pond Drainage Ditch Intersection). Under guidance from the EPA, a Record of Decision (ROD) was signed for the site to address residual contamination, specifically VOCs in groundwater and limited metals (lead in the soil at Building 23P and mercury at the Muggett's Pond Drainage Ditch Intersection) and VOC contamination in soils. The RA was completed for the site in 1999. Due to the nature and extent of the previous investigation/cleanup activities no sampling/analysis is proposed for the complete list of metals at Malta Test Station. For additional information regarding the sampling at the site refer to Section 2.5 of this SS-WP.

3.4.0.6 Information concerning demographics, site accessibility/future land use, and MEC and MC exposure routes are discussed below.

Table 3-1. MEC Type and Composition (Wikipedia 2006)	
Item	Filler/Weight
120 millimeter (mm) Projectiles Full Range Practice	To Be Determined (TBD)
155 mm Projectiles	M549 16 Lb Comp B M107 14.6 pound (lb) Trinitrotoluene (TNT) or 15.4 lb Comp B M483A1 M42 and M46 Grenades with Comp A5 (wikipedia.org)
18 inch (in.) artillery shells	TBD

Table 3-1. MEC Type and Composition (Wikipedia 2006)

Item	Filler/Weight
105 mm to 152 mm tank guns	M1, HE TNT
105 mm to 155 mm Howitzers	M198 (155mm) M107 Comp B
60 mm, 90 mm, and 150 mm recoilless rifles	M371 practice round (90mm) Smoke pellet M371A1 HEAT (90mm) M590 antipersonnel (90mm)
Rocket Fuel	Tetryl Sticks of Double Base powder Ballistite T1E1 salted powder M7 liquid (mixture of red fuming nitric acid, UDMH, and JP-4 jet fuel), or solid
Hydrazine/hydrazine nitrate liquid monopropellants	TBD

This table has been filled out with the best available information.

Composition A5 = RDX, stearic acid, and wax; Composition B = TNT, RDX, and wax.

3.4.1 Demographics

The Malta Test Station is located in the cities of Malta and Stillwater, New York. According to the 2000 census, Malta has a population of 13,005 people with 5,295 households, 3,537 families, and a population density of 464.2 per square mile (mi²). Malta is a primarily residential city with some commercial and light industry. The city of Stillwater is adjacent to Malta and is also primarily residential with some commercial and light industrial. The 2000 census reported a population of 7,522 with 2,786 households, 2,109 families, and a population density of 181.9 per mi². Both Malta and Stillwater are located in Saratoga County. In 2000, Saratoga County had a population of 200,635 people with 78,165 households, 53,699 families and a population density of 247 per mi² (U.S Census Bureau 2000).

3.4.2 Site Accessibility/Future Use

The Malta Test Station is located on 165 acres off Interstate 87 in the Towns of Stillwater and Malta, New York. There is no public access to the majority of the site; however, some of the roads are open to the public. In the past there was a one mile safety easement surrounding the site which consisted of primarily forestland that was logged by the Luther Forest Corporation

(ERM 1995). According to LFTCEDC, this easement no longer exists. In the future, the current owner, LFTCEDC, plans to develop the Malta Test Station site into a technology campus (Alion 2006).

3.4.3 Munitions and Explosives of Concern and Munitions Constituents Exposure Routes

3.4.3.1 MEC discovered at this site will likely be on or near the surface (within the first eight ft of soil based on artillery shell findings eight feet deep in test pits during the RI). There has been construction and test pit excavations at various areas of the site (e.g. firing range pond, test pit area (D-2)). Several artillery shells and shell casings were found within the top eight ft of soil in many of the test pit excavations conducted during the RI/FS. If MC is found, it will likely be on or near the surface as a result of the various activities at the site during its use by DoD (e.g. rocket fuel testing, magazine storage, and weapons testing). Table 3-1 provides a list of MEC used/found at the site during and after its years of use by the DoD.

3.4.3.2 To complete a MEC/MC exposure analysis, the site-specific DQOs have been defined and a working draft CSM has been developed. 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 Malta Test Station during the TPP. The working draft CSM (Figure 11, Appendix A) was developed to organize exposure pathways and identify potential pathways for MEC and MC exposure. The historical and background information acquired for the Malta Test Station was also reviewed and used in the development of the working draft CSM. The information that was reviewed during the development of the working draft CSM includes the following figures found in Appendix A:

- Figure 1. General Installation Map – This figure depicts an aerial view of the site with the location of buildings and the MRS/MRA site boundaries (USDA 2004).
- Figure 2. Historical Aerial (1978) – This figure depicts a historic aerial view of the Malta Test Station in 1978 (USGS 1978).
- Figure 3. Historic Site Layout – This figure identifies historical features at the Malta Test Station and the current line right of way for underground utilities (USDA 2004).
- Figure 4. Potential Ordnance Impact Areas & MEC Discoveries – This figure indicates potential ordnance impact areas as per Ray Kazyaka (site manager) and locations where MEC/MC has previously been found (USDA 2004)
- Figure 5. Soils Map

- Figure 6. Wetlands and Water Bodies (USDA 2004)
- Figure 7. Topographic Map (2002) (USDA 2002)
- Figure 8. Proposed Sampling Locations– This figure identifies the proposed sampling locations at the Malta Test Station including surface soil (SS), sediment (SD), and surface water (SW), and groundwater (GW) sampling (USDA 2004)
- Figure 9. Proposed Geophysical Reconnaissance Areas
- Figure 10. Project Schedule

3.4.3.3 In addition to the figures, a working draft CSM (Figure 11, Appendix A) has been prepared that indicates the potential sources, pathways, and receptors for the Malta Test Station. Proposed MEC reconnaissance areas (Figure 9, Appendix A) to coincide with MC sampling locations were selected by assessing the potential pathways and receptors and then selecting biased sample locations based on historical information and past MEC discoveries. Biasing MEC reconnaissance areas to ordnance firing ranges, disposal areas, storage magazines, and other areas of interest will permit completion of the MRSPP and achieve the MEC DQOs. MC sampling is further discussed in Section 4.

3.5 Pre-Field Activities

3.5.1 Identification of Areas of Concern

3.5.1.1 MEC/MC historically used/associated with Malta Test Station is discussed in Section 2.3 Site History and Section 2.6 Initial Summary of Risk from Munitions and Explosives of Concern. Detailed information pertaining to the type and composition of MEC/MC found by visual identification or interviews with site personnel has been collected and is summarized in Table 3-1.

3.5.1.2 The largest AOC for MC are those areas that were used for rocket and weapons testing, firing ranges, and disposal areas. These areas include the firing range/firing range pond, Muggett's Pond, the test pit area, and areas designated potential ordnance impact areas as per Ray Kazyaka and confirmed by historic documentation (2006). Proposed environmental sample locations were selected throughout the Malta Test Station to capture a comprehensive picture of the site and focus on suspect areas. The firing range is an open area located in the central portion of site to the northeast of Muggett's Pond that was used to test large caliber weapons and liquid propellants (ERM 1995). According to the Literature Search Report (LSR), large weapons

testing included the firing of 105mm to 152mm tank guns, 105mm to 155mm Howitzers, and 60mm, 90mm, and 150mm recoiler rifles. According to the LSR, there were approximately 35,000 firings of large caliber weapons into a sand pit from 1972 to 1975 and included hydrazine/hydrazine nitrate liquid monopropellants. Based on aerial photographs, the Firing Range was used from 1968 through 1982. The firing range pond was a flat, open area without standing water located east of the firing range. The firing range pond reportedly was used as an artillery firing ground and a storage area for brush. Muggett's Pond is a (30 ft diameter) man-made pond that was used to cool rocket engines during tests in the 1950s and 1960s. The pond collects all surface water runoff from the center of the site. The test pit area (Area D-2) is a open grassy area south east of the range pond that reportedly was used to dispose of non-salvageable, non-burnable building materials such as concrete, wood, metal siding, cardboard, and wooden crates (ERM 1995).

3.5.1.3 During the RI, numerous artillery shells and casings were found during the excavation of test pits in the firing range pond and test pit area (designated area D-2 during the RI). In the firing range pond area the following items were found; 18 in. artillery shells and casings in test pit P-2, six unspecified artillery shells in test pit P-27, three unspecified artillery shells in P-28, unspecified shell casings in P-29, and 2 unspecified artillery shells in P-33. During the site walk following the TPP meeting, a 60mm mortar and a potential 120mm practice mortar were found partially buried on the road near the firing range pond area. In the test pit area four unspecified artillery shells were found in test pit P-20. All artillery shells and casings were found within the top eight ft of soil in each of the test pits (ERM 1995).

3.5.1.4 While MEC was not found at the following locations, historical reports and interviews indicate that MEC was seen at one time or MEC presence is probable due to previous site use:

- During the TPP, an attendee indicated that 105mm ammunition boxes had been found in the past in the fuel test area (Alion 2006).
- The Site Manager (Ray Kazyaka) indicated several potential ordnance impact areas including the chemical test pit, fuel storage magazines, ram jet lab, power storage, gas storage, fuel feed test, and pump test areas (Kazyaka 2006).

3.6 Environmental Protection Program

This Environmental Protection Plan (EPP) has been developed to minimize potential adverse effects to the environment occurring as result of the planned SI activities at the Malta Test

Station. This EPP identifies sensitive natural receptors and provides methods to protect and conserve those resources.

3.6.1 Threatened and Endangered Species

3.6.1.1 According to the NYSDEC there are no records of known occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats, on or in the immediate vicinity of the Malta Test Station site (NYSDEC 2006). Every effort will be made to avoid disturbances to T & S species or sensitive habitats during SI field activities.

3.6.2 Wetlands

3.6.2.1 According to the U.S. Department of Agriculture (USDA) (USDA 2002), there are no wetlands on the Malta Test Station site. However, freshwater forested shrub wetland is present south of the site. Two ponds (Muggett's Pond and a pond near the chemical plant on the eastern side of the property) and several drainage ditches are located on the site. The current sampling plan will avoid disturbances to the wetlands at the Malta Test Station. In the event that access to the wetlands for site investigation activities becomes necessary, the disturbance will be minimized to the extent possible. No wetlands vegetation clearance is anticipated during field sampling activities.

3.6.3 Cultural, Archaeological, and Water Resources

3.6.3.1 The Alion Team/USACE is in the process of consulting with the New York State Historic Preservation Office to determine cultural resources at the Malta Test Station. In the event that cultural, archaeological, and/or water resources are identified by the New York State Preservation Office, any disturbances will be avoided or mitigated in accordance with state requirements. Any adjustments required to the sampling design to avoid impacts to cultural resources will be documented in the Final SS-WP, prior to commencement of field activities.

3.6.4 Coastal Zone

Malta Test Station is not within a designated coastal zone area.

3.6.5 Tree and Shrub Removal

Each sampling location will be evaluated individually to avoid tree and shrub removal during SI activities. Tree and shrub removals are not anticipated during the field sampling activities.

3.6.6 Existing Waste Disposal Sites

In the event MEC is observed in an undocumented suspected disposal area, and a complete pathway between source and receptor exists, and the UXO team determines that the MEC item(s) constitute an explosive hazard, the procedures in the USACE IGD, *Procedure for Preliminary Assessment and Site Inspection Teams That Encounter UXO While Gathering Non-UXO Field Data* (USACE 2006a) will be implemented. IGD can be summarized as follows:

- The item will be flagged.
- The property owner will be notified of the hazard and advised to call the local emergency response authority.
- CENAB PM will be notified.
- The property owner will be informed that if they do not call the local response authority within 1 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. The local authorities are authorized to call 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 and provide accurate location information to the emergency response authority.

3.7 Munitions and Explosives of Concern Avoidance Design and Rationale

3.7.1 Site Reconnaissance and Field Procedures

Based on previous investigations, there is a potential for MEC to be present at the Malta Test Station. A UXO Technician will be present to perform MEC avoidance during SI 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 MEC used at the site. The field personnel also will receive a daily safety briefing from the site UXO Technician to highlight the MEC and hazards associated with the MEC.

3.7.1.1 Site reconnaissance 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 9 in Appendix A includes proposed geophysical reconnaissance areas and

paths planned for the site. Shading on Figure 9 does not represent 100% reconnaissance in these areas. Access routes to/from sampling locations may be driven and therefore reconnaissance will not be performed on access routes. Additionally, during the Malta field event, the field team will first inspect/conduct geophysical assisted reconnaissance/sample areas where the stakeholders intend to establish new high voltage power line utilities at the site (Figure 9). The UXO Technician will identify a specific location in the field where a sample will be collected. Footpaths for personnel to access and egress will be identified to retain personnel within the pathway. During the sample location activities, the UXO Technician 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 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 final SI Report. In the event that the UXO Technician determines that an anomaly may present an explosives hazard imminent threat to human health, procedures are outlined in Paragraph 1.2.4 in Section 1.2 Project Scope and Objectives and IGDs will be followed (USACE 2006a, b, and c).

3.7.1.2 Once the UXO Technician identifies an area as anomaly-free, the MC sampling team will collect the samples for analysis. Soil 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. As presented in Table 4-2, the proposed sampling will include 14 soil samples, 2 sediment samples, 2 surface water samples, and 3 groundwater samples. These samples and their locations were selected after completion of the preliminary CSM, which provided the necessary information to determine biased sample locations. During the TPP (Alion 2006), the CSM and sample selections were reviewed and this report reflects the modifications that were made. Sampling is further discussed in Section 4 of this SS-WP.

3.7.2 Equipment

3.7.3.1 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 GA-52Cx will be used for the purpose of anomaly avoidance during sampling activities at the Malta Test Station. The Schonstedt GA-52Cx identifies ferrous metals. The instrument provides ample detection considering the munitions, geology, and potential interferences expected at the site.

3.7.3.2 GPS equipment will be utilized to log the locations of MEC items encountered, adjusted sampling locations, and other items of interest. The GPS equipment employed will have a

minimum accuracy of ± 1 meter (Trimble Pro XRS or equivalent). Operators will receive appropriate training prior to their arrival at the site. GPS locations will be transferred from the data logger at the end of each field day for inclusion in the FUDS GIS.

3.7.3 Calibration and Method Testing

3.7.4.1 The UXO Technician 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 site. The UXO Technician 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 object the technician 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 will check his instruments periodically throughout the day on objects known to contain ferrous or non-ferrous metals such as boot eyelets, belt buckles, or other readily available items.

3.7.4.2 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 each GPS unit each field day. Each unit’s GPS location will be recorded and compared to the known value, validating each 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 (if wooded, test point should be in woods). The pass/fail GPS reoccupation test will require that the GPS units register within 1 meter of the established surveyed point.

4. MUNITIONS CONSTITUENT SAMPLING AND ANALYSIS PLAN

4.1 Introduction

This Site-Specific Sampling and Analysis Plan (SS-SAP) provides specific information and operating procedures applicable to sampling and analytical activities to be performed as part of the SI at the Malta Test Station and includes procedures on gathering non-direct measurement data that will also be presented in the SI Report.

4.2 Non-Direct Measurement Data Acquisition

4.2.1 Rationale for Non-Direct Measurement

4.2.1.1 The Alion Team will utilize existing non-direct measurement data from various sources to fulfill selected programmatic requirements of the SIs of Multiple Sites in the Northeast Region. According to EPA Guidelines (EPA 2002):

- “Non-direct measurements refer 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. Examples include computer databases, literature files, and software processing. Frequently, using existing data rather than generating new data is sufficient to meet the needs of some phases of the modeling process.”

4.2.1.2 Certain existing data will be sufficient to meet the needs of this project and include data involving site demographics, topography, climate, vegetation, geology, soils, hydrology, and history. Potential non-direct measurement sources to be used during the SIs include, but are not limited to:

- Site-specific information from the USACE documents provided to Alion (i.e. INPR, etc.)
- Site-specific information from stakeholders or knowledgeable individuals associated with the FUDS collected during the TPP or SI work plan 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 appropriate state regulatory agencies (USFWS and NYSDEC).
- Site-specific information pertaining to cultural and archeological resources associated with the site collected from the Bureau for Historic Preservation.

