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Final

Site Management Plan
Fiscal Year 2013

Atlantic Fleet Weapons Training Area - Vieques
Vieques, Puerto Rico

Prepared for

Department of the Navy

ATLANTIC

Contract No.
N62470-08-D-1000
CTO-023 and 037

September 2012

Prepared by

CH2MHILL®

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Atlantic

Under the

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Virginia Beach, Virginia

Executive Summary

This Site Management Plan (SMP) provides a summary of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions and associated documentation to be undertaken at the Atlantic Fleet Weapons Training Area - Vieques on Vieques, Puerto Rico. In addition, the SMP provides milestones which reflect the schedule of completing CERCLA response actions that have been agreed to by the Navy and the regulatory agencies. Milestones are provided for both the Environmental Restoration Program (ERP) and the Munitions Response Program (MRP), both of which are part of the Installation Restoration (IR) Program for the Vieques Facility.

The SMP meets the requirements of the Federal Facilities Agreement (FFA) under CERCLA Section 120 (Docket Number FFA-CERCLA 02-2007-2001) (Navy et al., 2007). For this document, the CERCLA clean-up areas will be referred to as the Atlantic Fleet Weapons Training Area (AFWTA), however the site is currently known as the former Naval Ammunition Support Detachment (NASD), located on western Vieques, and the former Vieques Naval Training Range (VNTR), located on eastern Vieques. This SMP presents a description of the CERCLA sites and the projected schedules of CERCLA response actions as agreed to in the FFA. The Parties identified in the FFA include the Naval Facilities Engineering Command (NAVFAC) Atlantic Division, United States Environmental Protection Agency (USEPA) Region II, Puerto Rico Environmental Quality Board (PREQB), and the United States Department of Interior (DOI).

In accordance with the FFA, this SMP includes the following:

- A description of any actions necessary to mitigate any immediate threat to human health and the environment.
- A description of all currently identified Site Screening Areas (SSA), Operable Units (OUs), interim remedial actions (IRAs), Supplemental Remedial Actions (RAs), Time-critical Removal Actions (TCRAs) and Non-time-critical Removal Actions (NTCRAs) planned or being performed pursuant to the FFA.
- Activities and schedules for response actions including at a minimum:
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  - Schedule for initiation of Remedial Designs (RDs), RAs, including IRAs and Supplemental RAs, Emergency actions, TCRAs, and NTCRAs and any initiation of other planned response actions covered by the FFA and Projected End Dates

Facility Description

Vieques Island has a land area of approximately 33,000 acres, and is located in the Caribbean Sea approximately 7 miles southeast of the eastern coast of the main island of Puerto Rico (**Figure 1-1**). The Atlantic Fleet Weapons Training Area - Vieques is located on the eastern one-third (i.e., former VNTR) and western one-third (i.e., former NASD) of the island, with the communities of Isabel Segunda and Esperanza located in the center of the island. On September 7, 2005, Vieques was placed on the National Priorities List (NPL) by USEPA.

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NOTA: ESTE RESUMEN SE PRESENTA EN INGLÉS Y EN ESPAÑOL PARA LA CONVENIENCIA DEL LECTOR. SE HA HECHO TODO LO POSIBLE PARA QUE LA TRADUCCIÓN SEA PRECISA EN LO MÁS RAZONABLEMENTE POSIBLE. SIN EMBARGO, LOS LECTORES DEBEN ESTAR AL TANTO QUE EL TEXTO EN INGLÉS ES LA VERSIÓN OFICIAL.

East Vieques (former VNTR)

The former VNTR, which comprises approximately 14,573 acres, provided ground warfare and amphibious training for Marines, naval gunfire support training, and air to ground training. In the Resource Conservation and Recovery Act (RCRA) Consent Order, the former VNTR was also referred to as the former Atlantic Fleet Weapons Training Facility (AFWTF) and the Eastern Maneuver Area (EMA). The former VNTR was also described as four separate operational areas, which comprised from west to east: the EMA, the Surface Impact Area (SIA), the Live Impact Area (LIA), and the Eastern Conservation Area (ECA) at the easternmost tip of the island.

On April 30, 2003, 14,573 acres of east Vieques (former VNTR) were transferred to the DOI to be operated and managed by the United States Fish and Wildlife Service (USFWS) as a National Wildlife Refuge and Wilderness Area pursuant to Section 1049 of the National Defense Authorization Act for Fiscal Year 2002 (Public Law 107–107).

Approximately 900 acres of the former VNTR, consisting of the Live Impact Area (LIA) will be managed as a wilderness area and the public must be excluded from this area in accordance with Public Law 106–398 and Public Law 107–107.

DOI developed a Comprehensive Conservation Plan (CCP) for the Vieques National Wildlife Refuge that outlines its concept for managing the refuge. The environmental restoration of the former VNTR will be based upon potential risks to human health and the environment, with consideration given to the future land use identified in the CCP.

West Vieques (former NASD)

On April 30, 2001, 8,114 acres of the former NASD on the west side of Vieques were apportioned and transferred to the DOI, the Municipality of Vieques (MOV), and the Puerto Rico Conservation Trust (PRCT) in accordance with Public Law 106–398. The sites owned by these agencies are listed in the appendices. The property owned by DOI (approximately 3,158 acres) is managed by USFWS as part of the Vieques National Wildlife Refuge. The restoration of the former NASD will be based upon potential risks to human health and the environment, with consideration given to the planned future land use.

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Resumen Ejecutivo

Este Plan de Manejo del Sitio (SMP en inglés) presenta un resumen de las acciones de repuesta y los documentos relacionados bajo la Ley de Repuesta, Compensación, y Responsabilidad Ambiental (CERCLA en inglés) del 1988 que van a llevarse a cabo en la Antigua Instalación de Adiestramiento con Armas de la Flota del Atlántico de Vieques, Vieques Puerto Rico. Además, el SMP presenta los logros alcanzados que se reflejan en el calendario de actividades para la ejecución final de las acciones de repuesta de CERCLA que han sido acordadas por la Marina y las agencias reguladoras. Se presentan los logros alcanzados tanto para el Programa de Restauración Ambiental (ERP en inglés) como para el Programa de Respuesta a Municiones (MRP en inglés), las cuales son las dos parte del Programa de Restauración de la Instalación (IR en inglés) para la de Instalación de Vieques.

El SMP satisface los requisitos del Acuerdo de Facilidades Federales (FFA en inglés) bajo la ley CERCLA Sección 120 (Número de Archivo FFA-CERCLA 02-2007-2001) (Navy et al., 2007). Para este documento, las áreas de limpieza bajo CERCLA se referirán como el Área de Adiestramiento con Armas de la Flota del Atlántico (AFWTA), sin embargo el sitio se lo conoce actualmente como el Destacamento de Apoyo de Municiones Navales (NASD en inglés), que se encuentra en el oeste Vieques, y el Antiguo Campo de Adiestramiento Naval de Vieques (VNTR en inglés), ubicado en el este de Vieques. Este SMP presenta una descripción de los sitios investigados bajo CERCLA y el calendario de actividades que se proyecta para las acciones de repuesta, tal y como fue establecido en el FFA. Las agencias que se identifican en el FFA incluyen: el Comando de Ingeniería de Instalaciones Navales del Atlántico (NAVFAC en inglés), la Agencia de Protección Ambiental de los EEUU (U SEPA en inglés) Región II; la Junta de Calidad Ambiental de Puerto Rico (PREQB en inglés); y el Departamento del Interior de los EEUU (DOI en inglés).

De acuerdo con el FFA, este SMP incluye lo siguiente:

- Una descripción de las acciones que se necesitan para mitigar cualquier amenaza inmediata para la salud humana y el ambiente.
- Una descripción de todas las Áreas Pre Evaluadas (SSA en inglés) ya identificadas, las Unidades Operativas (OUs en inglés), acciones de remediación provisionales (IRAs en inglés), las Acciones de Remediación Suplementarias (RAs en inglés), las Acciones de Remoción de Tiempo Crítico (TCRA en inglés) y las de Tiempo No Crítico (NTCRA en inglés) que están planificadas o llevando a cabo de acuerdo al FFA.
- Las actividades y el calendario de actividades para las acciones de respuesta que incluyen como mínimo:
  - Identificación de las Acciones Primarias
  - Plazos de cumplimiento
  - Logros a alcanzarse en un tiempo corto
  - Logros a alcanzarse en el año
  - Fechas meta
  - El calendario de actividades para el inicio del desarrollo de los Diseños para la Remediación (RD), RAs, incluyendo IRAs y Ras Suplementarias, Acciones de Emergencia, de Tiempo Crítico, y las Acciones de Remoción de Tiempo No Crítico, además, cualquier inicio de otras acciones de respuesta planificadas que cubiertas por el FFA y todas fechas planificadas para terminar el proyecto.

Descripción de la Instalación

Vieques tiene una superficie de aproximadamente 33,000 acres y está localizada en el mar Caribe aproximadamente 7 millas al sureste de la costa este de la isla principal de Puerto Rico (**Figure 1-1**). La Antigua

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Instalación de Adiestramiento con Armas de la Flota del Atlántico está localizada en una tercera parte del este de la isla (el antiguo VNTR) y una tercera parte al en el oeste (el antiguo NASD); las comunidades de Isabel Segunda y Esperanza están en el centro de la isla. El 7 de septiembre del 2007, Vieques fue añadida a la Lista de Prioridades Nacionales (NPL en inglés) de USEPA.

Este Vieques (antiguo VNTR)

El antiguo VNTR se compone de aproximadamente 14,573 acres, y proporcionó adiestramiento de guerra sobre tierra y adiestramiento de técnicas anfibias para los infantes de marina, adiestramiento de apoyo de armas navales, y adiestramiento de combate de aire-tierra. En la Orden de Consentimiento de la ley de Conservación y Recuperación de Recursos (RCRA en inglés), también se le conocía como al antiguo VNTR como Instalación de Adiestramiento de la Flota de Guerra del Atlántico (AFWTF en inglés) y también Área de Maniobras del Este (EMA en inglés). El antiguo VNTR también ha sido descrito como cuatro zonas de operaciones separadas, de oeste a este: la EMA, el Área de Impacto de Superficie (SIA en inglés), el Área de Impacto con Bala Viva (LIA en inglés), y el Área de Conservación del Este (ECA en inglés) que se encuentra en el punto más al este de la isla.

El 30 de abril del 2003, 14.573 acres del este Vieques (antiguo VNTR) fueron transferidos a DOI para que sean operados y manejados por el Servicio de Pesca y Vida Silvestre (USFWS en inglés) como un refugio nacional de vida silvestre y un área silvestre siguiendo la Sección 1049 de la Ley de Autorización de Defensa Nacional para Año Fiscal 2002 (Ley Pública 107–107).

Aproximadamente 900 acres del antiguo VNTR, que incluyen el Área de Impacto con Bala Viva será manejado como un área silvestre sin acceso al público siguiendo la Ley Pública 106–398 y la ley Pública 107–107.

DOI desarrolló un Plan Abarcador de Conservación (CCP en inglés) para el Refugio Nacional de Vida Silvestre que delinea las normas para el manejo del refugio. La restauración ambiental del antiguo VNTR se basará en los riesgos potenciales a la salud humana y al ambiente, considerando el uso futuro de los terrenos.

Oeste Vieques (antiguo NASD)

El 30 de abril 30 del 2001, 8,114 acres del antiguo NASD ubicado en el lado oeste de Vieques fue repartido y transferido a DOI, al Municipio de Vieques (MOV), y al Fideicomiso de Conservación de Puerto Rico (PRCT) de acuerdo con la Ley Pública 106–398. Los sitios que son propiedad de estas agencias se describen en los anexos. La propiedad de DOI (aproximadamente 3,158 acres) está administrada por USFWS como parte del Refugio Nacional de Vida Silvestre de Vieques. La restauración del antiguo NASD se basará en los riesgos potenciales a la salud humana y al ambiente considerando el uso futuro planificado para los terrenos.

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Contents

Section **Page**

Executive Summary ..... **iii**
Facility Description iii
East Vieques (former VNTR) iv
West Vieques (former NASD) iv

Resumen Ejecutivo ..... **v**
Descripción de la Instalación v
Este Vieques (antiguo VNTR) vi
Oeste Vieques (antiguo NASD) vi

Acronyms and Abbreviations ..... **ix**

1 Introduction **1-1**
1.1 Overview of the Site Management Plan 1-1
1.1.1 Overview of this Document 1-1
1.1.2 Objectives of the Site Management Plan 1-1
1.1.3 Site Management Plan Updates 1-1
1.1.4 Facility Description 1-2
1.1.5 National Priorities List Listing 1-2
1.2 Information Repositories 1-3

2 Site Descriptions **2-1**
2.1 Eastern Vieques Sites 2-1
2.1.1 Consent Order Sites 2-1
2.1.2 Photo-identified (PI) and Potential Area of Concern (PAOC) Sites 2-2
2.1.3 Munitions Response Sites 2-5
2.2 Western Vieques Sites 2-9
2.2.1 Environmental Sites 2-9
2.2.2 Munitions Response Site (SWMU 4—Inactive OB/Waste Explosive Detonation Range) 2-11
2.3 Munitions Response Site Prioritization 2-12

3 Schedules and Funding **3-1**
3.1 Document Review Schedule 3-1
3.2 Primary Documents 3-2
3.3 Secondary Documents 3-2
3.4 Projected ERP/MRP Funding 3-3

4 References **4-1**

Appendices

A Status of Remedial Investigation/ Feasibility Study Sites
A-1 Environmental Sites
A-2 Munitions Response Sites

B Site Screening Areas
B-1 Environmental Sites
B-2 Munitions Response Sites

C DoD Site Prioritization Protocol Scoring

Tables (provided at the end of each section)

2-1 Operable Units Cross Reference Table
2-2 Summary of Munitions Response Site Prioritization Protocol Results for Vieques Munitions Response Sites

3-1 FY13 and Beyond Tentative Schedule
3-2 Vieques Programmed Funding, In Millions ($)

Figures (provided at the end of each section)

1-1 Regional Location Map
1-2 Vieques Sites to be Assessed Under CERCLA
1-3 Navy Vieques Program Organizational Chart

2-1 East Vieques Environmental Restoration Sites
2-2 Munitions Response Sites
2-3 West Vieques Sites Subject to CERCLA

3-1 Vieques Munition Response and Environmental Restoration Program Schedule

Acronyms and Abbreviations

AFWTA	Atlantic Fleet Weapons Training Area
AFWTF	Atlantic Fleet Weapons Training Facility
AMS	Aerial Magnetometer Survey
AOC	area of concern
AR	Administrative Record
AST	aboveground storage tank
ATG	air-to-ground
AVGAS	aviation gas
CCP	Comprehensive Conservation Plan
CCP/EIS	Comprehensive Conservation Plan/Environmental Impact Statement
CCR	Construction Completion Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DoD	Department of Defense
DOI	United States Department of Interior
DRO	diesel range organics
EADA	Elevated Anomaly Density Area
EBS	Environmental Baseline Survey
ECA	Eastern Conservation Area
EE/CA	Engineering Evaluation/Cost Analysis
EISB	enhanced *in situ* bioremediation
EMA	Eastern Maneuver Area
ERA	Expanded Range Assessment
ER,N	Environmental Restoration, Navy
ERP	Environmental Restoration Program
ESI	Expanded Site Investigation
FFA	Federal Facilities Agreement
FFS	Focused Feasibility Study
FS	Feasibility Study
FY	fiscal year
HHRA	Human Health Risk Assessment
IAS	Initial Assessment Study
IR	Installation Restoration
IRA	Interim Remedial Action
ISCO	*in situ* chemical oxidation
JP	jet propellant
LIA	Live Impact Area
LUC	land use control
MC	munitions constituents
MCL	maximum contaminant limit
MEC	munitions and explosives of concern
mg/kg	milligrams per kilogram
mm	millimeter
MOA	Memorandum of Agreement
MOV	Municipality of Vieques
MPE	multi-phase vacuum extraction
MRA	Munitions Response Area

MRP	Munitions Response Program
MRS	Munitions Response Site
NACIP	Navy Assessment and Control of Installation Pollutants
NASD	Naval Ammunition Support Detachment
NAVFAC	Naval Facilities Engineering Command
NFA	no further action
NGF	Naval gun fire
NPL	National Priorities List
NSRR	Naval Station Roosevelt Roads
NTCRA	Non-time-critical Removal Action
OB/OD	open burn/open detonation
OE	ordnance and explosives
OP-1	Observation Post 1
OU	operable unit
PA/SI	Preliminary Assessment/Site Inspection
PAH	polycyclic aromatic hydrocarbon
PAOC	potential area of concern
PCB	polychlorinated biphenyl
PI	photo-identified
PID	photoionization detector
PRCT	Puerto Rico Conservation Trust
PREQB	Puerto Rico Environmental Quality Board
RA	Remedial Action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SI	Site Inspection
SIA	Surface Impact Area
SMP	Site Management Plan
SSA	site screening area
SSP	Site screening process
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TAG	Technical Assistance Grant
TAPP	Technical Assistance for Public Participation Program
TCE	trichloroethene
TCRA	Time-critical Removal Action
TPH	total petroleum hydrocarbon
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
UXO	unexploded ordnance
VNTR	Vieques Naval Training Range
VOC	volatile organic compound
VSI	Visual Site Inspection

SECTION 1

Introduction

1.1 Overview of the Site Management Plan

1.1.1 Overview of this Document

This Site Management Plan (SMP) provides a summary of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions and associated documentation to be undertaken at the Atlantic Fleet Weapons Training Area (AFWTA) - Vieques on Vieques, Puerto Rico. In addition, the SMP provides milestones which reflect the schedule of completing CERCLA response actions that have been agreed to by the Navy and the regulatory agencies. Milestones are provided for both the Environmental Restoration Program (ERP) and the Munitions Response Program (MRP), both of which are part of the Installation Restoration (IR) Program for the Vieques Facility.

The SMP meets the requirements of the Federal Facilities Agreement (FFA) under CERCLA Section 120 (Docket Number FFA-CERCLA 02-2007-2001). The AFWTA - Vieques on Vieques comprises portions of the former Naval Ammunition Support Detachment (NASD), located on western Vieques, and the former Vieques Naval Training Range (VNTR), located on eastern Vieques. This SMP presents a description of the CERCLA sites and the projected schedules of CERCLA response actions as agreed to in the FFA. The Parties identified in the FFA include the Naval Facilities Engineering Command (NAVFAC) Atlantic Division, United States Environmental Protection Agency (USEPA) Region II, Puerto Rico Environmental Quality Board (PREQB), and the United States Department of Interior (DOI).

An organizational chart identifying the Navy chain of command and authority lines responsible for the overall progress of this NPL site is included in **Figure 1-3**.

1.1.2 Objectives of the Site Management Plan

In accordance with the FFA, this SMP includes the following:

- A description of any actions necessary to mitigate any immediate threat to human health and the environment.
- A description of all currently identified site screening areas (SSAs), operable units (OUs), Interim Remedial Actions (IRAs), Supplemental Remedial Actions (RAs), Time-critical Removal Actions (TCRAs), and Non-time-critical Removal Actions (NTCRAs) planned or being performed pursuant to the FFA.
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1.1.3 Site Management Plan Updates

The Navy will prepare a Draft Amendment of the SMP by June 15 of each year and will include updates of milestones that have been previously agreed to by the Parties and will provide any new milestones that are proposed by the Navy.