4.2.2 Criteria for Non-Direct Measurement

All non-direct measurement data will need to meet several acceptance criteria for a given project. Non-direct measurement data acceptance criteria will include:

- The use of reputable sources
- Data comparison between multiple sources (if available)
- Senior Technical Review from an expert in the applicable field
- Independent expert evaluation (3rd party review).

4.2.3 Use of Reputable Sources

The Alion Team will ensure that all information is gathered from reputable sources by utilizing government sponsored resources as the primary/initial data source. In the case of an internet search on site-specific geology, for example, government websites such as the USGS or other state and locally sponsored websites will serve as the principal source of information. All sources will be cited in text and referenced in the reference section of the site-specific work plans and reports.

4.2.4 Multiple Data Source Comparison

The Alion Team will compare multiple sources of the same information, when available, to ensure the accuracy of the facts presented in the SI reports. For example, Alion will compare the T&E species information presented in the previous investigations with updated information provided by state regulatory agencies.

4.2.5 Senior Technical Review

In-house experts will provide an initial Senior Technical Review on the non-direct information gathered during the SIs. For example, site-specific geologic information will be reviewed by a geologist from the Alion Team to ensure the completeness, accuracy, and reliability of the data.

4.2.6 Independent Expert Evaluation

An independent (3rd party) evaluation will be conducted by qualified persons who have not been involved in the preparation of the project specific documents and who are under a separate supervision from those involved in the preparation of the SIs. For example, a Senior Alion Team reviewer, not working directly on the SI program, will be given the opportunity to review and evaluate the SS-WPs for relevance, completeness, and accuracy.

4.3 Field Activities

Field activities will follow the procedures outlined in the Programmatic Sampling and Analysis Plan (PSAP) and addendum (Appendix E.1 and E.2 of the PWP [Alion 2005]). Information pertaining to the specific samples that will be collected at the Malta Test Station is detailed below. GPS locations and sampling locations descriptions are found in Table 4-1. The actual coordinates (listed below) established for the sample locations were taken from a review of aerial photographs and historical information. Sample locations may be adjusted based on field conditions. These sample locations may require adjustments in the field due to site-specific conditions (i.e. access issues, MEC avoidance, etc.).

Table 4-1. Sample Location Descriptions				
Location	Sampling Identification (ID)	Coordinates (North American Datum [NAD] 83 Universal Transverse Mercator [UTM] Zone 18N)		Area of Interest / Rationale of Sampling Locations
		Easting(ft)	Northing(ft)	
Ram Jet Lab	MTS-JL-SS-02-01	601144	4757534	Low-lying area near the Ram Jet Lab.
Test Structure	MTS-TS-SS-02-01	601278	4757328	Low-lying area near the Test Structure.
Fuel Test	MTS-FT-SS-02-01	601206	4757223	Low-lying area near the location where 105 millimeter (mm) ammunition boxes were historically found (105 mm ammunition reportedly shot into a berm in the area).
	MTS-FT-SS-02-02	601204	4757244	Low-lying area in the Fuel Test area near the location where 105 mm ammunition boxes were historically found (105 mm

Table 4-1. Sample Location Descriptions

		Coordinates (North American Datum [NAD] 83 Universal Transverse Mercator [UTM] Zone 18N)		
				ammunition reportedly shot into a berm in the area).
	MTS-FT-GW-38-01	601222	4757235	An approximately 38 feet (ft) deep from a GeoProbe location in the Fuel Test area.
Muggett's Pond	MTS-MP-SW-00-01	601393	4757509	Surface water in Muggett's Pond.
	MTS-MP-SD-02-01	601403	4757495	Sediment in Muggett's Pond.
	MTS-MP-GW-25-01	601374	4757509	An approximately 25 ft deep from a GeoProbe location near Muggett's Pond.
Chemical Test Pit	MTS-CP-SS-02-01	601330	4757185	Low-lying area within the area of potential concern indicated by Ray Kazyaka.
Fuel Storage Magazines	MTS-SM-SS-02-01	601432	4757110	Low-lying area within the area of potential concern indicated by Ray Kazyaka.
Drainage Ditches	MTS-DD-SW-00-01	601378	4757448	Surface water in Drainage Ditch.
	MTS-DD-SD-02-01	601336	4757416	Sediment in Drainage Ditch.
Pump Test	MTS-PT-SS-02-01	601456	4757485	Low-lying area within the area of potential concern indicated by Ray Kazyaka.
Test Pits	MTS-TP-SB-10-01	601495	4757524	Low-lying area near the location of Test Pit P-20 where 4 artillery shells were found within the top 8 feet (ft) of soil during the RI and a 60 mm mortar was found during the TPP site walk.
Firing Range Pond	MTS-RP-GW-33-01	601493	4757540	An approximately 33 ft deep from a GeoProbe location near the Test Pits excavated during the RI.
	MTS-RP-SS-02-01	601469	4757605	Low-lying area near the location of Test Pits P-29 and P-27 where shell casing and 6 artillery shells were found within the top 8 ft of

Table 4-1. Sample Location Descriptions

		Coordinates (North American Datum [NAD] 83 Universal Transverse Mercator [UTM] Zone 18N)		
				soil during the RI.
	MTS-RP-SS-02-02	601399	4757582	Low-lying area near Test Pit P-33 where 2 artillery shells were found within the top 8 ft of soil during the RI.
	MTS-RP-SS-02-03	601447	47575 48	Low-lying area near Test Pit P-2 where 18" artillery shells and shell casings were found within the top 8 ft of soil during the RI.
	MTS-RP-SB-10-01	601450	4757578	Low-lying area near the location of the 120 mm practice mortar round found during the TPP site walk.
Gas Storage	MTS-GS-SS-02-01	601556	4757705	Low-lying area within the area of potential concern indicated by Ray Kazyaka.
Powder Storage	MTS-PS-SS-02-01	601298	4757522	Low-lying area within the area of potential concern indicated by Ray Kazyaka.

4.3.1 Background Samples

Background samples are collected to address the likelihood of MC being found at naturally occurring concentrations. Since the Alion team is sampling explosives only and these MC are not expected to be occurring naturally in background, no background sampling is proposed (see Section 2.5).

4.3.2 Surface Soil

Thirteen surface soil samples will be collected from a depth of 0 to 2 in. at the Malta Test Station. Upon review of Figure 3 Historic Site Layout, Figure 4 Potential Ordnance Impact Areas and MEC Discoveries, and the documents summarized in this SS-WP, surface soil samples were located at the MEC/MC AOCs (Figure 8). These AOCs include the firing range pond where 18 in. artillery shells and casings and 120 mm shells/mortar were found, the test pit area where artillery shells were found, and the fuel test area where a 105 mm ammunition box

was found, and the other potential ordnance impact areas indicated by the site manager. These areas are suspected of surface soil contamination because MEC/MC is expected to be found at the ground surface. These sample locations are shown in Figure 8, Appendix A. The constituents chosen were based on the munitions information presented in Table 2-1 Potential Risk From MEC and Table 3-1 MEC Type and Composition. Samples will be analyzed explosives at each of these locations. TAL metals have been analyzed during previous investigations at the site and will not be analyzed during this SI (see Section 2.5).

4.3.3 Subsurface Soil

Two discrete subsurface soil samples will be collected from a depth of up to 10 feet will be collected at the Malta Test Station. Based on a review of Figure 3 Historic Site Layout, Figure 4 Potential Ordnance Impact Areas and MEC Discoveries, and the documents summarized in this SS-WP, one subsurface soil sample (MTS-TP-SB-10-01) will be located in the test pit area where artillery shells were found. This area was reportedly used to dispose of non-salvageable, non-burnable building materials that were buried to a depth of eight to ten feet. Another subsurface sample (MTS-RP-SB-10-01) will be collected at the former Firing Range Pond where test pits uncovered artillery shells and casings. These sample locations are shown in Figure 8, Appendix A. Samples will be analyzed explosives at each of these locations. TAL metals have been analyzed during previous investigations at the site and will not be analyzed during this SI (see Section 2.5).

4.3.4 Sediment

Two sediment samples will be collected at Malta Test Station. The location of these samples is shown in Figure 8, Appendix A. These anticipated sample locations are based on a review of Figure 3 Historic Site Layout, Figure 4 Potential Ordnance Impact Areas and MEC Discoveries, and the documents summarized in this SS-WP. Sediment samples will be collected at the edge of Muggett's Pond, a man-made pond 30 feet in diameter near the center of the site and in one of the drainage ditches associated with the site. Muggett's Pond was used to cool rocket engines during tests in the 1950s and 1960s and serves as the primary destination for all surface water runoff on site. The constituents chosen were based on the munitions information presented in Table 2-1 Potential Risk From MEC and Table 3-1 MEC Type and Composition. Samples will be analyzed explosives at each of these locations. TAL metals have been analyzed during previous investigations at the site and will not be analyzed during this SI (see Section 2.5).

4.3.5 Surface Water

Two surface water samples will be collected at the Malta Test Station. The location of these samples is shown in Figure 8, Appendix A. These anticipated sample locations are based on a review of Figure 3 Historic Site Layout, Figure 4 Potential Ordnance Impact Areas and MEC Discoveries, and the documents reviewed/summarized in this SS-WP. Surface water will be collected at the edge of Muggett's Pond, a man-made pond 30 feet in diameter near the center of the site and in one of the drainage ditches associated with the site. Muggett's Pond was used to cool rocket engines during tests in the 1950s and 1960s and serves as the primary destination for all surface water runoff on site. The constituents chosen were based on the munitions information presented in Table 2-1 Potential Risk From MEC and Table 3-1 MEC Type and Composition. Samples will be analyzed only for explosives at each of these locations. TAL metals have been analyzed during previous investigations at the site and will not be analyzed during this SI (see Section 2.5).

4.3.6 Groundwater

Three groundwater samples will be collected at the Malta Test Station. The direct push method will be used to obtain the groundwater samples at three locations (Muggetts Pond, Range Pond, and the Fuel Test Area). Previous investigations indicate that groundwater is located at depths less than 40 feet, which will facilitate the use of the GeoProbe (ERM 1995). The GeoProbe rig will be used to complete direct push soil borings at three locations (Muggetts Pond, Range Pond, and the Fuel Test Area) to the approximate depth to water at each area (25 ft, 33 ft, and 38 ft, respectively). The groundwater samples will be collected at the site following the procedures set forth in the PWP (Alion 2005), Appendix E.1 Final PSAP, Section 5.3.2 Sampling Groundwater Using a GeoProbe. The exact sample collection locations will be determined in the field based upon site-specific circumstances, but the approximate location is shown on Figure 8, and the approximate GPS location is included in Table 4-1. This groundwater samples will be analyzed for explosives to directly assess possible MC contamination in the area. TAL metals have been analyzed during previous investigations at the site and will not be analyzed during this SI (see Section 2.5).

4.4 Field Operations Documentation

Field operations for the SI activities at the Malta Test Station will be documented in accordance with the Programmatic Field Sampling Plan (PFSP) (Alion 2005). Table 4-2 details the location, matrix sampled, sampling 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 logbook along with an explanation for the modifications. Logs and forms used to document field activities are provided in Appendix D.

4.4.1 Sample Handling

Samples collected during the SI activities at the Malta Test Station will be handled as outlined in the PFSP. Tables 4-3A through 4-3D provide additional information regarding preservatives, sample container types, and allowable sample holding times.

4.4.2 Investigative Derived Waste

The only 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/sediment will be placed back in the sampling locations in accordance with the approved PWP.

4.4.3 Quality Assessment/Three Phase Inspection Procedures

Quality assessment/three phase inspection procedures will be conducted in accordance with the procedures outlined in the PFSP.

4.4.4 Nonconformance/Corrective Action

Nonconformance/corrective action issues will be addressed in accordance with the procedures outlined in the PFSP.

4.5 Munitions Response Site Prioritization Protocol and Hazardous Ranking System Data Acquisition

4.5.1 Non-measurement data including existing site information as presented in the INPR along with data collected from SI planning and field activities will be used to complete the MRSPP. MRSPP includes three hazard evaluation modules for each MRS within a MRA: Explosive Hazard Evaluation (EHE), Chemical Warfare Material 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 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. An MRS priority is determined based on integrating the ratings from the EHE, CHE, and HHE modules (DoD 2005).

4.5.2 The Alion Team also will collect data for HRS scoring (to be performed by EPA) by evaluating soil, sediment, surface water, and groundwater at the Malta Test Station. For these media, the likelihood of release or exposure, the characterization of the waste, and the effect on the four types of targets (nearest individual, population, resources, and sensitive environments) will be considered. Information collected for HRS scoring by EPA will include data to complete three main elements to determine site ranking. These elements include (1) site and source characterization; (2) observed releases and areas of observed contamination; and (3) levels of contamination at specific targets. For site and source characterization, analytical data are important in characterizing sites and sources, primarily to identify hazardous substances present in site sources. Analytical data also support determining hazardous waste quantity, delineating source dimensions, and investigating the degree of source containment. For observed releases and areas of observed contamination, analytical data may provide direct evidence of an observed release of hazardous substances to affected media; demonstrate significant contamination (observed contamination in the soils exposure pathway), estimate areas of contamination, and show that the contamination is attributable to the site. For an observed release (or observed contamination), significance relates only to the concentration found in a particular pathway or medium, not to the environmental or health effect of that release. For levels of contamination at specific targets, analytical data are required to document actual contamination of targets, including wells and surface water intakes supplying drinking water; residential and school properties; and fisheries, wetlands, and other sensitive environments. If data do not demonstrate that targets are exposed to actual contamination, targets are evaluated as potentially exposed. 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 (Level I carries the greatest weight) and scores of 28.5 or above are then eligible for listing on the National Priorities List (NPL) (EPA 2001).