Comments on Draft Amendments will be due to the Navy 30 days after receipt by USEPA, DOI, and PREQB of a Draft Amendment. A revised Draft Amendment to the SMP (hereinafter referred to as the "Draft Final Amendment") will be due from Navy no later than 30 days after the end of the USEPA/DOI/PREQB comment period. The resolution of comments and production of the Draft Final will be conducted within 30 days following the receipt of comments on the Draft. The Draft Final SMP shall not become an approved SMP until 21 days after Navy receives official notification of Congress' authorization and appropriation of funds if funding is sufficient to complete the Work to be performed during the year covered by that authorization or appropriation. However, upon approval of the Draft Final or conclusion of the dispute resolution process, the Parties shall implement the SMP while awaiting official notification of Congress' authorization and appropriation.

1.1.4 Facility Description

Vieques Island has a land area of approximately 33,000 acres, and is located in the Caribbean Sea approximately 7 miles southeast of the eastern coast of the main island of Puerto Rico (**Figure 1-1**). The former Naval facilities are located on the eastern one-third (i.e., former VNTR) and western one-third (i.e., former NASD) of the island, with the communities of Isabel Segunda and Esperanza located in the center of the island.

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1.1.5 National Priorities List Listing

In 2003, the Governor of Puerto Rico requested USEPA to list the VNTR and NASD on the National Priorities List (NPL). On May 26, 2004, the President of PREQB sent a letter to the Regional Administrator of USEPA acknowledging that USEPA, PREQB, and DOI concurred with the designation of the former naval facilities of eastern and western Vieques as an NPL site. In addition, a clarification of the Atlantic Fleet Weapons Training Activity (AFWTA) was provided and stated that initial areas of Preliminary Assessment/Site Inspection (PA/SI) under CERCLA will focus on "Agreed Areas" in and around Vieques and Culebra where the Navy conducted operations, including "those waters in and around Vieques where contamination has come to be located." Regarding submerged land areas specifically, Navy intends to assess those sites and take appropriate action in

accordance with the risk-based site prioritization methodology set out in the FFA. Work at submerged land areas will be scheduled as part of the normal update process for this SMP. On February 7, 2005, Vieques was placed on the NPL. The areas to be assessed as part of the NPL are shown on **Figure 1-2**.

As a result of the NPL listing, an FFA was signed by the Navy, USEPA, PREQB and DOI on September 7, 2007. The FFA establishes the procedural framework and schedule for implementing the CERCLA Response Actions on Vieques.

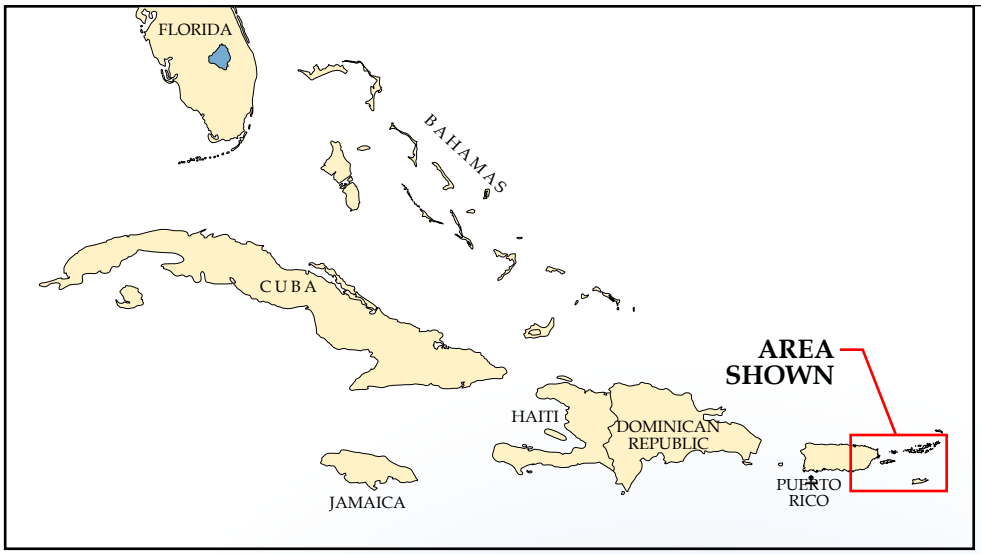
1.2 Information Repositories

Vieques lacks an operational public library; the Navy has made every effort to locate the Vieques Administrative Record (AR) on several locations on Vieques. Currently, the Navy's computer containing the AR is located in the Biblioteca Electrónica located in Isabel Segunda. The Navy will continue working with the Municipality to identify a more permanent location for the AR. The Navy maintains a public website where technical documents and other information related to the investigation can be found in:
http://public.lantops-ir.org/sites/public/vieques.

Technical assistance in the review of these documents is available by the Navy to the community through the Technical Assistance for Public Participation (TAPP) program. A solicitation for a TAPP consultant was posted in 2008 and responses to the solicitation were received. The responses were reviewed by the Restoration Advisory Board (RAB) who concluded that neither of the companies fulfills the RAB's expectations. To date no TAPP consultant has been contracted. The Vieques RAB decided to benefit from the Navy's offer to use its consultants, as well as PREQB's and USEPA's consultants to provide the RAB with technical support.

The Vieques Administrative Record is located in:

BIBLIOTECA ELECTRÓNICA
CALLE BENÍTEZ GUZMÁN, ESQUINA BALDORIOTY DE CASTRO
Isabel Segunda
Vieques, PR 00765
(787) 741-5000
Horario: De lunes a viernes, de 8:00 a.m. a 4:00 p.m.



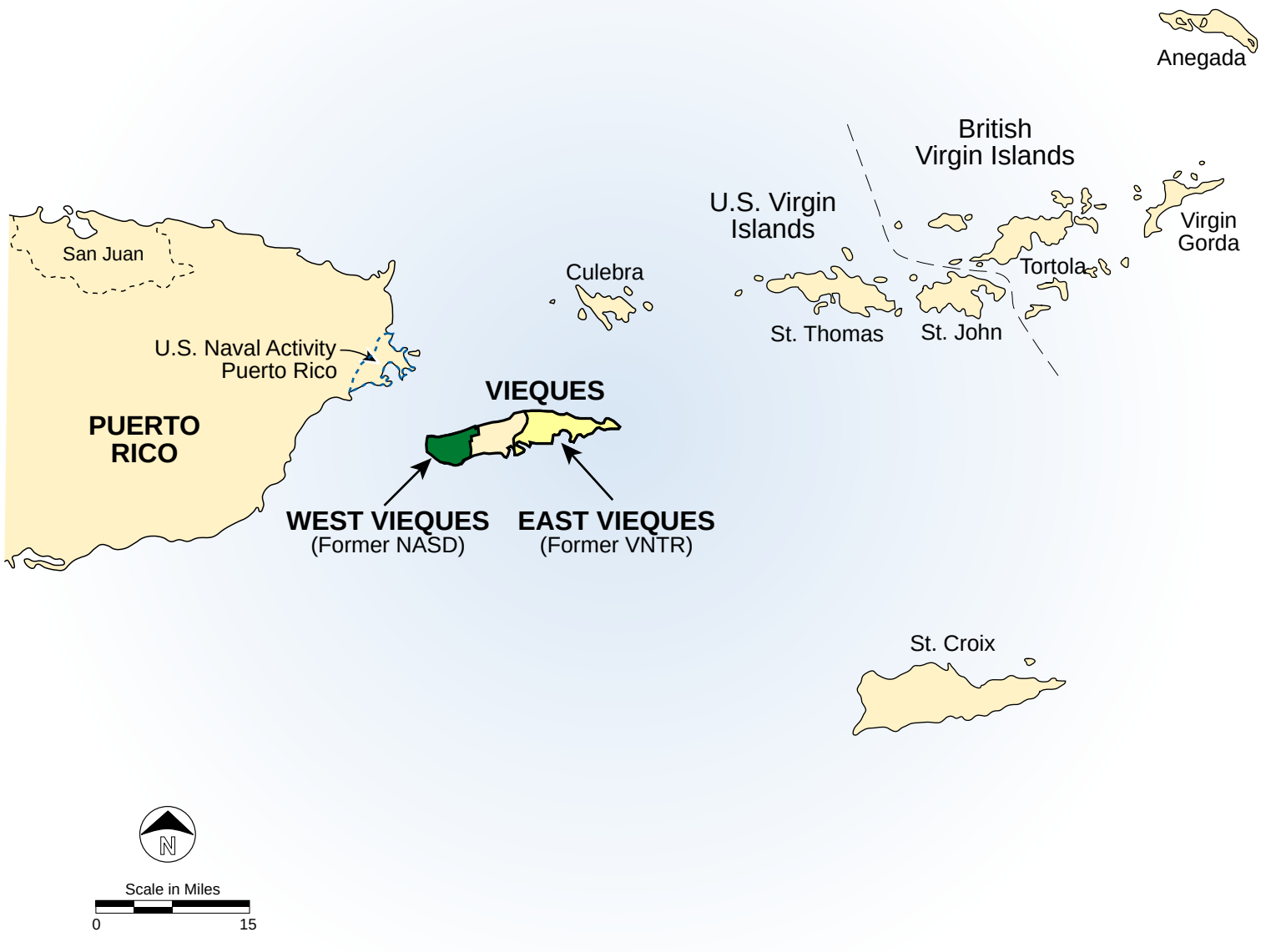
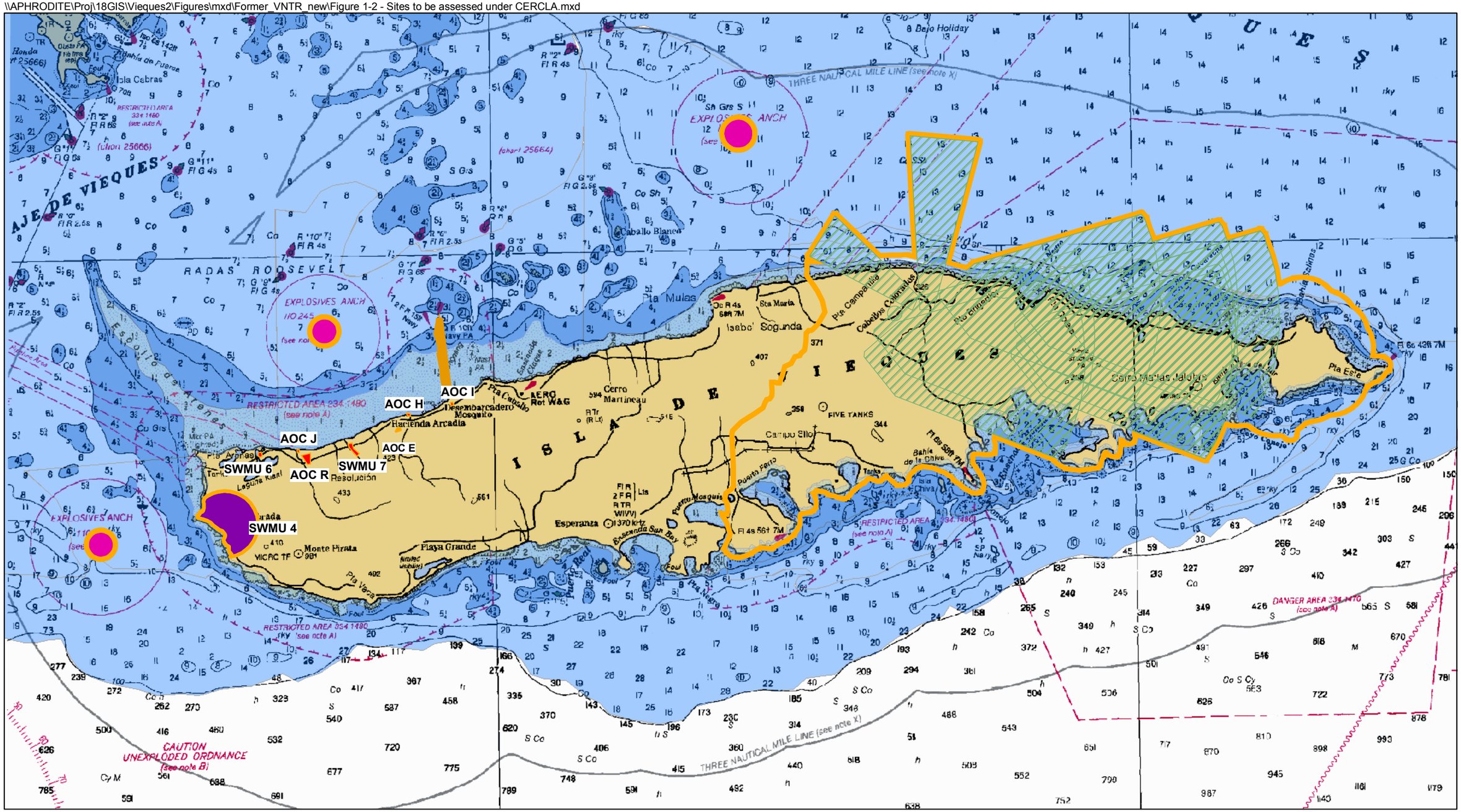


FIGURE 1-1
Regional Location Map
Site Management Plan, FY 2013
Vieques, Puerto Rico



Legend

- Agreed Areas of Proposed NPL Site
- Anchorage Location Boundary
- Western Vieques Environmental Sites
- SWMU 4 (Former OB/OD Site)
- Artillery Safety Fan

Water Depth

- 0-10 Feet
- 10 - 150 Feet
- Greater Than 150 Feet

N

0 1 2 4 Miles

Figure 1-2
Vieques Sites to be Assessed Under CERCLA
Site Management Plan, FY 2013
Vieques, Puerto Rico

Assistant Secretary of Navy

Jackalyne Pfannenstiel
ASN
703-693-4530
Jackalyne.pfannensti@navy.mil

Donald Schregardus
Deputy ASN
703-614-5080
Donald.schregardus@navy.mil

NAVFAC

Doug Lewis
Environmental Business Line Manager
By direction of the Commander
Naval Facilities Engineering Command
6506 Hampton Blvd.
Norfolk, VA 23508-1278
757-322-4800

Byron Brant
Environmental Restoration Division
Naval Facilities Engineering Command
6506 Hampton Blvd.
Norfolk, VA 23508-1278
757-322-4786
Byron.brant@navy.mil

NAVFAC Atlantic – Vieques Restoration

Dan Waddill
Vieques Restoration Section Head
Naval Facilities Engineering Command
6506 Hampton Blvd.
Norfolk, VA 23508-1278
757-322-4983
Dan.waddill@navy.mil

Kevin Cloe
Remedial Project Manager
Naval Facilities Engineering Command
6506 Hampton Blvd.
Norfolk, VA 23508-1278
757-322-4736
Kevin.cloe@navy.mil

Daniel Hood
Remedial Project Manager
Naval Facilities Engineering Command
6506 Hampton Blvd.
Norfolk, VA 23508-1278
757-322-4630
Daniel.r.hood@navy.mil

FIGURE 1-3
Navy Vieques Program Organizational Chart
Site Management Plan, FY 2013
Vieques, Puerto Rico

SECTION 2

Site Descriptions

This section presents a description of the sites and the current status for the CERCLA response actions that have been completed at the Vieques Facility. The sites are categorized in the appendices to this SMP and the FFA as follows:

- **Appendix A**, Remedial Investigation/Feasibility Study (RI/FS) Sites
  - **Appendix A-1**, Environmental Sites
  - **Appendix A-2,** Munitions Response Sites
- **Appendix B,** Site Screening Areas
  - **Appendix B-1,** Environmental Sites
  - **Appendix B-2,** Munitions Response Sites
- **Appendix C**, DoD Site Prioritization Protocol Scoring

Figures showing the locations of the sites on East Vieques and West Vieques are provided as **Figures 2-1, 2-2, and 2-3**.

2.1 Eastern Vieques Sites

2.1.1 Consent Order Sites

This subsection summarizes the status of the 12 environmental sites (Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) that were identified in a RCRA Consent Order and have undergone investigations through the CERCLA process. Additional detail for the one site (SWMU 1) for which a remedial action is planned is provided herein. Site-specific detail for sites closed out of the CERCLA process is provided in **Appendix A-1** and past SMPs. The anticipated schedule for deliverable submittal for the following sites, as applicable, is provided in **Figure 3-1**. A cross reference table, **Table 2-1**, has been included to facilitate comparison of DoD "sites" with EPA "OUs."

Prior to Vieques' listing on the NPL, environmental investigations on the former VNTR were conducted under RCRA. Therefore, a Phase I RCRA Facility Investigation (RFI) (similar to a PA/SI conducted under CERCLA) was conducted for the 12 Consent Order SWMUs and AOCs and the Draft Phase I RFI Report was prepared (CH2M HILL, 2004a). Because several of the potential inorganic constituents (also referred to as metals) detected in site-specific soil samples are also commonly occurring in nature or otherwise ubiquitous, a background investigation of soil inorganics was conducted and a Final Background Soil Inorganics Report was submitted in October 2007 (CH2M HILL, 2007f). These background soil results are used to assess if the inorganic constituent levels detected in site-specific soils are consistent with background conditions or indicative of releases from historical waste management activities. Once the Background Soil Inorganics Report was finalized, the Draft Phase I RFI Report was revised with this information and re-submitted as the Draft PA/SI Report (to be consistent with the CERCLA terminology since Vieques had by then been listed on the NPL) for regulatory review, and subsequently the Final PA/SI Report (CH2M HILL, 2008d).

Based on the findings of investigations documented in the PA/SI Report, 4 of the 12 Consent Order sites were identified as requiring no action to be protective of unrestricted human use and ecological exposure. These sites were subsequently closed out of the CERCLA process via a No Action Decision Document (CH2M HILL, 2009a). The remaining 8 sites were included in additional investigation, the results of which are presented in the Final Site Inspection/ Expanded Site Inspection (SI/ESI) Report (CH2M HILL, 2010b). Based on the findings presented in the Final SI/ESI Report, 7 of the 8 remaining Consent Order sites were identified as requiring no action or no further action (NFA) to be protective of unrestricted human use and ecological exposure. These sites are included in a Final No Action/NFA Decision Document (CH2M HILL, 2010d). The 1 remaining site (SWMU 1) was recommended for presumptive remedy following preparation of a Streamlined RI/FS Report. Subsequently, a presumptive remedy Record of Decision (ROD) was signed in 2011, the remedial action for which is scheduled to begin in 2012, as discussed below.

SWMU 1—Camp Garcia Landfill

According to the Navy Assessment and Control of Installation Pollutants (NACIP) Initial Assessment Study (IAS) Report, this SWMU was in operation from approximately 1954 to 1978 (Greenleaf/Telesca, 1984). While this SWMU was operational, it was an unlined landfill that was used to dispose of paper, corrugated containers, cans and food packaging material, rags, scrap metal, and yard waste. Municipal waste from both Camp Garcia and other areas of the VNTR was handled here. The SWMU 1 area, the Camp Garcia area, and the former VNTR are shown in **Figure 2-1**. Approximately 1,800 to 3,120 tons of wastes were reportedly disposed of in the landfill, as noted in the IAS (Greenleaf/Telesca, 1984).