Table 4-2. Sample Identification Table

Location	Sampling Identification (ID)	Matrix				Munitions Constituents (MC) Category	Quality Control (QC) Samples*	
		Soil	Sediment	Surface Water	Ground water	Explosives	Field Duplicate ¹	Quality Assurance (QA) Split ²
Ram Jet Lab Test Structure	MTS-JL-SS-02-01	X				X		
	MTS-TS-SS-02-01	X				X		
Fuel Test	MTS-FT-SS-02-01	X				X	X	
	MTS-FT-SS-02-02	X				X		
	MTS-FT-GW-38-01				X	X	X	
Muggett's Pond	MTS-MP-SW-00-01			X		X		
	MTS-MP-SD-02-01		X			X	X	
	MTS-MP-GW-25-01				X	X		
Chemical Test Pit	MTS-CP-SS-02-01	X				X		
Fuel Storage Magazines	MTS-SM-SS-02-01	X				X		
Drainage Ditches	MTS-DD-SW-00-01			X		X		X
	MTS-DD-SD-02-01		X			X		
Pump Test	MTS-PT-SS-02-01	X				X		
Test Pits	MTS-TP-SB-10-01	X				X		X
Firing	MTS-RP-GW-33-01				X	X		

Table 4-2. Sample Identification Table

Location	Sampling Identification (ID)	Matrix				Munitions Constituents (MC) Category	Quality Control (QC) Samples*	
		Soil	Sediment	Surface Water	Ground water	Explosives	Field Duplicate ¹	Quality Assurance (QA) Split ²
Range Pond	MTS-RP-SS-02-01	X				X		X
	MTS-RP-SS-02-02	X				X		
	MTS-RP-SS-02-03	X				X		
	MTS-RP-SB-10-01	X				X		
Gas Storage	MTS-GS-SS-02-01	X				X		
Power Storage	MTS-PS-SS-02-01	X				X		
TOTALS		14	2	2	3	21	3	3
*For each Quality Control (QC) sample, the marked sample type will be gathered for every Munitions Constituent (MC) category that is being sampled. Note: One equipment blank will be run per day per reusable equipment type and will be labeled as outlined in the programmatic work plan (PWP).								
1 FD# will replace sample identification (ID) (the sample ID and its corresponding FD# will be indicated in the field notebook); 10% 2 Quality Assurance (QA) will be added to sample ID to indicate QA split; 10%							3 Matrix Spike (MS) will be added to sample ID to indicate MS; 5% 4 Matrix Spike Duplicate (MSD) will be added to sample ID to indicate MSD; 5%	
FD#	Field Duplicate Number							
ID	Identification							
PWP	Programmatic Work Plan for Formerly Used Defense Sites Military Munitions Response Program Site Inspections in the Northeast Region							
MC	Munitions Constituent							
QA	Quality Assurance							
QC	Quality Control							

TABLE 4-3A. ANALYTICAL PARAMETERS, METHODS, STANDARDS, AND TOTAL NUMBER OF SOIL ANALYSES

Compound	Analytical Method	Prep Method	Preservative	Sample Container Type	Holding Times	Number of Soil Samples	Field Duplicates	QA Splits	Equipment Blanks	Total Analyses
Explosives: RDX; HMX; 2,4,6-Trinitrotoluene; 1,3,5-Trinitrobenzene; 1,3-Dinitrobenzene; 2,4-Dinitrotoluene ; 2,6-Dinitrotoluene ; 2-Amino-4,6-dinitrotoluene; 2-Nitrotoluene; 3-Nitrotoluene; 4-Amino-2,6-dinitrotoluene; 4-Nitrotoluene; Nitrobenzene; Tetryl	SW8330A	SW8330A	Cool to 4°C	2 8 ounce (oz) wide-mouth glass jar w/ Teflon-lined cap (250 grams)	14/40 days	14	1	2	0	17
PETN	SW8330 (mod)	SW8330 (mod)				14	1	2	0	17
Nitroglycerin	SW8330 (mod)	SW8330 (mod)				14	1	2	0	17
Totals						42	3	6	0	51

TABLE 4-3B. ANALYTICAL PARAMETERS, METHODS, STANDARDS, AND TOTAL NUMBER OF SEDIMENT ANALYSES

Compound	Analytical Method	Prep Method	Preservative	Sample Container Type	Holding Times	Number of Soil Samples	Field Duplicates	QA Splits	Equipment Blanks	Total Analyses
Explosives: RDX; HMX; 2,4,6-Trinitrotoluene; 1,3,5-Trinitrobenzene; 1,3-Dinitrobenzene; 2,4-Dinitrotoluene ; 2,6-Dinitrotoluene ; 2-Amino-4,6-dinitrotoluene; 2-Nitrotoluene; 3-Nitrotoluene; 4-Amino-2,6-dinitrotoluene; 4-Nitrotoluene; Nitrobenzene; Tetryl	SW8330A	SW8330A	Cool to 4°C	2 8 ounce (oz) wide-mouth glass jar w/ Teflon-lined cap (250 grams)	14/40 days ^a	2	1	0	0	3
PETN	SW8330	SW8330				2	1	0	0	3
Nitroglycerin	SW8330	SW8330				2	1	0	0	3
Totals						6	3	0	0	9

TABLE 4-3C. ANALYTICAL PARAMETERS, METHODS, STANDARDS, AND TOTAL NUMBER OF SURFACE WATER ANALYSES

Compound	Analytical Method	Prep Method	Preservative	Sample Container Type	Holding Times	Number of Surface Water Samples	Field Duplicates	QA Splits	Equipment Blanks	Total Analyses
Explosives: RDX; HMX; 2,4,6-Trinitrotoluene; 1,3,5-Trinitrobenzene; 1,3-Dinitrobenzene; 2,4-Dinitrotoluene; 2,6-Dinitrotoluene; 2-Amino-4,6-dinitrotoluene; 2-Nitrotoluene; 3-Nitrotoluene; 4-Amino-2,6-dinitrotoluene; 4-Nitrotoluene; Nitrobenzene; Tetryl	SW8330A	3535A	Cool to 4°C	3 1-Liter amber bottle	7/40 days ^a	2	0	1	0	3
PETN	SW8330 (mod)	3535A				2	0	1	0	3
Nitroglycerin	SW8330 (mod)	3535A				2	0	1	0	3
Totals						6	0	3	0	9

TABLE 4-3D. ANALYTICAL PARAMETERS, METHODS, STANDARDS, AND TOTAL NUMBER OF GROUNDWATER ANALYSES

Compound	Analytical Method	Prep Method	Preservative	Sample Container Type	Holding Times	Number of Groundwater Samples	Field Duplicates	QA Splits	Equipment Blanks	Total Analyses
Explosives: RDX; HMX; 2,4,6-Trinitrotoluene; 1,3,5-Trinitrobenzene; 1,3-Dinitrobenzene; 2,4-Dinitrotoluene; 2,6-Dinitrotoluene; 2-Amino-4,6-dinitrotoluene; 2-Nitrotoluene; 3-Nitrotoluene; 4-Amino-2,6-dinitrotoluene; 4-Nitrotoluene; Nitrobenzene; Tetryl	SW8330A	3535A	Cool to 4°C	3 1-Liter amber bottle	7/40 days ^a	3	1	0	0	4
PETN	SW8330 (mod)	3535A				3	1	0	0	4
Nitroglycerin	SW8330 (mod)	3535A				3	1	0	0	4
Totals						9	3	0	0	12

^aNumber of days between sample collection and extraction/number of days between extraction and analysis

^bHolding time applies to mercury only

¹Indicates number of bottles

Field Duplicates, 1:10 (10%)

QA Splits, 1:10 (10%)

MS/MSD, 1:20 (5%) – To be selected at the laboratory by GPL.

Temperature Blank, 1/cooler

Equipment Blank, 1/ FUDS (if necessary)

4.6 Site-Specific Quality Assurance Project Plan

4.6.0.1 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), provide guidance for quality assurance (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
- Data quality objectives
- 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

4.6.0.2 This Site-Specific Quality Assurance Project Plan (QAPP) provides project specific information and operating procedures applicable to sampling and analytical activities to be performed as part of the SI at the Malta Test Station. Specifically this QAPP provides site-specific DQOs developed for the Malta Test Station and provides insight into the DQO process. The reader is referred to the PWP for discussions relating to the other PQAPP topics (Alion 2005).

4.6.1 Data Quality Objective Process

To achieve the quality of data required to meet the FUDS program site-specific goals, both qualitative and quantitative statements known as DQOs were developed for the site during the TPP process (Appendix B). By implementing these DQOs during the SI, the data that is obtained will be legally and scientifically sound and ultimately demonstrate adequacy for its intended use. Following the three-stage DQO development process from Section 3 of the PQAPP ensures quality data will be obtained to support the final decisions that result from the SI (Alion 2005). The DQO process for the Malta Test Station is discussed below and includes procedures on gathering/evaluating non-direct measurement data that will be presented in the SI Report.

4.6.2 Technical Project Planning Process

The TPP process (USACE 1998) is used to identify project objectives and support development of a data collection programs that ensure the requisite type, quality, and quantity of data are obtained. The resulting data from this process allows for informed site closeout decisions. As discussed in Section 1.3 Technical Project Planning Summary, the chemical-specific and programmatic DQOs were reviewed and evaluated during the Malta Test Station TPP session, and concurrence was obtained for the process forward (Alion 2006). The revised DQO statements and working draft CSM are discussed below and are included in Appendix B, Data Quality Objectives and Appendix A, Figure 11. The main DQO development steps followed are presented below along with the resulting conclusions from the TPP.

4.6.2.1 Identify Decision Types

This stage of the DQO process identifies data users, evaluates existing information for usability and specifies investigation goals and decisions. At the Malta Test Station the data users/decision types are as follows:

- Data Collection – The Alion Team is responsible for data collection activities for the SI to include collection of MEC/MC data during field activities as well as non-measurement data from available sources in accordance with the procedures outline in the PQAPP. This information will be used by all stakeholders during the SI process.
- CSM Development – The Alion Team is responsible for developing the CSM in conjunction with the stakeholders. MEC/MC data during field activities as well as non-measurement data from available sources collected in accordance with the procedures outline in the PQAPP are used to refine and modify the working draft CSM presented during the TPP. A working draft CSM which identifies the potential pathways and receptors present at the Malta Test Station is included in Appendix A, Figure 11.
- Sample Analysis – GPL is responsible for the data analysis and for following applicable protocols for pertaining to analytical methods (outlined in the PQAPP). Sampling data will be used by all stakeholders during the SI process.
- Review/validation of SI analytical Results – Environmental Data Services, Inc. (EDS) is responsible for reviewing and validating the data acquired during the SI.
- Interpretation of MEC/MC Results – The Alion Team will interpret the results of the SI (both nonmeasurement data as well as field sampling data) and include the interpretation in the SI report.

- Future Response Action – USACE, the regulatory community, and the stakeholders will determine further action based on the site data, assessment results, and associated recommendations.

4.6.2.2 Identify Data Uses and Needs

4.6.2.2.1 This stage of the DQO process determines the type, quality, and quantity of data necessary to complete the goals of the SI for the Malta Test Station. This step also involves the formulation of the DQO statements. The DQOs are the basis for determining the data needs and data uses. DQO worksheets are included in Appendix B. These DQOs are revised versions of those presented during the TPP and they include modifications resulting from the TPP discussions associated with the Malta Test Station as well as programmatic modifications (Alion 2006).

4.6.2.2.2 The following site-specific DQOs have been developed for the Malta Test Station and are presented in Worksheets 1-4 (Appendix B):

- Determine if the site requires additional investigation through a RI/FS or if the site may be recommended for NDAI based on the presence or absence of MEC/MC.
- Determine the potential need for a TCRA
- Collect, or develop, additional data, as appropriate, for HRS scoring by EPA.
- Collect the additional data necessary to complete the MRSP.

4.6.2.2.3 The DQO worksheets were developed using the TPP process (USACE 1998) and the DQO Process for hazardous waste site investigations (EPA 2000). The DQO worksheets have been developed in order to 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 data needs/uses to be completed in order to meet the DQOs are presented below.

- Historic data (to include information from existing site reports [INPR, RI, etc.]), site specific demographics, climatic, and scientific data, and other non measurement data will be collected, reviewed and evaluated by the Alion team in accordance with the procedures outlined in Section 4.2. These data will be used to support achievement of several project objectives including determining presence or absence of MEC/MC, the

need for an emergency response or TCRA, data necessary for HRS scoring (by EPA), MRSPP ranking, and the necessity for an RI/FS.

- Specific MEC/MC data needs presented for Malta Test Station, which include focused site reconnaissance using analog geophysics, along with soil, sediment, surface water, and groundwater samples, were identified using the working draft CSM. Data will be generated using methods and procedures documented in this SS-WP to accurately depict MEC/MC hazards that may or may not exist at the Malta Test Station FUDS, and provide a basis for validating or revising pathways that were identified in the working draft CSM (Figure 11, Appendix A). This data will be used to support achievement of all project objectives.
- Given the MEC used at the Malta Test Station (Table 3-1), the chemical-specific MQOs include TAL metals and explosives. These analytes are presented in Table 4-3A through 4-3D. Note that not all the explosives that are on the SW 8330 method were used at the site; however, the entire suite of explosive analytes will be documented. Federal and state human health and ecological screening values have been identified for residential soil, sediment, surface water, and groundwater at the Malta Test Station. These values have been included in Tables 1 through 4, Appendix B. The values in Tables 1 through 4, Appendix B will be used for comparison of sampling results during the SI. In addition, the Preferred Maximum Method Quantitation Limits (PMQL), which is half of the most stringent criteria, was identified to verify laboratory detection levels will achieve the project goals.
- Lab Certification – Lab certification is a necessary component in the QA/QC process. DEP has certified that GPL is a New York certified lab. The Laboratory Certification ID is 11780.
- QA Requirements - QA split samples will be collected by the field sampling team in accordance with the PQAPP. Samples will be submitted to a CENAB approved laboratory for analysis. The QA lab identified by CENAB is STL-Denver, located in Arvada, Colorado.

4.6.2.3 Design Data Collection Program

4.6.2.3.1 As discussed previously, the TPP process determined that existing data from the 1995 ERM RI was of sufficient quality and quantity to address TAL metals at the site. Therefore, no TAL metal analysis was recommended during the TPP. To further support this conclusion, Alion has evaluated the data against preferred maximum quantitation limits (PQML) and potential screening criteria. This data has also been evaluated according to the Non-

measurement Data Acquisition Rationale discussed in Section 4.2 and it has been determined that the data can be used to complete the DQOs for the SI. DQO attainment verification worksheets will be included in the SI Report.

4.6.2.3.2 During the SI, 14 soil samples, 2 sediment samples, 2 surface water samples, and 3 groundwater samples will be collected. The proposed sampling locations, shown in Figure 8, Appendix A, were placed in areas that are most likely to contain MEC/MC. Sampling methods for each media are described in detail in Section 5 Field Activities in the PFSP, Appendix E.1 (Alion 2005).

4.6.2.3.3 Tables 4-3A through 4-3D identify the analytical methods for each media for which samples are planned. The tables also provide details on preserving samples, sample containers, hold times, and numbers of quality control samples that will be collected. Chemical-specific MQOs to be used to screen MC sampling data collected at the Malta Test Station are presented in Tables 1 through 4. Bolded items in 1 through 4 identify the metals and explosive compounds that have Method Detection Limits (MDL) greater than the PMQL. These items have been summarized below in Table 4. These PMQL are set to one-half of the most stringent of either Human Health Screening Values or Ecological Screening Values.

4.6.2.3.4 The site-specific DQOs will be evaluated throughout the SI Process to see if DQOs are achieved during the SI. A DQO attainment verification worksheet will be included in the SI Report.

5. SITE SPECIFIC ACCIDENT PREVENTION PLAN

The purpose of this section 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 activities.

Client: U.S. Army Corps of Engineers

Project Name/Number: Site Inspection of Malta Test Station

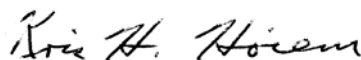
Site Location/Address: Malta and Stillwater, New York (See Site Location Figure 1, Appendix A)

Site Description:

Work Description: Site Inspection of this FUDS will include site reconnaissance, limited geophysical surveys, and soil/sediment/surface water/groundwater sampling.

APPROVALS:

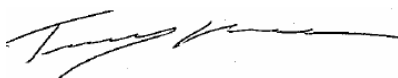
This SS-WP and APP has been prepared under the supervision and review of a CIH certified by the American Board of Industrial Hygiene (ABIH)



Program Safety and Health Officer: _____

Kris H Hoiem, CIH (ABIH No. 1563)

Date



Project Manager: _____

Tim Reese, P.E.