During operation of the landfill, the trench method of disposal was employed and land clearing was kept to a minimum to avoid erosion at the site. A bulldozer was used to dig a trench into which materials were disposed. The trench was then covered with about 6 inches of soil to control blowing of litter. The landfill was closed in 1978 and a 2-foot thick soil cover was placed over the landfill.

The landfill managed waste from a maximum of approximately 150 individuals, depending on military exercises. An aerial photograph analysis of the landfill indicated that the fill area extended over an area of approximately 50 acres (Lockheed Martin, 1999). Subsequent geophysical evaluation and test pitting performed during the Phase I RFI and the ESI suggest the areal extent of the landfill is approximately 41 acres. The landfill is currently vegetated with dense grasses and trees. A gravel road was constructed down the center of the landfill in the mid-1980s, but the road has become vegetated. During the Visual Site Inspection (VSI), no signs of erosion or stresses on vegetation were observed (PREQB-Vargas, 1995). No documentation was found regarding releases of hazardous constituents from the landfill. Several areas of debris (fill material) were observed in 2004 during the clearing of transects for the Phase I RFI. Debris observed included galley (kitchen) waste (cans, bottles, forks, and knives), metal pipes, and a small metal tank. Observations made while test pitting during the ESI suggest some munitions debris (MD) was also disposed of in the landfill.

Evaluation of historical data collected at SWMU 1 is presented in the Final PA/SI Report (CH2M HILL, 2008d) and the Final SI/ESI Report (CH2M HILL, 2010b). Although the data collected during the Phase I RFI suggest there had not been a release from the landfill that posed a potentially unacceptable risk, only surface soil and groundwater data were collected (i.e., no soil samples within and beneath debris nor ephemeral stream samples were collected). Based on this information, SWMU 1 was part of an ESI for which the field work, described in a Sampling and Analysis Plan (SAP) (CH2M HILL, 2009b) was completed in May 2009. During the ESI, geophysical surveying, test pitting, waste characterization, soil sampling, ephemeral stream sampling, monitoring well installation, and groundwater sampling were performed. The Final SI/ESI Report, which included SWMU 1, was submitted in August 2010 (CH2M HILL, 2010b). Based on the findings documented in the Final SI/ESI Report and consistent with USEPA guidance, a Streamlined RI/FS for presumptive remedy was produced for SWMU 1. The Final Streamlined RI/FS was completed in April 2011 (CH2M HILL 2011d). Based on the remedial alternatives evaluation in the RI/FS, a Proposed Plan was issued for public comment in July 2011 (CH2M HILL, 2011i) and the associated ROD was issued in September 2011 (CH2MHILL, 2011l). The final work plan that that will guide implementation of the remedial action, operation and maintenance, land use controls, and long-term monitoring was submitted in July 2012 (CH2M HILL, 2012g).

2.1.2 Photo-identified (PI) and Potential Area of Concern (PAOC) Sites

During the development of the Description of Current Conditions Report (CH2M HILL, 2001b) and the EBS (NAVFAC, 2003a), several additional potential environmental sites were identified based on the review of historical aerial photographs and facility records. This subsection summarizes the status of the 23 Photo-identified (PI) and 24 Potential Area of Concern (PAOC) sites that were identified, and in most cases, investigated and closed out of the CERCLA process. Additional detail for the two sites (SWMU 20 [formerly PI 4] and PI 21) that are currently under investigation is provided herein. Site-specific detail for sites closed out of the CERCLA process is provided in **Appendix B-1** and past SMPs. The anticipated schedule for deliverable submittal for the following sites, as applicable, is provided in **Figure 3-1**. The locations of the PI sites and PAOCs are shown on **Figure 2-1**.

A Draft Phase I RFI Report (CH2M HILL, 2004a) was developed that described the 47 PI/PAOC sites; however, none of the sites was investigated during the Phase I RFI. The Draft Phase I RFI Report proposed eight of the PI/PAOC sites (PIs 4 and 7, and PAOCs J, K, L, N, S, and U) for a Phase I RFI, which was implemented as a PA/SI under CERCLA due to the subsequent listing of Vieques on the NPL. The PA/SI field work for the eight PI/PAOC sites was completed in April 2006 in accordance with the PA/SI Work Plan (CH2M HILL, 2006a). The Final PA/SI Report discusses the findings and recommendations for each of the eight PI/PAOC sites (CH2M HILL, 2008d). One site (PAOC U) was recommended for NFA, which was documented in a No Action Decision Document (CH2M HILL, 2009a). Five of the remaining seven PI/PAOC sites were recommended for further investigation as part of an ESI (PIs 4 and 7, and PAOCs L, N, and S). Determinations for the two remaining sites (PAOC J and K) were postponed pending completion of a regional groundwater evaluation. The five aforementioned sites and regional groundwater were included in an ESI, for which the field work, described in a SAP (CH2M HILL, 2009b), was completed in May 2009. The Final SI/ESI Report, which includes these five sites, was submittal in August 2010 (CH2M HILL, 2010b). Based on the findings presented in the Final SI/ESI Report, five of the seven aforementioned PI/PAOC sites (PAOCs J, K, L, N and S) were identified as requiring no action or NFA to be protective of unrestricted human use and ecological exposure. These sites are included in a Final No Action/NFA Decision Document (CH2M HILL, 2010d). The remaining two sites (PI 4 and PI 7) were recommended for additional sampling in accordance with the existing SAP (CH2M HILL, 2009b). The recommendation at the PI 7 site was to collect a co-located surface and subsurface soil sample from the same location as previously sampled 7 years prior to determine current concentrations of PAHs. The additional samples were collected and the associated data, together with the data from other historical samples collected at the site, were used to determine existing conditions do not pose an unacceptable risk to human health or ecological receptors or leaching concern for groundwater. This was documented in the Final Site Inspection/Expanded Site Inspection Report Addendum (CH2M HILL, 2011g). Based on this, a Final No Action/No Further Action Decision Document that included PI 7 was issued in September 2011(CH2M HILL, 2011j).

The path forward for the remaining 39 PI/PAOC sites was discussed by the Environmental Technical Subcommittee, which comprises representatives from the Navy, USEPA, PREQB, and USFWS, and their contractors. Any of the PI/PAOC sites located in munitions sites will be investigated as part of the broader munitions sites. Based on this protocol, there are 22 PI/PAOC sites located in munitions sites. The remaining 17 PI/PAOC sites (in addition to the 8 discussed in the preceding paragraph) are in the ERP (PIs 5, 6, 8, 10, 11, 20, and 21, PAOCs I, M, O, P, Q, R, T, V, W, and X). A site visit by the Environmental Technical Subcommittee to 16 of the sites (all except PI 21) on October 17, 2007, determined that 5 of the 16 sites required no action to be protective of unrestricted human use and ecological exposure (PI 11 and 20, and PAOCs T, V, and W). A Final No Action Decision Document (CH2M HILL, 2009a) was issued in January 2009 to document the no action determination for a number of sites, including these five sites. The remaining 11 PI/PAOC sites (not including PI 21) were included in the SI/ESI, for which the field work, as described in the SAP (CH2M HILL, 2009b), was completed in May 2009. The Final SI/ESI Report, which includes these 11 sites, was submitted in August 2010 (CH2M HILL, 2010b). Based on the findings presented in the Final SI/ESI Report, 9 of the 11 aforementioned PI/PAOC sites (PIs 5, 6, 8, and 10, and PAOCs I, M, O, P, X) were identified as requiring no action or NFA to be protective of unrestricted human use and ecological exposure. These sites are included in a Final No Action/NFA Decision Document (CH2M HILL, 2010d). The remaining two sites (PAOCs Q and R) were recommended for additional sampling in accordance with the existing SAP (CH2M HILL, 2009b). That sampling occurred in August 2010 and documented in a Final SI/ESI Addendum Report (CH2M HILL, 2011g); the sites were subsequently included in a Final No Action/No Further Action Decision Document (CH2M HILL, 2011j).

Based on the above information, there are two sites remaining under investigation in the ERP: PI 4 (now designated as SWMU 20) and PI 21. These two sites are discussed below.

SWMU 20, formerly known as PI 4 (Former Helicopter Maintenance Area, Trenched Area, Disturbed Area, and Bermed Areas used for Fuel Bladder Storage)

Historical information suggests the site comprised a former helicopter maintenance area, trenched area, disturbed areas, and bermed area for storage of fuel bladders. There are no structures remaining at the site other than concrete pads (potential relics of building foundations) and concrete vaults believed to have been associated with a sanitary septic system for barracks and mess potentially located at the site (CH2M HILL, 2008d).

During the 2001 SI of PI sites and the 2002 EBS SI, no physical evidence of a release was noted. However, as a conservative measure, five potential sources of a release were identified for PA/SI sampling:

- Former trenches
- Area of disturbed ground south of the helicopter maintenance area
- Bermed fuel bladder storage area
- Former helicopter maintenance area
- Disturbed area in the southeast part of the trenched area

Evaluation of historical data collected at SWMU 20 (designated PI 4 during past investigations) is presented in the Final PA/SI Report (CH2M HILL, 2008d) and Final SI/ESI Report (CH2M HILL, 2010b). Although the data collected during the PA/SI suggested there had been a release of volatile organic compounds (VOCs) to groundwater, the spatial coverage of monitoring wells was not adequate to sufficiently characterize the potential source area. Therefore, PI 4 was part of an ESI, for which the field work, as described in the SAP (CH2M HILL, 2009b), was completed in May 2009. During the ESI, additional monitoring well installation and groundwater sampling were performed. The Final SI/ESI Report, which includes PI 4, was submitted in August 2010 (CH2M HILL, 2010b). The SI/ESI Report identified low levels of VOCs in groundwater at PI 4; specifically, low-level exceedances of the trichloroethene (TCE) maximum contaminant limit (MCL) were observed in one well over two rounds of sampling. Collection of another round of groundwater samples from all site wells for VOC analysis was recommended in the Final SI/ESI Report to confirm low levels or evaluate presence of any trends. A Final Supplemental ESI and Pilot Study SAP was submitted in September 2011 which described additional soil and groundwater sampling and a potential pilot study (CH2M HILL, 2011k). During the Supplemental ESI five new wells were installed around the well that had the low level TCE concentrations in an attempt to confirm the localized presence of TCE. However, the area of TCE contamination was determined to be larger than previously thought, so two additional wells were installed in the downgradient direction. These two wells also contained relatively low levels of TCE, but demonstrated the area of contamination had not yet been delineated. Therefore, the Supplemental ESI was halted and an RI SAP is being developed for the site to determine the nature and extent of the TCE contamination in groundwater. The draft SAP is scheduled to be submitted for regulatory review in August 2012. Because the site will now be the subject of an RI, its designation has been changed to SWMU 20.

PI 21 (Quarry, Firing Point)

During the EBS in December 2002, three surface soil samples were collected from a small area of discolored soil near the remains of a small sheet metal structure, with pipes protruding from the embankment. The samples were analyzed for VOCs, SVOCS, metals, herbicides, pesticides, PCBs, perchlorate, TPH-DRO, and TPH-GRO. Evaluation of the data suggest there was not a site-related release of contamination at this area. However, review of the location of the samples relative to the area of site activities suggests these data are not relevant for making release assessment determinations at PI 21.

A Preliminary Range Assessment (PRA) (NAVFACENGCOM, 2003b) was completed in 2003 to identify past range operations and/or management practices that may have had the potential to result in adverse environmental impacts. A field reconnaissance, archive records search, and aerial photographic analysis were conducted as part of the PRA at PI 21. The PRA did not identify the presence of possible munitions and explosives of concern (MEC) at PI 21.

Although there are no records of past releases at PI 21, review of historical photographs indicates the site was likely used only for quarrying operations and noted the presence of a vertical storage tank between 1959 and mid 1970. Review of historical records did not indicate what material may have been stored in the tank, which may have been used for water storage. Representative of the Environmental Technical Subcommittee conducted a site visit in March 2012 to evaluate the site conditions, primarily within the areas of interest identified in historical aerial photographs. The Subcommittee determined that soil sampling at the location of the former vertical tank is warranted to determine if a CERCLA-related release(s) occurred.

Based on the above information, an SI SAP is scheduled to be submitted for regulatory review in August 2012.

2.1.3 Munitions Response Sites

UXO 1—Eastern Conservation Area (ECA)

The ECA, designated as MRS UXO 1 in the ERA/SI Report, was not an operational area for munitions use. However, its close proximity to the LIA, where extensive naval gunfire and ATG bombing took place, resulted in the ECA being a potential area for MEC. In addition, the open burn/open detonation (OB/OD) area within the LIA generated an explosive safety arc that extended into the ECA. The ECA was part of the TCRA to remove munitions from the surface. The surface removal activities for the ECA were completed in February 2009.

In February 2008 an EE/CA for the Subsurface Removal of MEC from the Roads and Beaches was finalized. A Final NTCRA Work Plan for actions identified in the EE/CA was submitted to the regulatory agencies in October 2008 (CH2M HILL, 2008m). The NTCRA has been completed and removed subsurface munitions from the main road and Playa Blanco Beach of the ECA.

During the TCRA and NTCRA removed over 1400 MEC items from UXO 1. Based on the results of the TCRA and NTCRA, an RI was conducted at the ECA to assess the nature and extent of contamination and potential environmental and human health risks associated with exposure to any contamination identified. The RI field investigation was completed in February 2011 and the draft RI report was submitted in January 2012. A draft Feasibility Study, which evaluated remedial alternatives for the site, was submitted in March 2012. Regulatory comments on the RI and FS reports are currently being resolved.

UXO 2—LIA Beaches

UXO 2 encompasses approximately 58 acres of beaches along the perimeter of the LIA (**Figure 2-2**). UXO 2 is further defined as the sandy beach areas extending from the waterline to the inland extent of turtle nesting habitats, as described in the *Final Biological Assessment for the Former Live Impact Area* (GMI, 2006). The TCRA (interim action) at UXO 2 for the surface removal of munitions was initiated in 2005. In June 2009 the field activities for a NTCRA (interim action) for subsurface removal of munitions were initiated for UXO 2 (CH2M HILL, 2009c). As of May 2012, over 1,100 surface and subsurface MEC items have been removed from UXO 2. The NTCRA to remove subsurface MEC is ongoing. An RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 3—LIA Roads

UXO 3 encompasses approximately 39 acres throughout the LIA and consists of selected roadways and 25 foot buffers on each side of the selected roads (**Figure 2-2**). UXO 3 runs through UXO 4 and adjacent to portions of UXO 2.

As part of the NTCRA for the Roads and Beaches a DGM survey was conducted for 10 acres of the roadways and buffer area that make up UXO 3. A total of 14,060 subsurface anomalies were detected during the DGM survey. Through May 2012, over 2,100 MEC items have been removed from the surface and subsurface. The NTCRA subsurface clearance of MEC is ongoing. Based on findings from the NTCRA and geophysical surveys, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 4—LIA Interior

UXO 4 encompasses approximately 855 acres consisting of a majority of the former LIA, excluding the roads and beaches (**Figure 2-2**).

In 1965, training activity began in the LIA where several mock-ups, such as old tanks and vehicles, were used as targets for aerial bombing. Since the mid-1970s, NGF was practiced, where several point and area targets for ships were constructed (Tippets et al., 1979). Marine artillery fired from the west likely impacted this area also.

The TCRA (interim action) at UXO 4 was initiated in 2005. The MEC removed from the ground surface consisted of multiple types of munitions items (e.g., bombs, projectiles, rockets, flares, sub munitions).

Through May 2012, over 51,600 MEC items have been removed during the TCRA. The sub munitions area of the site remains to be surface cleared. Based on the results of the ERA/SI and TCRA, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 5—SIA Restricted Roads

UXO 5 encompasses approximately 38 acres throughout the SIA and is composed of selected roadways and 25 foot buffers on each side of the selected roads (**Figure 2-2**).

In June 2009 the field activities for a NTCRA (interim action) were initiated (CH2M HILL, 2009c).

Through May 2012 a total of 292 MEC items have been removed at UXO 5 during the NTCRAs and the SI. Based on findings from the NTCRA, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 6—EMA/SIA Public Roads

UXO 6 encompasses approximately 62 acres of roads including the road surface and 25 foot buffers on each side of the roads (**Figure 2-2**). The western portion of UXO 6 lies in the former EMA and the eastern portion lies in the former SIA.

A total of 35 MEC items were identified at UXO 6 during the current NTCRA for surface and subsurface clearance. The surface removal of MEC from this site is currently being conducted as part of the NTCRA (interim action). Based on findings from the NTCRA, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 7—EMA/SIA North Beaches

UXO 7 encompasses approximately 54 acres and is comprised of the sandy beach areas located along the north shore of the former VNTR. Beaches located in UXO 7 include Puerto Diablo, Puerto Negro, and Playa Capana. There are 10 additional beaches that have no known historical names included in UXO 7.

The removal of surface and subsurface MEC at the beaches is currently being completed under the NTCRA and through May 2012 a total of 559 MEC items have been removed. Based on the results of this NTCRA, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 8—SIA South Beaches

UXO 8 encompasses approximately 45 acres and is comprised of the sandy beaches located along the southern shore of the area formerly referred to as the SIA (**Figure 2-2**). Beaches located in UXO 8 include Playa Matias, Playa Jalova, Playa Jalovita, Paya Yoye, Cayo Conejo and Playa Fanduca. There are additional beaches that have no known historical names included in UXO 8.

A total of 236 MEC items were removed at UXO 8 under the NTCRA. The removal of subsurface MEC at the beaches is currently being completed under the NTCRA. Based on the results of this investigation and the NTCRA, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 9—SIA Exterior

UXO 9 encompasses approximately 943 acres and is comprised of gentle slope areas adjacent to the roads of the former SIA (**Figure 2-2**). In February 2009 the field activities for a NTRCA were initiated to remove surface munitions from the site.

The NTCRA and transects conducted in UXO 9 confirmed that the SIA was used as target areas for marine artillery and air-ground bombing of practice munitions. Through May 2012, over 17,289 MEC items have been removed from the site as part of the ongoing NTCRA (interim action). Based on findings from the ERA/SI and the NTCRA, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 10—SIA Interior

UXO 10 encompasses approximately 900 acres and is comprise of the interior section of the area formerly known as the SIA (**Figure 2-2**). In February 2009 the field activities for a NTCRA were initiated at the SIA (CH2M HILL, 2009c) to remove surface munitions from the site.

Through May 2012, over 2,200 surface munitions have been removed from this site as part of the NTCRA (interim action). Based on findings from the ERA/SI and the NTCRA, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 11—EMA Public Roads

UXO 11 encompasses approximately 86 acres and is comprised of roadways anticipated to be used by the public within the former EMA, the total footprint of this site includes the road surface and 25 foot buffers on each side of the roads (**Figure 2-2**).

In June 2009 the field activities for a NTCRA (interim action) were initiated (CH2M HILL, 2008i) to remove subsurface munitions from several UXO Sites including UXO 11.