Date

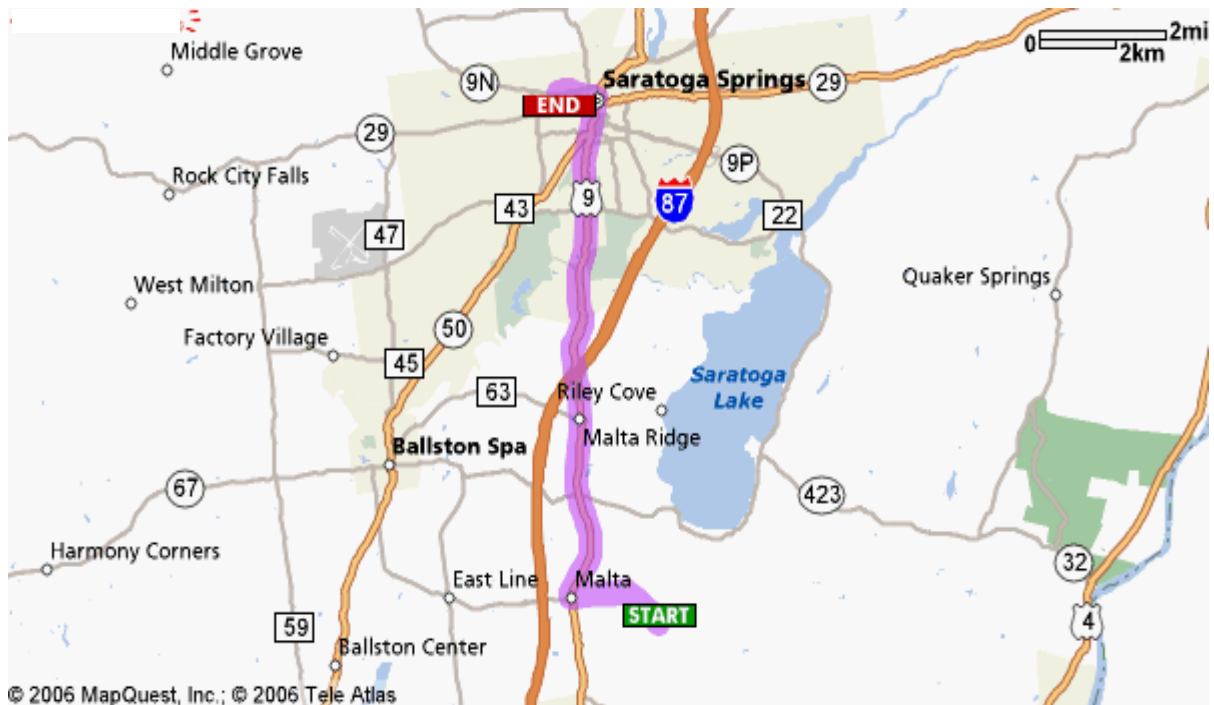


Figure 5-1. Hospital Route Map

MEDICAL EMERGENCY:

Distance to Nearest Hospital: 11.0 mi; approximately 10 mins

Hospital Name: Saratoga Hospital

Hospital Phone: 518-587-3222

Hospital Address: 211 Church Street #1, Saratoga Springs, NY 12866

Route to Hospital: Start out going northeast on Malta Test Station Road going towards Saratoga Research Center. Turn left on County Route 108. Continue on State Route 67. Take ramp onto I-87. Take the exit #13A/US-9 onto Route 9[US-9] toward Saratoga Springs. Continue to follow US-9. Turn left on Church Street [RT-9N]. Arrive at Saratoga Hospital.

Table 5-1. Emergency Contact Information.

Contacts	Name	Phone Number(s) work/cell
Program Manager	Roger Azar	301-399-7304
Deputy Program Manager	Corinne Shia	703-259-5147/703-217-3810 cell
Project Manager	Timothy Reese	410-538-8202 x 101 410-935-3887 cell
Program Safety and Health Officer	Kris Hoiem, CIH	800-777-9750/443-463-5334 cell
Field Team Leader	Katie Drewett	410-771-4950 x5342 503-866-7880 cell
Site Safety and Health Officer	Curtis Mitchell	301-399-7152
Client Contact-USACE Baltimore District	Robert Williams	410-962-4006
	Paul Greene	410-322-2745
	Hamid Rafiee	410-962-7546
Regulatory Contact (NYSDEC)	John Strang	518-402-9622
Property Owner (LFTCEDC)	Jon Kelley	518-587-0945
Site Manager (LFTCEDC)	Raymond Kayzaka	518-587-0945
Saratoga Hospital		518-587-3222
Poison Control		800-222-1222
National Response Center		800-424-8802
EA Medical Services	Health Resources	800-350-4511

HAZARDS OF CONCERN: Check as many as are applicable. See Section 6 of Programmatic APP 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 | | |
| ☐ Volatile | (X) Other, specify: <u>Potential MEC. Site workers will practice MEC</u> | | |

avoidance. Any suspected MEC will be left alone. An UXO Technician (provided by Alion) will identify routes free of anomalies to a sampling area. The UXO Technician will also ascertain that sample locations are free of anomalies. Once the UXO Technician has identified that a sampling location is free of anomalies, the MC sampling team will then collect their sample for analysis. 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.

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 and sediment 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:

Very low levels.

CONTINGENCY PLANS: Summarize below (Evacuation, assembly point, contingency leader)

During an emergency, site workers will gather at an assembly point (to be established during daily Health and Safety meeting). The Site Safety and Health Officer (SSHO) will take the role of contingency leader.

DEVIATIONS/VARIATIONS FROM APP:

No deviations or variation from the APP is permitted without specific written approval from the Program SSHP and PM.

Do Hazardous Waste Site Workers and Supervisor (s) have Documentation of Required Training and Medical Exams? (X) Yes () No, Explain

Do at least two people in the field have current Cardiopulmonary Resuscitation (CPR) and First Aid qualifications?

(X) Yes

() No, Explain

Curtis Mitchell and Katie Drewett

PROTECTIVE EQUIPMENT: Protective equipment should be specified by the type of task and site (e.g., soil boring and sampling at landfill). Indicate type and/or material, as necessary. Use additional pages as necessary.

Primary

TASKS: Site Sampling, Site Reconnaissance, and Geophysical Survey

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

UPGRADE CRITERIA: None – No air monitoring equipment will be used

Respiratory: (X) Not needed
() Self-Contained Breathing Apparatus (SCBA), Airline: _____
() Air Purifying Respirator (APR): _____
() Cartridge: _____
() Tyvek Coverall
() Other: _____

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

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

Gloves: () Not needed
() Undergloves: _____
(X) Gloves: Nitrile, during sampling
() Overgloves: _____
Other: Specify below

Boots: () Not Needed
Boots: Work Boots. Non-steel toe boots required during Geophysical Surveying
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: _____

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

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

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

Boots: () Not Needed
Boots: _____

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 PWP, Appendix D for Calibration Procedures or attach if different. Table 8-1 from PWP, Appendix D specifies monitoring requirements and action levels

INSTRUMENT

ACTION GUIDELINES

Combustible	0-10% Lower Exposure Limit (LEL) Continue.
Gas Indicator	10-20% LEL Potential explosion hazard, continuous monitoring.
(X) Not needed	>20% LEL Explosion hazard; interrupt task/evacuate.
Oxygen (O ₂) Percentage:	20.8% - O ₂ normal.
	<20.8% - O ₂ deficient, investigate cause.
	<19.5% O ₂ Interrupt task/evacuate.

Type _____

Photoionization Detector Specify
() 11.7 electron volts (eV) () 10.2 eV () 09.8 eV () __ eV

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

(X) Not needed

Flame Ionization Specify:

Detector

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

(X) Not needed

Detector Tubes Specify: (Chemical, Range) COMMENTS (Interferences)

Monitor

Type _____

(X) Not needed

Dust Monitor Specify:

Type _____

(X) Not needed

Radiation Survey Meter

(X) Not needed	> Background	Contact Radiation Safety Officer (RSO)/SSHO and PM
	3 x Background	Notify CIH and stop work
	2.5mR/hr	Interrupt task/evacuate

Notes: Annual Exposure not to exceed 100 millirem per year (mrem/yr) or 50 microrem per hour (µrem/hr) average.

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 as general refuse following sample collection

Summarize heavy equipment decontamination/containment and disposal method

(X) Not needed

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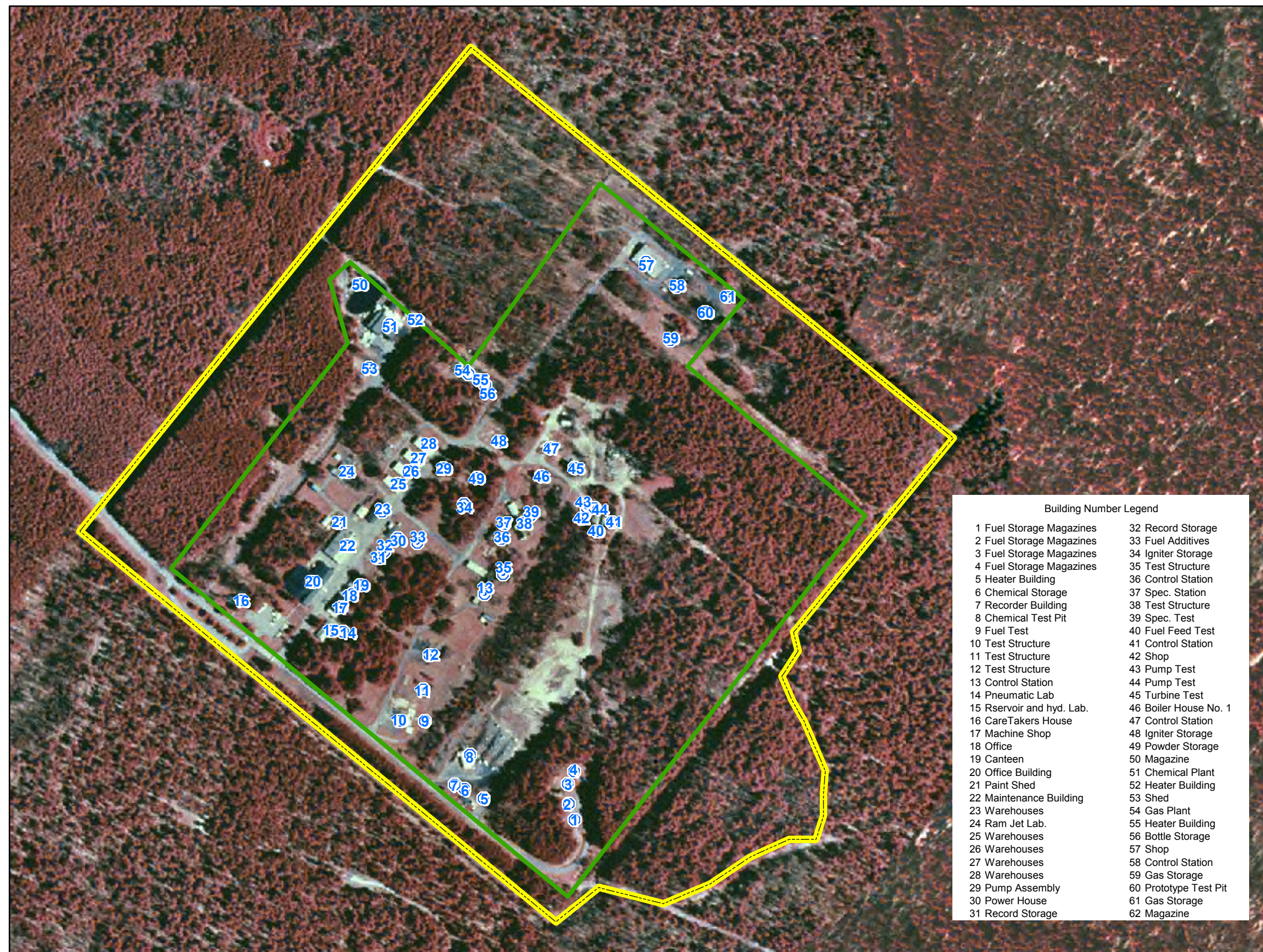
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APPENDIX A—FIGURES
LIST OF FIGURES

<u>Number</u>	<u>Title</u>
1	General Installation Map
2	Historical Aerial (1978)
3	Historic Site Layout
4	Potential Ordnance Impact Areas and MEC Discoveries
5	Soils Map
6	Wetlands and Water Bodies
7	Topographical Map (2002)
8	Proposed Sampling Locations
9	Proposed Geophysical Reconnaissance Areas
10	Project Schedule
11	Working Draft CSM

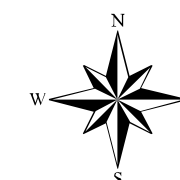


Malta Test Station Malta, New York

Legend

- FUDS Boundary
- MRS 1 Boundary =
MRA 1 Boundary

Source: United States Department
of Agriculture (2004).



0 270 540 1,080
Feet



Building Number Legend	
1 Fuel Storage Magazines	32 Record Storage
2 Fuel Storage Magazines	33 Fuel Additives
3 Fuel Storage Magazines	34 Igniter Storage
4 Fuel Storage Magazines	35 Test Structure
5 Heater Building	36 Control Station
6 Chemical Storage	37 Spec. Station
7 Recorder Building	38 Test Structure
8 Chemical Test Pit	39 Spec. Test
9 Fuel Test	40 Fuel Feed Test
10 Test Structure	41 Control Station
11 Test Structure	42 Shop
12 Test Structure	43 Pump Test
13 Control Station	44 Pump Test
14 Pneumatic Lab	45 Turbine Test
15 Rservoir and hyd. Lab.	46 Boiler House No. 1
16 CareTakers House	47 Control Station
17 Machine Shop	48 Igniter Storage
18 Office	49 Powder Storage
19 Canteen	50 Magazine
20 Office Building	51 Chemical Plant
21 Paint Shed	52 Heater Building
22 Maintenance Building	53 Shed
23 Warehouses	54 Gas Plant
24 Ram Jet Lab.	55 Heater Building
25 Warehouses	56 Bottle Storage
26 Warehouses	57 Shop
27 Warehouses	58 Control Station
28 Warehouses	59 Gas Storage
29 Pump Assembly	60 Prototype Test Pit
30 Power House	61 Gas Storage
31 Record Storage	62 Magazine

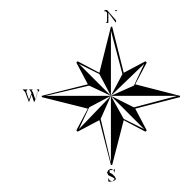
Figure 1. General Installation Map

Malta Test Station
Malta, New York

Legend

 FUDS Boundary

Source: United States Department
of Agriculture (1978).

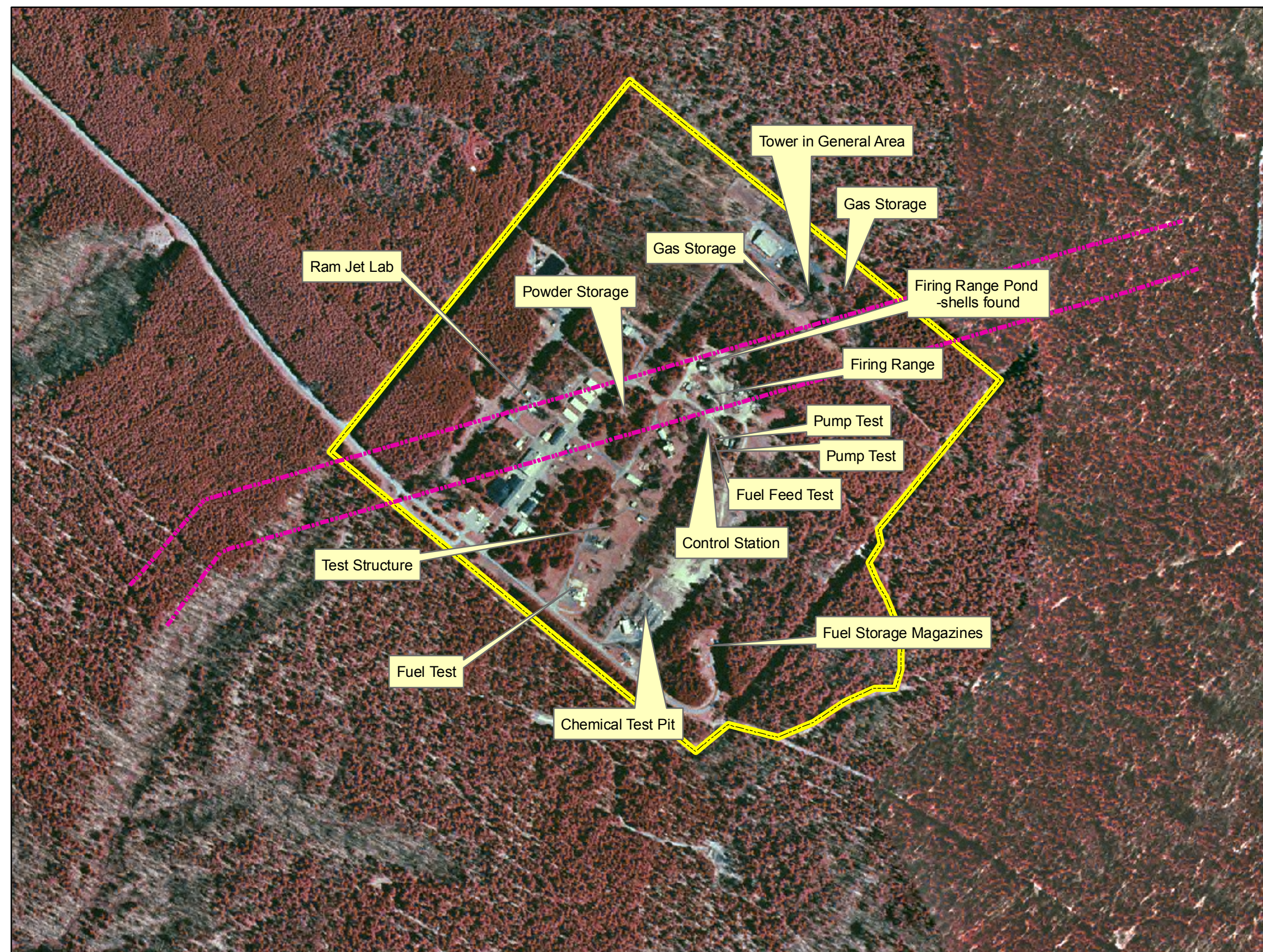


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Feet



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Figure 2. Historical Aerial (1978).



Malta Test Station Malta, New York

Legend

- FUDS Boundary
- Power Line Right of Way

Source of Aerial: United States
Department of Agriculture (2004).

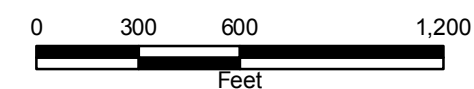
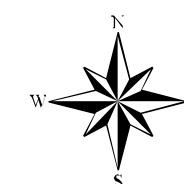


Figure 3. Historic Site Layout

Malta Test Station Malta, New York

Legend

- Line Right of Way
- Potential Ordnance Impact Area as per Ray Kazyaka (March 23, 2006)
- FUDS Boundary

Sources:
Luther Forest Technology Campus,
Potential Ordnance Impact Areas March 28, 2006

Potential Ordnance Impact Areas as per
Ray Kazyaka dated March 23, 2006

United States Department of Agriculture 2004

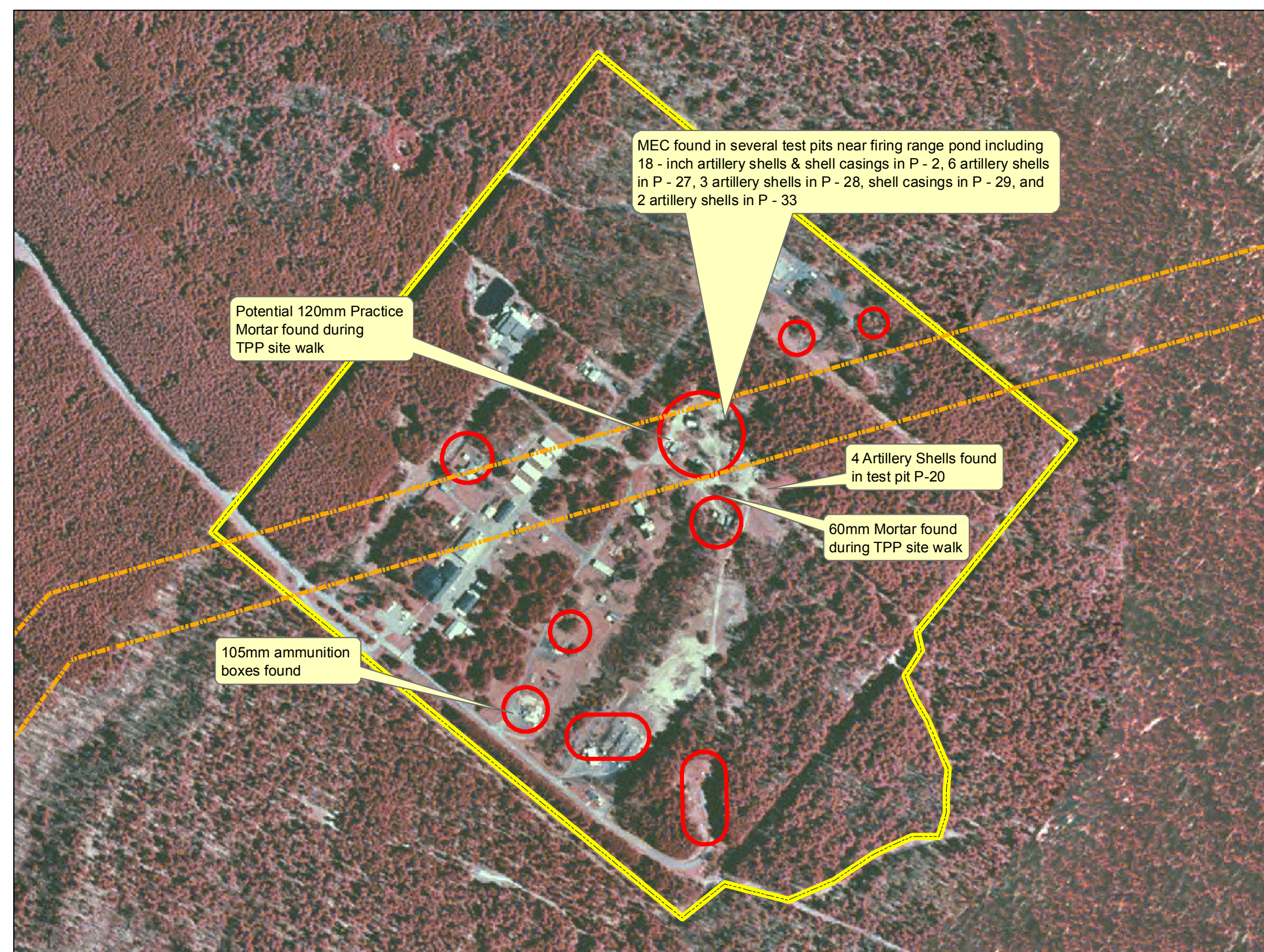
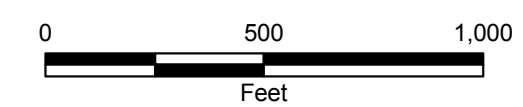
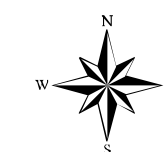
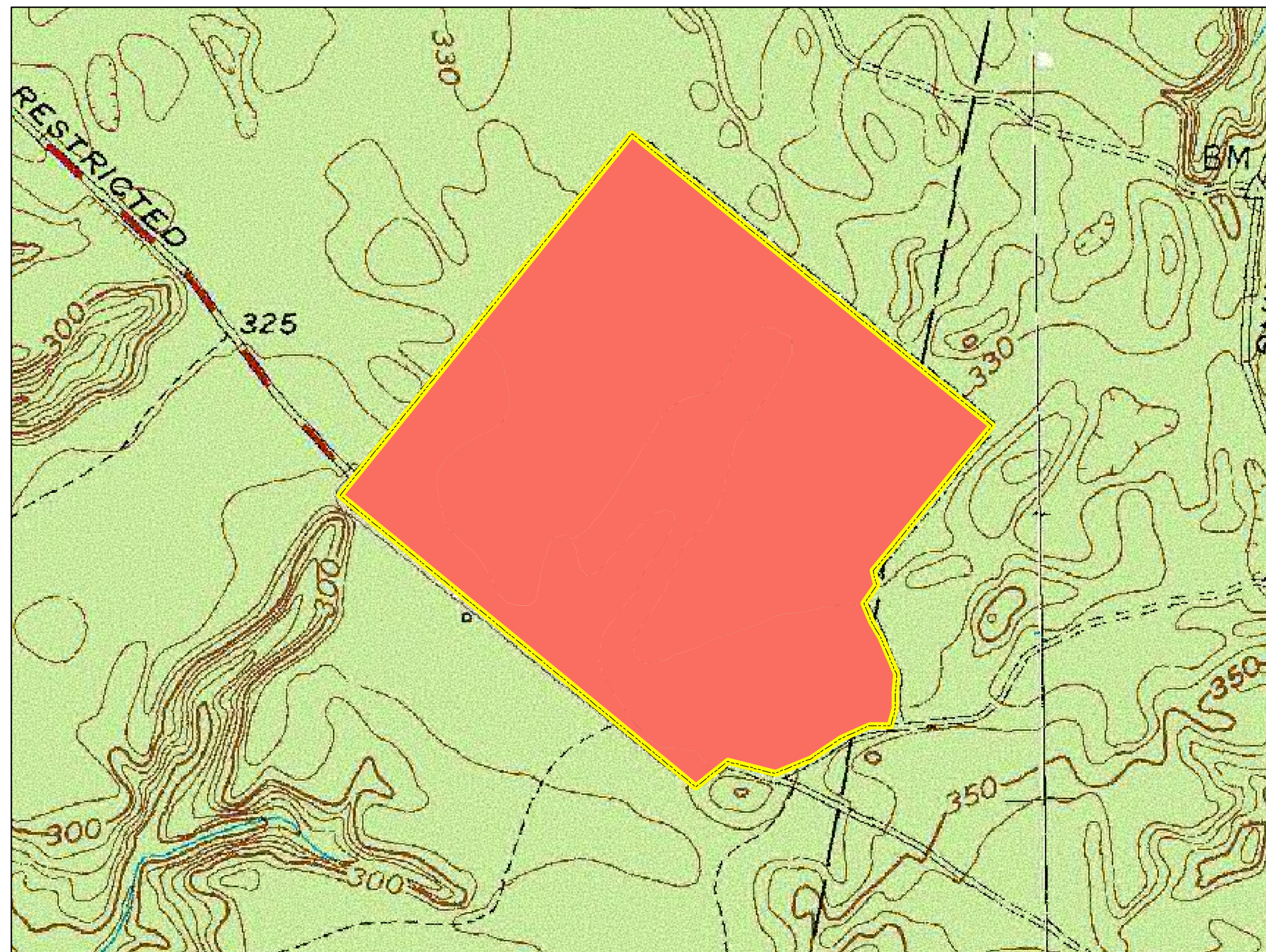


Figure 4. Potential Ordnance Impact Areas & MEC Discoveries.

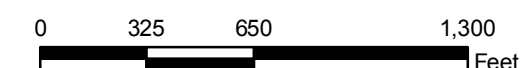
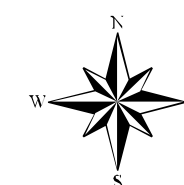


Malta Test Station Malta, New York

Legend

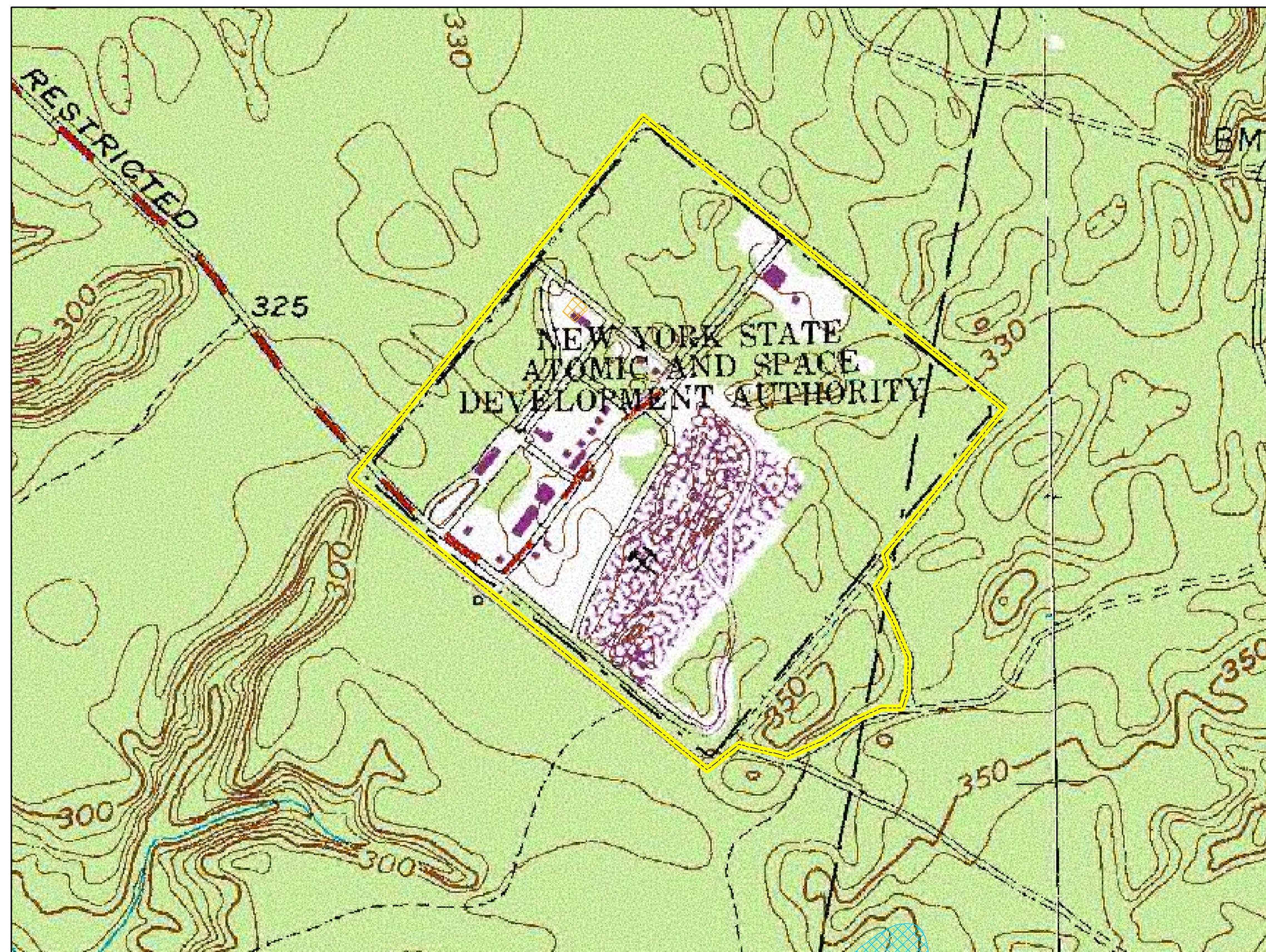
- FUDS Boundary
- Soils**
 - Oakville loamy fine sand

Source: United States Department of Agriculture (2002).



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Figure 5. Soils Map.

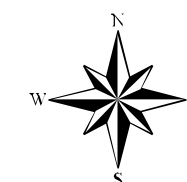


Malta Test Station
Malta, New York

Legend

- FUDS Boundary
- Wetlands**
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond

Source: United States Department
of Agriculture (2002).