The NTCRA is ongoing and through May 2012, the NTCRA removed 656 MEC items----- from the site and the DGM identified approximately 1500 subsurface anomalies. Based on the results of the ERA/SI and the NTCRA, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 12—EMA Interior

UXO 12 encompasses approximately 4,465 acres and is comprised of interior portions of the former EMA (**Figure 2-2**). The former EMA is approximately 10,900 acres, and was established in 1947 to provide areas and ranges for the training of Marine amphibious units and battalion landing teams in exercises that included amphibious landings, small-arms fire, artillery and tank fire, shore fire control, and combat engineering tasks.

In February 2009 the field activities for a non-Time Critical Removal Action (NTCRA) were initiated to remove surface munitions from the eastern portion of UXO 12.

During February, 2011 a brush fire occurred across 215 acres of UXO 12, which allowed easy access to inspect and surface clear any munitions within the area. The inspection identified 17 MEC items, including naval gunfire projectiles, five-inch rockets and a 500 pound bomb. This information indicates that the site may have been used as a target area for naval gunfire and air-to-ground bombing, in addition to the previously documented marine artillery exercises.

Based on this information, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 13—EMA West

UXO 13 encompasses approximately 2,434 acres in size and is located in the northwest of the former EMA (**Figure 2-2**). During 1966, six ranges were established in the area along the north coast in the area identified as UXO 13. These ranges remained operational through February 1999 when they were deactivated until further notice by the Commanding Officer of AFWTF.

Over 80 MEC items were identified in the ERA/SI. Based on the high explosive safety hazards of the MEC used at the site, as well as the high frequency of trespassing that occurs at UXO 13, a NTCRA will be conducted at the easternmost 620 acres of UXO 13 where MEC have been identified. Based on this information, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 14—EMA South

UXO 14 encompasses 1,050 acres and is located in the southern portion of the former EMA; the site is south of UXO 11 and adjacent to Ensenada Honda (**Figure 2-2**). Over the years a Range 10 was established as a range with all firing from a single point. This range was located adjacent to Ensenada Honda adjacent to a mangrove area. A total of 61 MEC items were identified at the site. As a result, Based on this information, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 15—Puerto Ferro

UXO 15 encompasses approximately 535 acres and is located to the southeast of the area formerly referred to as the EMA.

Although 32 MD items were identified at the site as part of the ERA/SI, no MEC items were identified at UXO 15. An aerial magnetometer survey identified subsurface anomalies. An RI will be conducted to assess if these anomalies are munitions related or are related to the subsurface geology. Additional investigation/assessment of the debris piles and subsurface anomalies will also be conducted as part of the RI to determine if UXO is present at the site, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 16—Underwater Areas

The underwater areas adjacent to the range and operational areas on East and West Vieques have portions that are known or suspected to have been impacted by MEC. Limited investigation data has been collected as part of various non-Navy “pilot tests” and investigations at the underwater areas; however, based on the historical information, an RI will be conducted for the underwater areas of East and West Vieques. The underwater areas to be addressed include all of those underwater areas identified within the NPL boundary. The initial phase of the underwater investigation will be a wide area assessment to provide a preliminary evaluation of the nature and extent of the underwater MEC.

UXO 17—Other Sites

UXO 17 is located to the south of the area formerly referred to as the EMA (**Figure 2-2**). There is one PAOC site (PAOC EE) within UXO 17 that is still under investigation, as described below.

PAOC EE

PAOC EE is a suspect location of former storage of munitions in earthen berms (CH2M HILL, 2004a). A DGM survey of the interior portion of the site during 2011 (CH2MHILL, 2012i) and subsequent data analysis identified approximately 2,190 discrete anomalies and 352 polygons (areas of concentrated anomalies) in the subsurface at PAOC EE. A total of 458 anomalies were excavated in a statistically based approach to provide a high confidence level whether or not MEC was present at the site. During the excavation, two MEC were recovered: a 40mm flare and a canister containing propellant. Based on these findings, an RI will be conducted at the site, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

UXO 18—Cayo La Chiva

A site inspection of the island Cayo La Chiva adjacent to Blue Beach, a public beach, identified five 5-inch rockets. Based on this information, an RI will be conducted to characterize the nature and extent of environmental and MEC and assess the potential risks, as described in the Draft Master Sampling and Analysis Plan for the East Vieques Terrestrial UXO Sites (CH2M HILL, 2012d).

2.2 Western Vieques Sites

2.2.1 Environmental Sites

This subsection summarizes the status of the 16 environmental sites (SWMUs and AOCs) on western Vieques. Additional detail for the three sites (SWMU 6, AOC E, and AOC I) for which investigation is ongoing is provided herein. Site-specific detail for sites closed out of the CERCLA process is provided in **Appendix A-1** and past SMPs. The locations of the western Vieques sites are shown in **Figure 2-3.** The anticipated schedule for deliverable submittal for the following sites, as applicable, is provided in **Figure 3-1**.

SWMU 6—Former Mangrove Disposal Site

The Mangrove Disposal Site is located in the ocean-side mangrove swamp in Laguna Arenas along Highway 200 on the former NASD. There is no known history of permits pertaining to this site. The disposal site was in use during the 1960s and 1970s as a disposal area for general facility wastes. Waste discarded at the site comprised broken glass, rubble, and empty containers of lubricants, oil, solvents, and paints. A CH2M HILL inspection team in conjunction with an MEC avoidance team also identified ordnance items and solid waste from the base galley, such as pieces of broken glass and china. The site is adjacent to an access road for public beaches farther west in this part of the island. While the waste was in place, a fence separated the site from Highway 200, thereby limiting access.

Although the data included in the RI suggested the waste did not pose an unacceptable risk to human health or ecological receptors (CH2M HILL, 2007b), the Navy and regulatory agencies concurred that there was uncertainty associated with this conclusion because soil samples were collected adjacent to the waste rather than directly through the waste due to safety concerns. The agencies also concurred that the waste at SWMU 6 posed an unacceptable uncertainty regarding a potential future source of contamination. An EE/CA was prepared for public comment (CH2M HILL, 2005h). No public comments were submitted. A Final Removal Action Work Plan was submitted in February 2008 (Field Support Services, Inc., 2008). Human health and ecological risk assessments conducted during pre-removal soil profiling suggested some areas of soil may have posed potentially unacceptable risks for unrestricted use (CH2M HILL 2008j, 2008k). The extent of debris removal was based on visual observation; the extent of soil removal was defined by the pre-removal waste characterization human health and ecological risk assessments, which were summarized in the technical memorandum entitled *Determination of the Disposition of Excavated Soils at SWMU 6* (CH2M HILL, 2008n).

The removal action to remove the waste and areas of soil with contaminant concentrations unsuitable for unrestricted use began in February 2009 and was completed in June 2009. The details of the removal action and site restoration activities (i.e., mangrove planting) are described in the Final Construction Completion Report (CCR) (Field Support Services, Inc., 2010). Due to the removal action, the environmental setting was altered from a predominantly terrestrial habitat to a shallow, open water marine habitat that is hydraulically connected to and tidally influenced with the adjacent Laguna Kiani complex. The site now supports a relatively diverse community of marine fish and invertebrates, along with foraging wildlife such as wading birds. Because the site conditions changed as a result of the removal action, it was determined that the newly formed sediment and surface water area were not properly characterized by the post-removal confirmatory sampling conducted immediately following the removal action. Therefore, a SAP was developed to appropriately characterize the post-removal conditions. The Final SAP was submitted in December 2010 (CH2M HILL, 2010f). Field work was completed in February 2011 which included further surface water, sediment and surface soil sampling. Additionally, background surface water and sediment samples were collected from adjacent lagoons. The sediment data indicated there may be unacceptable risk associated with human consumption of fish and crab exposed to sediment contaminants. Because these estimates were based on modeling contaminant uptake, a SAP was developed to collect and analyze fish and crab from the lagoon to get more accurate estimates of contaminant levels in the lagoon biota (CH2M HILL January 2012a). The 2011 surface water and sediment data, as well as the subsequent fish and crab data, were used to prepare human health and ecological risk assessments that were included in a draft Feasibility Study (CH2M HILL, June 2012f) submitted for regulatory review.

AOC E—Former UST Site 2016

AOC E is located within the public works area of the former NASD at the former location of a UST near the northwest corner of Building 2016. The former UST was a 550-gallon, single-wall, steel waste oil tank. The piping system associated with the UST consisted of single-wall steel pipes. The UST was installed in 1970 to store waste oil generated from vehicle maintenance activities that take place in Building 2016. As part of UST removal activities, the former UST and associated piping were removed in November 1996. In addition, soil samples were collected and submitted for laboratory analysis; the soil samples contained TPH concentrations ranging from 568 to 1,790 milligrams per kilogram (mg/kg).

The site was transferred from the PREQB UST program to the CERCLA program in 2000 as part of the closure of the NASD. Information regarding the nature and extent of contamination and potential risks posed by the contamination can be found in the Final RI Report for AOC E (CH2M HILL, 2008f). The risk assessment concluded that the site soils and groundwater do not pose an unacceptable risk for industrial use. The site groundwater, if extracted for consumptive use, would pose an unacceptable risk. However, the groundwater aquifer is unsuitable for use as a source of drinking water without desalinization due to high concentrations of sodium and chloride ions (USGS, 1989).

A Multi-phase Vacuum Extraction (MPE) Pilot Study was performed at AOC E in June, July, and August 2002 to evaluate the effectiveness of this technology in mitigating the free phase hydrocarbon product accumulation. The Pilot Study showed the technology to be partly successful, but a small amount of free phase product (i.e., a sheen) remained.