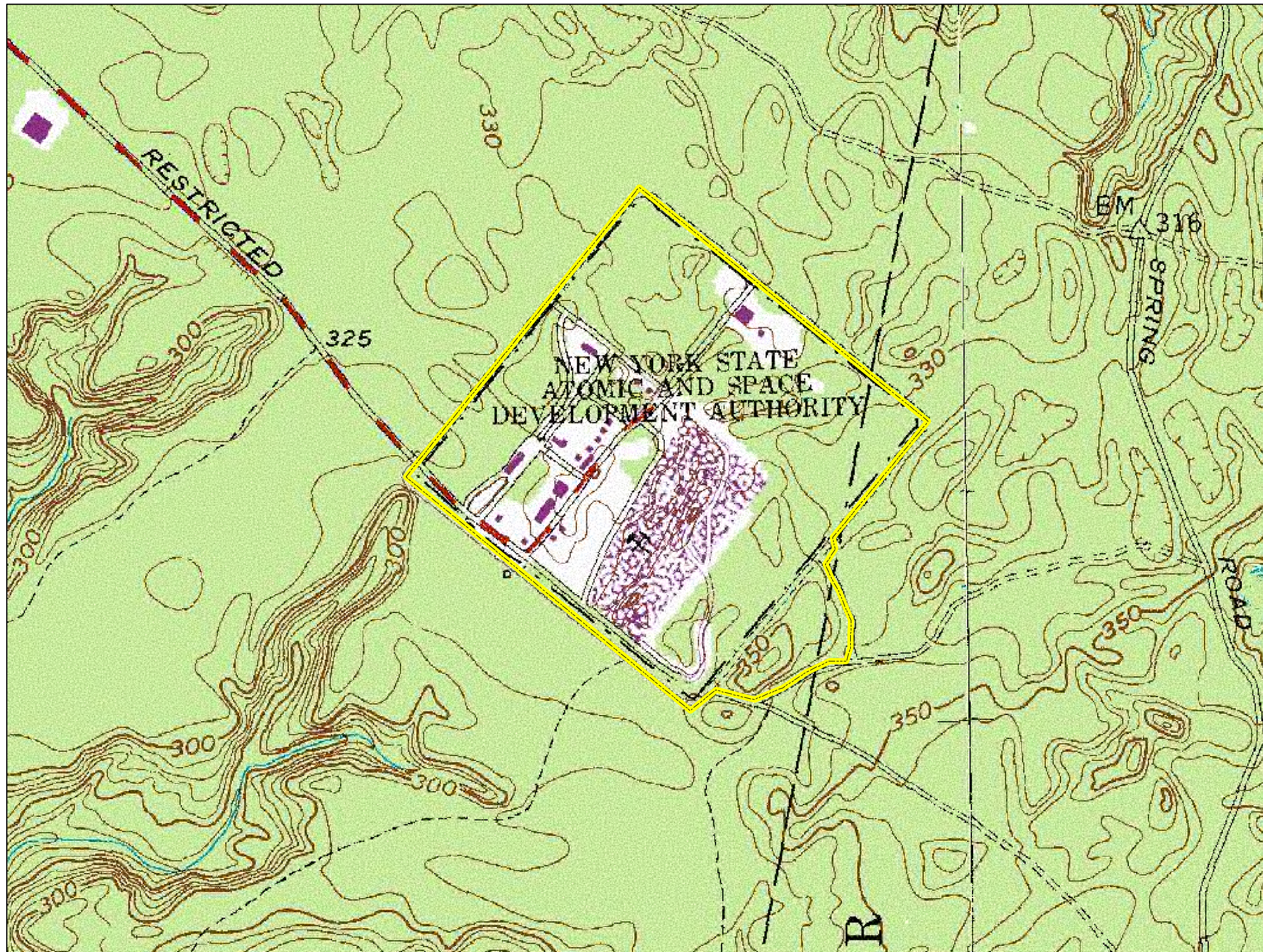


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Feet



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Figure 6. Wetlands and Water Bodies.

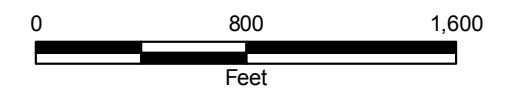
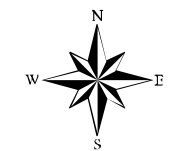


Malta Test Station
Malta, New York

Legend

 FUDS Boundary

Source:
United States Department of Agriculture (2002)



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Figure 7. Topography.

**Malta Test Station
Malta, New York**

Legend

- Proposed Sample Locations
- Potential Ordnance Impact Area as per Ray Kazyaka (March 23, 2006)
- ▭ FUDS Boundary

Sample ID Designation

"GCR-BT-SS-02-01"
Site Name-Sampling Location-Sample Type-Sample Depth-Sample #

- JL - Ram Jet Lab
- FT - Fuel Test
- MP - Muggetts Pond
- GS - Gas Storage
- CP - Chemical Test Pit
- PS- Powder Storage
- PT - Pump Test
- RP- Range Pond
- TS- Test Structure
- TP- Test Pit
- SM - Fuel Storage Magazines
- DD - Drainage Ditch

Source:
United States Department of Agriculture (2004)

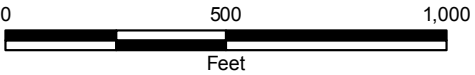
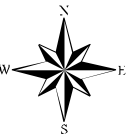


Figure 8. Proposed Sampling Locations.

**Malta Test Station
Malta, New York**

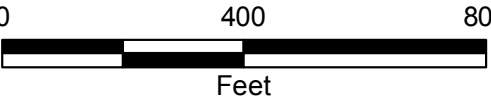
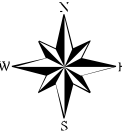
Legend

- Proposed Sample Locations
- Power Line Right of Way
- Geophysical Access Routes¹
- Geophysical Reconnaissance Area²
- Potential Ordnance Impact Area as per Ray Kazyaka (March 23, 2006)
- FUDS Boundary

¹ Access routes to/from sampling locations may be driven and therefore reconnaissance may not be performed as shown

² Shading does not represent 100% reconnaissance coverage of this area

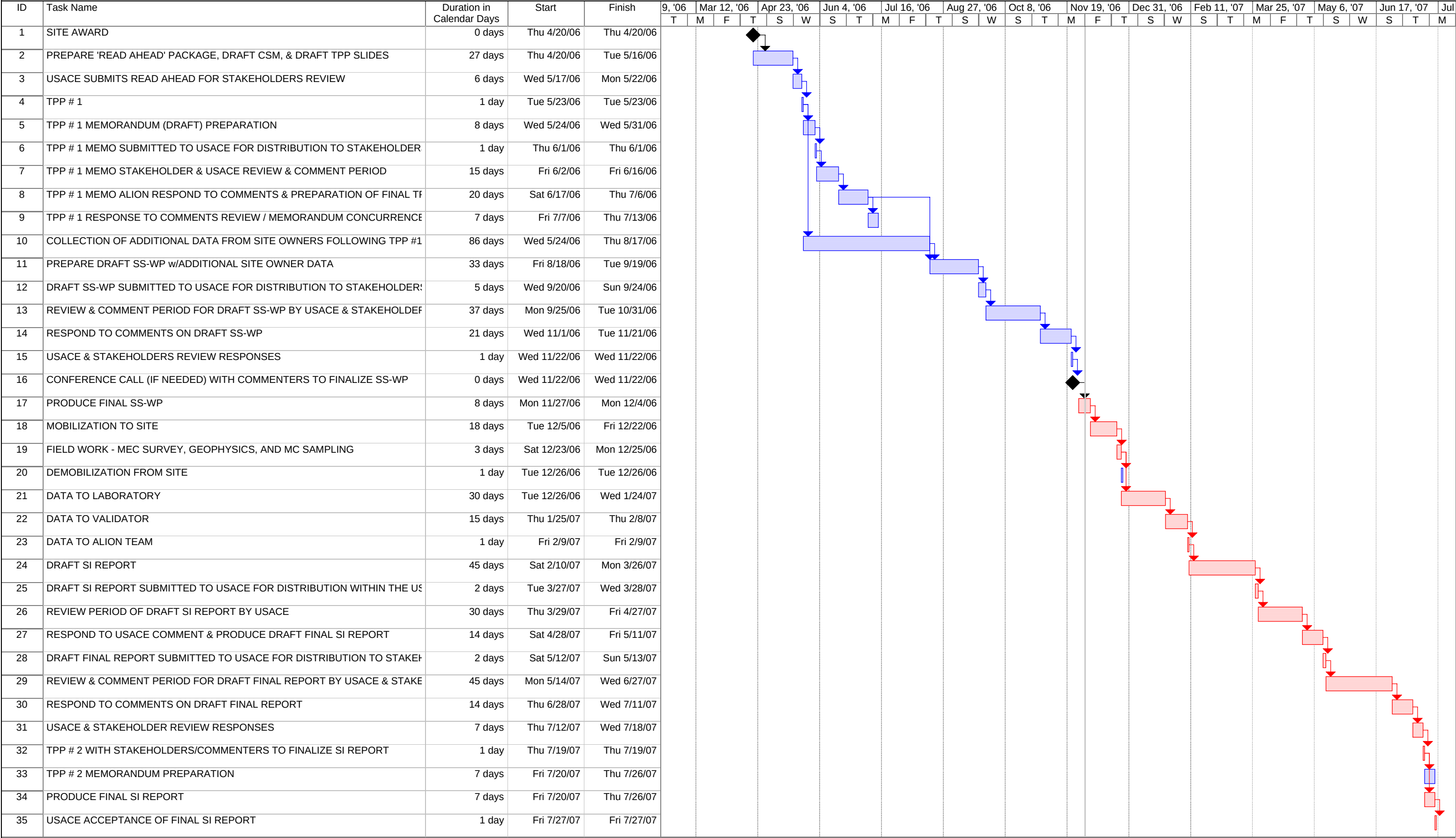
Source:
United States Department of Agriculture (2004)



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Figure 9. Proposed Geophysical Reconnaissance Areas.

MALTA TEST STATION



Reviewed 07/17/06
Final SSWP MALTA Schedule 112706

Task		Milestone		Rolled Up Critical Task		Split		Group By Summary	
Critical Task		Summary		Rolled Up Milestone		External Tasks		Deadline	
Progress		Rolled Up Task		Rolled Up Progress		Project Summary			

FIGURE 10 SCHEDULE FOR SITE INSPECTION OF MALTA TEST STATION PROJECT NO. C02NY0898

**APPENDIX B—DATA QUALITY OBJECTIVE WORKSHEETS AND
MEASUREMENT QUALITY OBJECTIVES**

Data Quality Objective Worksheet	
Site: Malta Test Station Project: FUDS MMRP SI Project Number C02NY089802 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, Subsurface soil, and sediment. MC – Surface soil, subsurface soil sediment, surface water and ground water sampling.
Required Sampling Locations or Areas	MEC and MC: Areas where military munition-related operations occurred and/or where MEC or MPPEH has been identified historically based on existing documentation and interviews.
Number of Samples Required	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. MC - Sampling to include: 12 surface soil samples, 2 subsurface soil samples, 2 sediment, 2 surface water, and 3 groundwater samples.
Reference Concentration of Interest or Other Performance Criteria	MEC: If historic data indicate the presence of MEC and one anomaly classified as of material potentially presenting and explosive hazard (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 MEC found previously may be considered an anomaly and NDAI may be recommended. In each of these instances, all lines of evidence (e.g., 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 (e.g., historic

Data Quality Objective Worksheet	
Site: Malta Test Station Project: FUDS MMRP SI Project Number C02NY089802 DQO Statement Number: 1 of 4	
DQO Element Description	Site-Specific DQO Statement
	data, field data, background concentration of metals, etc. for both MEC and MC) will be used to make a final decision for an NDAI or RI/FS. MC: If SI findings/results exceed federal or state Maximum Contaminant Levels (MCLs), Preliminary Remediation Goals (PRGs), Risk Based Concentrations (RBCs) (based on current and future land use), or site-specific background levels and those exceedances result in a potential risk to receptors as identified through human health and ecological risk assessments, an RI/FS may be recommended for the site. If no exceedances are present and acceptable risks are identified for the receptors, then an NDAI may be recommended. In both instances (RI/FS or NDAI), all lines of evidence (e.g., historic data, field data, background concentration of metals, etc. for both MEC and MC) will be used to make a final decision for an NDAI or RI/FS. Screening values selected for this site are specified in the chemical-specific measurement quality objective (MQO) Tables.
Appropriate Sampling and Analysis Methods:	
Sampling Method and Depths	MEC: Geophysics with a handheld analog magnetometer, which will 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 used as an additional documentation method. Geophysical methods/procedures are described in detail in Section 3 of the SS-WP, and the Field Activities section of the programmatic field sampling plan (PFSP). MC: Sampling methods for MC are described in detail in Section 4 of the S-SWP, and Field Activities section of the PFSP.
Analytical Method	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 Baltimore District Design Center, and USACE Center of Expertise. MC: The following analytical methods are proposed: Explosives Methods - SW8330A, SW8330M; Explosives Prep Methods – SW8330A; Metals Prep Method – 3050B/3050M.

Data Quality Objective Worksheet	
Site: Malta Test Station Project: FUDS MMRP SI Project Number C02NY089802 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 in the surface/subsurface
Media of Interest	Surface soil, subsurface soil, sediment, surface water and groundwater.
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.
Number of Samples Required	Refer to DQO 1 for MC/MEC sampling parameters.
Reference Concentration of Interest or Other Performance Criteria	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, one of two actions may be initiated: <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. <u>NonTCRA</u> - A nonTCRA (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.
Appropriate Sampling and Analysis Methods:	
Sampling Method and Depths	MEC: Geophysical methods/procedures are described in detail in Section 3

Data Quality Objective Worksheet	
Site: Malta Test Station Project: FUDS MMRP SI Project Number C02NY089802 DQO Statement Number: 2 of 4	
DQO Element Description	Site-Specific DQO Statement
	of the SS-WP, and the Field Activities section of the programmatic field sampling plan (PFSP). MC: Sampling methods for MC are described in detail in Section 4 of the S-SWP, and Field Activities section of the PFSP.
Analytical Method	Refer to DQO 1 for MEC and MC analytical methods to be incorporated.

Data Quality Objective Worksheet	
Site: Malta Test Station Project: FUDS MMRP SI Project Number C02NY089802 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, for 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 soil, subsurface soil, sediment, surface water and groundwater.
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 DQO 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 National Priorities List (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: Malta Test Station Project: FUDS MMRP SI Project Number C02NY089802 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 (MRSP).
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, subsurface soil, sediment, surface water 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 Surface Fresh Water

Analyte	Abbreviation	CAS #	NYSDEC Rules and Regulations, 6 NYCRR Part 703, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations ^c (Amended August, 1999) (µg/L)	EPA National Recommended Water Quality Criteria: 2006 ^b National Recommended Water Quality Criteria for Priority Toxic Pollutants, Freshwater, CCC ^a (µg/L)	Lowest Regulatory Value (µg/L)	Preferred Maximum Method Quantitation Limit* Aqueous (µg/L)	Lab MDL (µg/L)	Lab Reporting Limit (µg/L)
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	121-82-4	-	-	-	-	0.17	0.77
Octahydro-1,3,5,7-tetranitro-1,3,5,7-	HMX	2691-41-0	-	-	-	-	0.090	0.40
2,4,6-Trinitrotoluene	2,4,6-TNT	118-96-7	-	-	-	-	0.044	0.33
1,3,5-Trinitrobenzene	1,3,5-TNB	99-35-4	-	-	-	-	0.031	0.21
1,3-Dinitrobenzene	1,3-DNB	99-65-0	-	-	-	-	0.042	0.20
2,4-Dinitrotoluene	2,4-DNT	121-14-2	-	-	-	-	0.066	1.04
2,6-Dinitrotoluene	2,6-DNT	606-20-2	-	-	-	-	0.090	0.30
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	-	-	-	-	0.045	0.20
2-Nitrotoluene	2-NT	88-72-2	-	-	-	-	0.051	0.40
3-Nitrotoluene	3-NT	99-08-1	-	-	-	-	0.26	0.79
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	-	-	-	-	0.058	0.20
4-Nitrotoluene	4-NT	99-99-0	-	-	-	-	0.098	0.40
Nitrobenzene	NB	98-95-3	0.4	30 ^d	0.4	0.2	0.037	0.20
Nitroglycerin	NG	55-63-0	-	-	-	-	0.081	2.00
Methyl-2,4,6-trinitrophenylnitramine	Tetryl	479-45-8	-	-	-	-	0.16	0.75
Pentaerythritol Tetranitrate	PETN	78-11-5	-	-	-	-	0.08	1.30

^a All values represent Freshwater CCC values, unless identified as CMC value

^b (EPA 2006)

^c National Recommended Water Quality Criteria for Non Priority Pollutants

^d National Recommended Water Quality Criteria for Organoleptic Effects

^e (NYSDEC 1999b)

Table 2 Evaluation of Potential Chemical-Specific Measurement Quality Objectives for Groundwater Human Health

Analyte	Abbreviation	CAS #	EPA Region 9 Preliminary Remediation Goals (PRGs) Table ^e (2004), “Direct Contact Exposure Pathways,” Tap Water ^f (µg/L)	EPA (822-R-04-005) 2004 Edition of the Drinking Water Standards and Health Advisories ^c , MCLs (µg/L)	NYSDEC Rules and Regulations, 6 NYCRR Part 703, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations ^d (Amended August, 1999) (µg/L)	Lowest Regulatory Value (µg/L)	Preferred Maximum Method Quantitation Limit Aqueous * (µg/L)	Lab MDL (µg/L)	Lab Reporting Limit (µg/L)
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	121-82-4	0.61	-	-	0.61	0.305	0.17	0.77
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	2691-41-0	180	-	-	180	90	0.090	0.40
2,4,6-Trinitrotoluene	2,4,6-TNT	118-96-7	2.2	-	5	2.2	1.1	0.044	0.33
1,3,5-Trinitrobenzene	1,3,5-TNB	99-35-4	110	-	5	5	2.5	0.031	0.21
1,3-Dinitrobenzene	1,3-DNB	99-65-0	0.36	-	5	0.36	0.185	0.042	0.20
2,4-Dinitrotoluene	2,4-DNT	121-14-2	7.3	-	5	5	2.5	0.066	1.04
2,6-Dinitrotoluene	2,6-DNT	606-20-2	3.6	-	5	3.6	1.8	0.090	0.30
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	0.73	-	-	0.73	0.365	0.045	0.20
2-Nitrotoluene	2-NT	88-72-2	0.049	-	5	0.049	0.00245	0.051	0.40
3-Nitrotoluene	3-NT	99-08-1	12	-	5	5	2.5	0.26	0.79
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	0.73	-	-	0.73	0.365	0.058	0.20
4-Nitrotoluene	4-NT	99-99-0	-	-	5	5	2.5	0.098	0.40
Nitrobenzene	NB	98-95-3	0.34	-	0.4	0.34	0.175	0.037	0.20
Nitroglycerin	NG	55-63-0	4.8	-	-	4.8	2.4	0.081	2.00
Methyl-2,4,6-trinitrophenylnitramine	Tetryl	479-45-8	-	-	-	-	-	0.16	0.75
Pentaerythritol Tetranitrate	PETN	78-11-5	-	-	-	-	-	0.08	1.30

^a Secondary Drinking Water Regulations of the 2004 Edition of the Drinking Water Standards and Health Advisories

^b Drinking Water Advisory Table of the 2004 Edition of the Drinking Water Standards and Health Advisories

^c (EPA 2004a)

^d (NYSDEC 1999b)

^e (EPA 2004b)

^f Value of Noncancerous compounds were divided by 10

EN = Essential Nutrient

Table 3 Evaluation of Potential Chemical-Specific Measurement Quality Objectives for Sediment							
Analyte	Abbreviation	CAS #	NYSDEC, Division of Fish, Wildlife and Marine Resources, Technical Guidance for Screening Contaminated Sediments ^a (January 25, 1999), Lowest Effect Level (mg/kg)	Lowest Regulatory Value (mg/kg)	Preferred Maximum Method Quantitation Limit (QL), Soil * (mg/kg)	Lab MDL (mg/kg)	Lab Reporting Limit (mg/kg)
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	121-82-4	-	-	-	0.021	0.063
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	2691-41-0	-	-	-	0.00653	0.0532
2,4,6-Trinitrotoluene	2,4,6-TNT	118-96-7	-	-	-	0.00673	0.0392
1,3,5-Trinitrobenzene	1,3,5-TNB	99-35-4	-	-	-	0.00500	0.0200
1,3-Dinitrobenzene	1,3-DNB	99-65-0	-	-	-	0.00459	0.0200
2,4-Dinitrotoluene	2,4-DNT	121-14-2	-	-	-	0.00407	0.0200
2,6-Dinitrotoluene	2,6-DNT	606-20-2	-	-	-	0.00777	0.0399
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	-	-	-	0.00926	0.0278
2-Nitrotoluene	2-NT	88-72-2	-	-	-	0.0234	0.0701
3-Nitrotoluene	3-NT	99-08-1	-	-	-	0.0133	0.040
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	-	-	-	0.0131	0.0395
4-Nitrotoluene	4-NT	99-99-0	-	-	-	0.0117	0.0400
Nitrobenzene	NB	98-95-3	-	-	-	0.00572	0.0200
Nitroglycerin	NG	55-63-0	-	-	-	0.43	5.0
Methyl-2,4,6-trinitrophenylnitramine	Tetryl	479-45-8	-	-	-	0.00832	0.0651
Pentaerythritol Tetranitrate	PETN	78-11-5	-	-	-	0.03943	0.500

^a(NYSDEC 1999a)

Table 4 Evaluation of Potential Chemical-Specific Measurement Quality Objectives for Soil

Analyte	Abbreviation	CAS #	NYSDEC Recommended Soil Cleanup Objectives ^b (TAGMs) (mg/kg)	EPA Interim Eco-SSLs (mg/kg)	EPA Region 9 Preliminary Remediation Goals (PRGs) Table ^c (2004), “Direct Contact Exposure Pathways,” Residential Soil ^a (mg/kg)	EPA Region 9 Preliminary Remediation Goals (PRGs) Table ^c (2004), Soil Screening Levels, Migration to Ground Water, DAF 20 (mg/kg)	Lowest Regulatory Value (mg/kg)	Preferred Maximum Method Quantitation Limit, Soil * (mg/kg)	Lab MDL (mg/kg)	Lab Reporting Limit (mg/kg)
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	121-82-4	-	-	4.4	-	4.4	2.2	0.021	0.063
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	2691-41-0	-	-	310	-	310	155	0.00653	0.0532
2,4,6-Trinitrotoluene	2,4,6-TNT	118-96-7	-	-	16	-	16	8	0.00673	0.0392
1,3,5-Trinitrobenzene	1,3,5-TNB	99-35-4	-	-	180	-	180	90	0.00500	0.0200
1,3-Dinitrobenzene	1,3-DNB	99-65-0	-	-	0.61	-	0.61	0.305	0.00459	0.0200
2,4-Dinitrotoluene	2,4-DNT	121-14-2	-	-	12	0.0008	0.0008	0.0004	0.00407	0.0200
2,6-Dinitrotoluene	2,6-DNT	606-20-2	-	-	6.1	0.0007	0.0007	0.00035	0.00777	0.0399
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	-	-	1.2	-	1.2	0.6	0.00926	0.0278
2-Nitrotoluene	2-NT	88-72-2	-	-	0.88	-	0.88	0.44	0.0234	0.0701
3-Nitrotoluene	3-NT	99-08-1	-	-	73	-	73	36.5	0.0133	0.040
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	-	-	1.2	-	1.2	0.6	0.0131	0.0395
4-Nitrotoluene	4-NT	99-99-0	-	-	12	-	12	6	0.0117	0.0400
Nitrobenzene	NB	98-95-3	0.2	-	2.0	0.1	0.1	0.05	0.00572	0.0200
Nitroglycerin	NG	55-63-0	-	-	35	-	35	17.5	0.43	5.0
Methyl-2,4,6-trinitrophenylnitramine	Tetryl	479-45-8	-	-	-	-	-	-	0.00832	0.0651
Pentaerythritol Tetranitrate	PETN	78-11-5	-	-	-	-	-	-	0.03943	0.500

^a Value of Noncancerous compounds were divided by 10

^b (NYSDEC 1994)

^c (EPA 2004b)

^d (EPA 2003)

EN = Essential Nutrient

As identified in Table C-1 (bolded analytes, analytes in bold and italics, and non bolded analytes), three scenarios need to be evaluated to determine if the MQOs are appropriate for meeting the DQOs. The scenarios are as follows: (1) those instances where the Preferred Maximum Method Quantitation Limits (PMMQL) are less than method detection limits (MDL), (2) the scenario when the PMMQL is greater than the MDL, but less than the reporting limit (RL), and (3) the third scenario when the PMMQL is greater than the RL (i.e. the DQO will be met). A discussion of each scenario and how it relates to achieving the DQOs for MC is included below.

Scenario 1

Bolded items identified in Table C-1 are those analytes that have PMMQLs which are less than the laboratory MDLs (specifically antimony, arsenic, and thallium). These PMMQLs are established by taking one-half of the most stringent of either Human Health Screening Values or Ecological Screening Values. The antimony PMMQL is established on ½ of the ECO-SSL and the arsenic PMMQL is established on ½ of the Region 9 residential soil PRG. The method used for analysis of arsenic provides the lowest possible MDL and RL for this compound. Because the laboratory will be reporting detected antimony and arsenic between the RL and MDL, the DQO of identifying risks associated with exposure to arsenic will be met. In addition, because of the matrix, it is expected that all of these metals will be reported above the RL. The screening value used for thallium is the Region 9 PRG, and because thallium is a non-carcinogenic chemical, the PRG was divided by 10, based on a conservative assumption that 10 chemicals driving risk at the site all impact the same target organ, which is a very conservative assumption. This, plus the expectation that thallium will be found above the RL in all soil samples would indicate that DQOs have not been negatively impacted.

Scenario 2

As shown in Table C-1, the bolded italic items represent analytes which have a PMMQL which is less than the RL, but greater than the MDL. Two analytes, specifically beryllium and cadmium have PMMQLs which are between the RLs and MDLs for soil. The laboratory will be reporting detected analytes between the RL and the MDL. In addition, because of the matrix, it is expected that all of these metals will be reported above the RL. It is not expected that data quality will be impacted for any of these metals.

Scenario 3

The PMMQ is greater than the RL for the remaining analytes (those analytes not identified in scenarios 1 or 2). DQOs will be met for these items.

Summary of MQO Evaluation

The methodologies proposed for the analysis of each analyte is the best available standard technique. For results, the laboratory will report any detection between RL and MDL for the analytes; therefore, the MQO will not be compromised. In addition, any uncertainty associated with reporting between the MDL and RL will be discussed in the risk assessments which are not likely to be negatively impacted since the Risk Assessment takes into account all sample results and MDLs. Therefore, the DQOs will still be met.

References

- New York State Department of Environmental Conservation (NYSDEC). 1994. Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels. Available from <http://www.dec.state.ny.us/website/der/tagms/prtg4046.html> Accessed on 20 March 2006.
- NYSDEC. 1999a. Technical Guidance for Screening Contaminated Sediments. Available from <http://www.dec.state.ny.us/website/dfwmr/habitat/seddoc.pdf> Accessed on 20 March 2006.
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- EPA. 2003. Ecological Soil Screening Level for Aluminum. Available from http://www.epa.gov/ecotox/ecossl/pdf/eco-ssl_aluminum.pdf Accessed 20 February 2006.
- EPA. 2004a. 2004 Edition of the Drinking Water Standards and Health Advisories. EPA 822-R-04-005. Available from <http://www.epa.gov/waterscience/drinking/standards/dwstandards.pdf> Accessed 20 February 2006.

APPENDIX C—TPP MFR Worksheets

Technical Project Planning

Draft Phase I MFR Worksheet

Author(s): Alion Team

Latest Revision Date: 6 September 2006

Reviewer:

Review Date:

Location: Malta and Stillwater, New York

Site(s): Malta Test Station

Project: MMRP Project C02NY089801

(Attach Phase I MFR to PMP)

TPP Team		EM 200-1-2, Paragraph 1.1.1	
Decision Maker			
Customer	USACE		
Project Manager	Gregory Goepfert- USACE New York District; Robert Williams-USACE Baltimore District		
Team Leaders	Corinne Shia—Alion Team, Tim Reese—Alion Team		
Regulators	NYSDEC, USEPA, NYSDOH		
Stakeholders	Luther Forest Technology Economic Development Corp (LFTCEDC) (Owner) Saratoga Economic Development Corp. Wright Malta Corp. GE Corp. NYSERDA		
Data Types	Data User	Data Gatherer	
Compliance / Regulatory (CR)	USACE – Baltimore / New York / Huntsville Districts	Alion Team	
Demographics/Land Use (LU)	USACE – Baltimore / New York / Huntsville Districts	Alion Team	
Site Conditions (SC)	USACE – Baltimore / New York / Huntsville Districts	Alion Team	
Munitions and Explosives of Concern (MEC)	USACE – Baltimore / New York / Huntsville Districts	Alion Team	

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)
Land Development	Potential for metals, explosives and perchlorate in soil as well as munitions and explosives of concern (MEC)	
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 access following any remediation, maintenance, and monitoring for activities that are consistent with the current and future land use (land development) of the site.		
Customer's Schedule Requirements		
The USACE and Alion Team will work with LFTCEDC to identify and implement schedule accelerations where possible to complete the project prior to October 2007.		
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
1980 INPR, amended November 2005	USACE - New York	Yes
1989 Aerial Photo Report (EPA)	LFTCEDC	No
1991 Archaeological Survey (Hartgen Archaeological Association)	LFTCEDC	No
1992 Cultural Resources Survey (Hartgen Archaeological Association)	LFTCEDC	No
1992 Literature Search Report (LSR) (Geraghty & Miller)	LFTCEDC	No
1995 EPA Remedial Investigation (RI) Report	USACE - New York	Yes
1999 EPA Superfund Preliminary Site-Closeout Report	USACE - New York	Yes
2006 Luther Corporation Environmental Site Assessment	USACE - New York	Yes
POTENTIAL POINTS OF COMPLIANCE EM 200-1-2, Paragraph 1.2.1.3		
NYSDEC Regulations (within boundaries of areas of concern)		
Region II USEPA (within boundaries of areas of concern)		
MEDIA OF POTENTIAL CONCERN EM 200-1-2, Paragraph 1.2.1.4		
Surface and Subsurface Soil		
Groundwater		
SITE OBJECTIVES EM 200-1-2, Paragraph 1.2.2		
See attached		
REGULATOR AND STAKEHOLDER PERSPECTIVES EM 200-1-1, Paragraph 1.2.3		
Regulators	Community Interests	Others
PROBABLE REMEDIES EM 200-1-2, Paragraph 1.2.4		
Detonation or removal of suspect MEC 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			
Remedial Investigation/Feasibility Study or NDAI			
Proposed Plan			
ROD/Decision Document			
Remedial Design			
Remedial Action			
Removal Action (if necessary)			
SITE CONSTRAINTS AND DEPENDENCIES		EM 200-1-2, Paragraph 1.3.1	
<u>Administrative Constraints and Dependencies</u>			
SI needs to be completed by October 2007 to meet program needs. Access agreements need to be in place prior to sampling. Acceptance of Programmatic Work Plan and Site-specific Work Plan Addendum.			
<u>Technical Constraints and Dependencies</u>			
Need MEC avoidance for sampling. Need to work with the stakeholders to gain access to site.			
Need to abide by Health and Safety Plan			
<u>Legal and Regulatory Milestones and Requirements</u>			
No agreements or permits in place between USACE or Owner and Regulatory Personnel			
Regulatory evaluation of SI work plan and reporting of SI results and recommendations			
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)	
Sample collection effort minimal for MC MEC analysis			

Acronyms

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

NDAI--No Department of Defense Action Indicated

RA--Removal Action

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

TPP--Technical Project Planning

MEC - Munitions and Explosives of Concern

MC - Munitions Constituents

PROJECT OBJECTIVES WORKSHEET

SITE: **C02NY089801**
PROJECT: **Malta Test Station, Malta, NY**

Page 1 of 2

Site Objective ^a				Source	Data Needs ^d	Data Collection Methods	Project Objective Classification ^e
Number	Executable Stage ^b		Description ^c				
	Current	Future					
1	Yes		Determine the presence/absence of MEC.	Prior Reports	CR, LU, SC, UXO	MEC Visual inspection, MC Sampling	Basic
2	Yes		Eliminate from further consideration those releases that pose no significant threat to public health or the environment by collecting adequate samples to assess the presence or absence of MEC/MC at the site.		CR, LU, SC, UXO	MEC Visual inspection, MC Sampling	Basic
3	Yes		Determine the potential need for an emergency response action and/or Time Critical Removal Action (TCRA) of MEC by collecting data from previous investigations/reports, conducting site visits, and performing analog geophysical activities as necessary or as appropriate.		CR, LU, SC, UXO	MEC Visual inspection, MC Sampling	Basic
4	Yes		Collect data, as appropriate, to determine if a release has occurred to confirm the need to transition the project into a Remedial Investigation and Feasibility Study (RI/FS).		LU, SC, UXO	MEC Visual inspection, MC Sampling	Basic
5	Yes		Collect additional data, as appropriate, for Hazard Ranking System (HRS) scoring that will be performed by the U.S. Environmental Protection Agency (EPA).		CR, LU, SC, UXO	MEC Visual inspection, MC Sampling	Basic

6	Yes		Collect the additional data necessary to complete the Munitions Response Site Prioritization Protocol (MRSP).		CR, LU, SC, UXO	MEC Visual inspection, MC Sampling	Basic
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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 Regulation____,

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

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

NDAI--No Department of Defense Action Indicated

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type impact analysis conducted
during INPR, ASR, and
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TPP-Technical Project Planning

MEC - Munitions and Explosives of Concern

MC - Munitions Constituents

APPENDIX D—LOGS AND FORMS USED DURING THE SITE INSPECTION

HEALTH AND SAFETY ACTIVITY REPORT

Site: Malta Test Station Location: _____

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:

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: Malta Test Station		Contract Number: W912DY-04-D-0017	
Location of Work: Malta and Stillwater, NY			
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)

FINAL



Response to Comments – Site-Specific Work Plan Addendum for the Site Inspection of the Malta Test Station

FUDS Project # **C02NY089801**

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

Prepared for:
U.S. Army Engineering and Support Center, Huntsville
4280 University Square
Huntsville, AL 35807
and
U.S. Army Corps of Engineers, Baltimore District
City Crescent Building
10 South Howard Street, 10th Floor
Baltimore, Maryland 21201

Prepared by:



November 2006

PROJECT: FORMER MALTA TEST STATION MMRP SITE INSPECTION (SI) C02NY089802			
DESIGN REVIEW COMENTS			
		REVIEW:	DRAFT TPP Memo
		DATE:	20 October 2006
		NAME:	Gregory J. Goepfert, Project Manager
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1		Inside cover sheet, project number is C02NY089802	A – Concur. The cover sheet has been revised as requested.
2	Pg. 1-5, 2 nd bullet and Pg. 3-9	Instead of saying USACE and Alion don't have the authority to call EOD, say more positively: The local authorities are authorized to call EOD.	A – Concur. The text has been revised to the following: “The local response authority will decide on whether or not to respond to the reported incident. The local authorities are authorized to call EOD to respond to an explosives hazard.”
3	Pg. 3-2, para. 3.4.0.2	Next to last and last sentence, replace HTRW with “under ongoing environmental investigations by others.....”	A – Concur. HTRW has been removed from these sentences.
4	Pg. 3-2, para. 3.4.0.4	Replace HTRW with “under ongoing environmental investigations by others.....”	A – Concur. Paragraph 3.4.0.4 has been revised as requested.
5	Pg. 3-3, para. 3.4.0.5	Replace PRP/HTRW project with “under ongoing environmental investigations by others.....”	A – Concur. Paragraph 3.4.0.5 has been revised as requested.
6	Pg. 3-6, para. 3.5.1.2	What does LSR stand for?	A – Concur. Literature Search Report (LSR) has been defined in the text in Paragraph 3.5.1.2.
7	Pg. 4.7, para. 4.3.5, last sentence	Can't you just say that we are not analyzing for TAL metals because it was done by others (then reference Section 2.5)?	A-Concur. The last sentence of Paragraph 4.3.5, as well as paragraphs 4.3.2, 4.3.3, and 4.3.4, have been revised as follows: “TAL metals have been analyzed during previous investigations at the site and will not be analyzed during this SI (see Section 2.5).”
8	Pg. 4.7, para. 4.3.6	Does LFTEDC own these wells? If not, we may have to get permission from the owner of the wells to use them. Also, by using someone else's wells, are we running the risk that they are not in good condition? Perhaps we should not depend on this.	Comment noted. The LFTEDC wells will no longer be sampled during the SI. Instead, the Alion team will collect three groundwater samples from three direct push GeoProbe locations.
9	Pg. 4.8, para. 4.5.1	Please strike all reference here and throughout the document to an ASR (Archive Search Report); there has not been an ASR completed for this site.	A – Concur. Revised as requested. All references to an ASR have been removed from the document.

ACTION CODES: A-ACCEPTED/CONCUR; D-ACTION DEFERRED; W-WITHDRAWN; N-NON-CONCUR; V-VE POTENTIAL/VEP ATTACHED

PROJECT: Malta Test Station Draft SI Work Plan: October 20, 2006			
U. S. Army Corps of Engineers Design Center – Baltimore District			
DESIGN REVIEW COMENTS			
REVIEW: OESS DATE: October 20, 2006 NAME: Liza Finley			
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1		There is no representation of adult/child resident as a future receptor, is there any rationale that the Malta Site will never be turned over for development? If not, then the residential exposure pathways need to be considered	A-Concur. Residential land use is not planned either currently or in the future according to discussions with LFTEDC during the TPP and Section 2.5 of this SS-WP. Therefore, residents are not considered to be probable receptors.
2		The exposure pathways for the MEC exposure have both the current and future receptors as potential to both surface soil and subsurface soil. One, does the Malta Test facility currently have accessibility to trespassers? And two, is it very likely that the trespasser and employee receptors will have access to the subsurface MEC at Malta?	The Malta Test Facility property is surrounded by a fence, however; trespassers could access the site. Trespassers and employees (commercial workers are unlikely to access subsurface MEC/MC at Malta Test Station. The CSM diagram (figure 12) has been modified to show an incomplete pathway for trespassers and commercial workers to subsurface MEC/MC.

ACTION CODES: A-ACCEPTED/CONCUR; D-ACTION DEFERRED; W-WITHDRAWN; N-NON-CONCUR; V-VE POTENTIAL/VEP ATTACHED

PROJECT: Malta Test Station Draft SI Work Plan: October 20, 2006 U. S. Army Corps of Engineers Design Center – Baltimore District DESIGN REVIEW COMENTS			
REVIEW: DATE: October 12, 2006 NAME: Jack A. Kelley			
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1	Section 2.2, 2.4 and 3.4.2:	It should be stated in these sections that the perpetual easement/one mile safety easement has been extinguished by LFTCEDC. Legal documentation of such could be provided to demonstrate that the one mile safety easement no longer exists..	A-Concur. Sections 2.2, 2.4, and 3.4.2 have been modified to state that the easement no longer exists.
2	Section 2.6.2:	Mr. Kazyaka also was the prior site manager of the Malta Test Station under the prior ownership of Wright-Malta Corporation. This should be specified in this section to provide a more substantial basis for Mr. Kazyaka's prior recollections of historical activities at the Malta Test Station (i.e., before he became site manager for LFTCEDC).	A-Concur. Section 2.6.2 has been revised as follows: "The current Malta Test Station Site Manager, Ray Kazyaka, provided the Alion Team with a map designating potential ordnance impact areas at the site, as shown in Figure 4 (2006). Mr. Kazyaka was the prior Site Manager at the Malta Test Station under the prior ownership of Wright-Malta Corporation. Mr. Kazyaka indicated during the TPP site walk that 105 mm ammunition boxes had been found in the area of the fuel storage magazines in the past."
3	Section 3.6.1:	It is requested that all correspondence regarding protected species be copied to LFTC. Such correspondence has the potential to influence future development activities on the project site. On behalf of LFTCEDC it is respectfully requested that any and all responses to correspondence from NYSDEC or USFWS be reviewed and approved by LFTCEDC. Any new data regarding protected species should be provided to LFTEDC upon receipt.	Comment noted. The Alion Team/USACE will provide LFTCEDC with all correspondence regarding protected species.

ACTION CODES: A-ACCEPTED/CONCUR; D-ACTION DEFERRED; W-WITHDRAWN; N-NON-CONCUR; V-VE POTENTIAL/VEP ATTACHED

PROJECT: Malta Test Station Draft SI Work Plan: October 20, 2006

U. S. Army Corps of Engineers Design Center – Baltimore District

DESIGN REVIEW COMENTS

REVIEW:

DATE: October 12, 2006

NAME: Jack A. Kelley

ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
4	Section 3.6.3.1:	Consultation with OPRHP has the potential to influence future development activities on the project site. On behalf of LFTCEDC it is respectfully requested that any and all responses to correspondence from OPRHP be reviewed and approved by LFTCEDC. Any new data regarding archeological resources should be provided to LFTC upon receipt.	Comment noted. The Alion Team/USACE will provide LFTCEDC with all correspondence regarding archaeological resources at the site.
5	Section 3.7.3.2:	All survey work completed to date by LFTCEDC at the Malta Test Station has been done under the supervision of a professional land surveyor (PLS). It is requested that all survey work associated with field investigative activities be conducted under the supervision of a PLS. In addition, it should be noted that LFTCEDC has existing mapping for the Malta Test Station that includes 1-foot contours. This existing mapping information should be shared with the Corps and Alion in an appropriate electronic format.	N-Non-Concur. Per the Programmatic Work Plan (Alion 2005), all points will be surveyed using a GPS unit operated by an experienced field technician with such instrumentation. The field technician will be assisted by the corporate Geospatial Information System (GIS) manager from the office to ensure that all survey points are in the correct coordinate system and datum. All survey points will be provided to LFTCEDC. This USACE approved protocol is consistent with the objective, scope and approach to this SI. Alion will coordinate with USACE and LFTCEDC to

ACTION CODES: A-ACCEPTED/CONCUR; D-ACTION DEFERRED; W-WITHDRAWN; N-NON-CONCUR; V-VE POTENTIAL/VEP ATTACHED

PROJECT: Malta Test Station Draft SI Work Plan: October 20, 2006

U. S. Army Corps of Engineers Design Center – Baltimore District

DESIGN REVIEW COMMENTS

REVIEW:

DATE: October 12, 2006

NAME: Jack A. Kelley

ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
			obtain mapping data.
6	General Comment	It is requested that all field activities be coordinated in advance of mobilization with LFTCEDC's site manager, Mr. Ray Kazyaka. On a daily basis, it will be required to check in with Mr. Kazyaka who will provide access into the secured Malta Test Station during the conduct of field investigations.	A – Concur. This requirement is stated in a Section 2.7.3 of the Final SS-WP

ACTION CODES: A-ACCEPTED/CONCUR; D-ACTION DEFERRED; W-WITHDRAWN; N-NON-CONCUR; V-VE POTENTIAL/VEP ATTACHED

U. S. Army Corps of Engineers Design Center – Baltimore District			
DESIGN REVIEW COMENTS			
AREAS of REVIEW: DATE of REVIEW: October 16, 2006 NAME of REVIWER: Ray Kazyaka			
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1	Section 2.6.2	Along with 105 mm ammunition boxes stored, 90 mm projectiles, 120 mm projectiles, 155 mm projectiles, Black powder, Bismuth and liquid propellants (HAN and OTTO) had been found in the Fuel Magazines in the past.	A-Concur. Section 2.6.2 has been revised as follows: “The current Malta Test Station Site Manager, Ray Kazyaka, provided the Alion Team with a map designating potential ordnance impact areas at the site, as shown in Figure 4 (2006). Mr. Kazyaka was the prior site manager of the Malta Test Station under the prior ownership of Wright-Malta Corporation. Mr. Kazyaka indicated during the TPP site walk, and in review of this SS-WP that 105 mm ammunition boxes, 90 mm projectiles, 120 mm projectiles, 155 mm projectiles, Black powder, Bismuth and liquid propellants (HAN and OTTO) have been found in the area of the fuel storage magazines in the past.
2	Section 5-2	Medical Emergency, Historically, Saratoga Hospital was used approximately 12 miles.	A- Concur. The nearest hospital in the health and safety plan has been changed to the Saratoga Hospital, as requested.

ACTION CODES: A-ACCEPTED/CONCUR; D-ACTION DEFERRED; W-WITHDRAWN; N-NON-CONCUR; V-VE POTENTIAL/VEP ATTACHED

U. S. Army Corps of Engineers Design Center – Baltimore District			
DESIGN REVIEW COMENTS			
AREAS of REVIEW: DATE of REVIEW: October 23, 2006 NAME of REVIEWER: John Strang			
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1	On Page 3-2, paragraph 3.4.0.2, 5th and 6th sentences are to read as follows	Additionally, perchlorate was analyzed for, at three separate sampling events in 2003 and twice in 2004, at Malta Test Station at the request of the USEPA and NYSDOH. Sampling results found no detects for perchlorate in the groundwater at the site.	A-Concur. Revised with the following editorial revisions: “Additionally, perchlorate was analyzed during three separate sampling events in 2003 and twice in 2004 at Malta Test Station at the request of the USEPA and NYSDOH. Sampling results indicated no detections of perchlorate in groundwater at the site.”.
2	In addition to myself, please provide a copy of the final Work Plan to	Mr. Greg Handly, NYSDEC, P.O. Box 296, Ray Brook, NY 12977 Mr. Richard Fedigan, NYSDOH, Flanigan Square, 547 River Street, 3rd Floor, Troy, NY 12180-2216 Mr. Joel Singerman, USEPA, Chief, Central NY Remediation Section, 290 Broadway, 20th Floor, New York, NY 10007-1866	Comment noted. The Alion Team/USACE will provide a copy of the final work plan to the individuals provided.

ACTION CODES: A-ACCEPTED/CONCUR; D-ACTION DEFERRED; W-WITHDRAWN; N-NON-CONCUR; V-VE POTENTIAL/VEP ATTACHED

U. S. Army Corps of Engineers Design Center – Baltimore District			
DESIGN REVIEW COMENTS			
		AREAS of REVIEW: DATE of REVIEW: October 23, 2006 NAME of REVIWER: Cynthia Blakemore	
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1	General	Our office has reviewed the Work Plan for the inspection of the military munitions at the former Malta Test Station. We have no concerns with this plan and consider that implementation of the plan will have no effect historic properties.	Comment noted.

ACTION CODES: A-ACCEPTED/CONCUR; D-ACTION DEFERRED; W-WITHDRAWN; N-NON-CONCUR; V-VE POTENTIAL/VEP ATTACHED

U. S. Army Corps of Engineers Design Center – Baltimore District			
DESIGN REVIEW COMENTS			
AREAS of REVIEW: DATE of REVIEW: October 31, 2006 NAME of REVIEWER: Mike Hallock			
ITEM	DRAWING NO OR REFERENCE	COMMENT	ACTION
1	General	The NYS DOH Glens Falls District Office has no jurisdictional interest in the current activities at the Malta Test Station; our interest is strictly informational, and, we cannot officially comment on these activities. We will have an active interest in any development(s) that will provide food or water to the public or have an impact on any existing public water supplies under our jurisdiction.	Comment noted.

ACTION CODES: A-ACCEPTED/CONCUR; D-ACTION DEFERRED; W-WITHDRAWN; N-NON-CONCUR; V-VE POTENTIAL/VEP ATTACHED