Based on supplemental soil and groundwater sampling conducted in 2008, a Pilot Study was implemented between January 2010 and December 2011 that included *in situ* chemical oxidation (ISCO) injection followed by enhanced *in situ* bioremediation (EISB) for groundwater contaminants and nitrate injection for soil contaminants that may pose a continuing leaching concern. The Pilot Study was performed in general accordance with the Final SAP that was submitted in February 2010 (CH2M HILL, 2010h). Post-DBB injection soil samples collected in November 2011 indicated that soil-to-groundwater leaching is not a concern. The ISCO pilot test, covering the entire impacted area, has shown ISCO to be effective in reducing the concentrations of site COCs in groundwater to acceptable levels. However, the presence of elevated residual persulfate concentrations hinders the ability to monitor for potential rebound of COCs. Therefore, the Navy, USEPA, and PREQB concurred that the pilot study had generally satisfied its objectives and that the site should proceed to an FS to address the residual persulfate and potential for contaminant rebound.

The Draft Focused Feasibility Study Report was submitted for regulatory review in April 2012 (CH2M HILL 2012c).

AOC I—Asphalt Plant

AOC I is located on the south side of Route 200 just west of the north gate and consists of two former asphalt truck parking/loading containment areas and the location of two former diesel ASTs. Operations at the plant were conducted from the 1960s until 1998.

The EBS, the Expanded PA/SI Phase II, and the August/September 2004 RI produced 47 surface soil samples, 33 subsurface soil samples, and 7 groundwater samples. Based on the information provided in the Interim RI Report, two additional monitoring wells were proposed in the Supplemental RI Work Plan (CH2M HILL, 2005d). The supplemental field work was completed in December 2005. Based on a newly-defined Human Health Risk Assessment (HHRA) protocol (CH2M HILL, 2007c), the Final RI Report (CH2M HILL, 2008e) was submitted in June 2008 and contains information regarding the nature and extent of contamination at AOC I. Based on supplemental soil and groundwater sampling conducted in 2008, a Pilot Study began in January 2010 that includes ISCO injection followed by EISB for groundwater contaminants. The Pilot Study is being performed in accordance with the Final SAP that was submitted in February 2010. A status report was submitted in March 2011 (CH2M HILL 2011o). The Pilot Study sampling is planned to be completed in November 2012, based on concurrence among the Technical Subcommittee following evaluation of the pilot study data collected to date. If the data show no COC rebound, then a No Further Action Proposed Plan will be prepared. If rebound is observed, an FS will be prepared.

Additional NFA Environmental Sites

Based on the results of Expanded PA/SIs for the Former NASD, nine sites were recommended for NFA in the NFA Report for Nine Sites (CH2M HILL, 2006b). The NFA recommendation was based on several data sources including: site-specific sampling for VOCs, semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and pesticides, review of historical aerial photographs, interviews with former employees, review of archived records, and SIs. Further, a quantitative HHRA and a qualitative ecological survey were completed for each site. The risk assessments concluded the sites did not pose unacceptable risks to human health or the environment. PREQB concurred with the NFA determination for the nine sites in its Resolution and Notification issued in February 2007 (PREQB, 2007).

2.2.2 Munitions Response Site (SWMU 4—Inactive OB/Waste Explosive Detonation Range)

SWMU 4, designated as West Vieques UXO 1 in the ERA/SI Report, is an inactive OB/OD site identified at the western end of NASD during the EBS. The site was reportedly used for thermal destruction and burning of retrograde munitions from 1969 to 1979. Other explosive materials disposed at SWMU 4 included material from the rework of munitions (e.g., loose powder, primers), ordnance items from the torpedo shop at NSRR, and flares and cartridge-activated devices (Greenleaf/Telesca, 1984).

Based on the results of the EBS, a phased MEC RI, following the CERCLA process, was conducted to meet the following objectives:

- Identify the specific location of the former OB/OD pits that were not previously documented
- Characterize the nature and extent of the MEC items in the vicinity of the OB/OD pits to evaluate the extent of the “kick out” area
- Evaluate the explosives safety risk of the MEC items identified onsite
- Develop a MEC RI Report for the site

A digital geophysical survey was conducted over an 87-acre area that identified approximately 23,700 buried metallic anomalies (CH2M HILL, 2004d). The survey identified 16 potential OB/OD pits that were later confirmed by the MEC RI. Based on the findings of the MEC investigation, the potential aerial extent of the MEC at SWMU 4 is approximately 180 acres. A total of 11,211 metallic items were removed from the surface or subsurface and inspected during the MEC RI. Approximately 16 percent, or 1,792, of the items removed were found to contain high explosives.

During December 2011, a NTCRA at SWMU 4 was completed during which approximately 24 acres of roads and beaches were cleared of vegetation and subsurface cleared of munitions A total of 910 MEC and munitions debris (MD) items and materials potentially presenting an explosive hazard (MPPEH) were removed. These items required demolition to eliminate the potential explosive hazard associated with them.

An RI/FS was completed in May 2012 (CH2MHILL, 2012e) to characterize the nature and extent of MEC /environmental contamination, assess potential risks to human health and the environment, and evaluate remedial alternatives at SWMU 4. MEC was identified up to a maximum extent of approximately 2,600 ft from the OB/OD area during the NTCRA. MEC recovered from the vicinity of the OB/OD pits were predominately 20mm high explosive (HE) projectiles; moreover, 20mm projectiles were the predominant MEC type recovered throughout the entire study area (over 90 percent of the MEC recovered). Perchlorate was the most frequently observed and most widespread contaminant within surface and subsurface soil and groundwater in SWMU 4.

Perchlorate was detected above only the leaching-to-groundwater screening criterion (SSL) in soil and was identified as a COC in groundwater based on hypothetical future potable use scenarios for residents and industrial workers. However, these scenarios are unlikely for SWMU 4, since legislation mandated the establishment of a wildlife refuge for the site. No unacceptable ecological risks were identified and no further evaluation or action is warranted for ecological receptors.

A feasibility study was conducted to evaluate remedial alternatives for SWMU 4 to address potential risks identified in the RI. Remedial Action Objectives (RAOs) include minimizing explosive safety risk associated with MEC to be

compatible with current and future land use, minimizing the potential for unauthorized access to the site, preventing exposure to perchlorate in groundwater at concentrations that pose a potentially unacceptable human health risk, and ensuring potential human health risk and/or exposure to edible fish and aquatic crab containing contaminant concentrations attributable to past Navy activities are acceptable.

Based on the above information, a Proposed Plan is currently being developed. It is anticipated that the ROD for SWMU 4 will be signed in 2012.

Underwater Areas

The underwater area, designated as UXO 16, extends on east and west Vieques. Adjacent to the former operational areas on Vieques, including SWMU 4, may have been impacted by MEC. Limited investigation data has been collected as part of various non-Navy “pilot tests” and investigations at the underwater areas; however, based on the historical data and the limited investigation data a RI (MEC and MC) will be conducted for selected underwater areas of Vieques, including the offshore area adjacent to SWMU 4. The underwater areas to be addressed include all of those identified within the NPL boundary (**Figure 1-2**). The initial phase of the underwater RI will be a wide area assessment to assess the lateral extent of MEC in the underwater environment.

2.3 Munitions Response Site Prioritization

The MRS Prioritization Protocol (MRSPP) is an approach used by DoD as a tool for assigning a relative priority for initiating munitions response actions at munitions response sites (MRSs). The scope of the site prioritization for the MRSs at Vieques was based on the DoD MRS Prioritization Protocol published in the October 5, 2005 *Federal Register*. DoD generally considers those MRSs posing the greatest hazard as having the highest priority for munitions response actions. The protocol provides a uniform procedure for assessing explosives safety and environmental risk at MRSs; and is comprised of three hazard evaluation modules: Explosive Hazard Evaluation (EHE) module, the Chemical Warfare Material Hazard Evaluation (CHE) module, and the Health Hazard Evaluation (HHE) module. An MRS priority is established based on the ratings from the EHE, CHE, and HHE modules. Since there are no known or suspected chemical warfare materials at Vieques, the CHE module does not apply to the Vieques MRSs.

The MRS prioritization evaluation for the Vieques MRSs was completed using the best available information from the Expanded Range Assessment / Site Inspection Report (CH2M HILL, 2010c) and the interim removal actions at SWMU 4 on west Vieques (CH2MHILL, 2008i). The Explosive Hazard Evaluation (EHE) module was used at MRSs where there is a known or suspected presence of explosive hazard and is comprised of three factors: explosive hazard (based on munitions type and source of hazard), accessibility (based on location of munitions, ease of access and status of property) and receptors (based on population density, population near hazard, types of activities/structures, and ecological or cultural resources).

The HHE module is used for evaluating the potential hazards posed by MC and other chemical constituents at MRSs. However, for the Vieques MRSs sufficient MC data has only been collected for the SWMU 4 site on west Vieques. As a result, there are no other MRSs on Vieques containing MC data to provide a relative priority to SWMU 4. Based on this information, and the potential for environmental risks at all the Vieques MRSs; a default rating of "medium" was used for each MRS on Vieques. The HHE module will be updated as additional MC data become available from future environmental investigations at the MRSs. The HHE module is comprised of three factors: contaminants present, environmental migration pathways, and receptors. The factors are applied to four media: soil, surface water, groundwater and sediments.

For Vieques, an MRS priority was established based on the ratings from the EHE module. Each MRS was assigned to one of eight MRS priorities based on the ratings of the module, where Priority 1 indicates the highest potential hazard and Priority 8 the lowest potential hazard. A summary of the MRSPP scores for the VNTR MRSs is summarized on **Table 2-2**. The detailed scoring for each MRS is provided in **Appendix C**. A total of 16 of the 18 MRSs on Vieques have been ranked a Priority 2 hazard. A Priority 2 hazard is the highest priority rating that can be scored for sites not containing chemical warfare materials. The MRSPP scores have not changed in 2012 based on the additional MC and MEC data that has become available during the last year for each MRS.

Table 2-1
Operable Units Cross Reference Table
Site Management Plan, FY 2013
Vieques, Puerto Rico

EPA CERCLIS OU Number and Description	Common Site Name
02 - WEST AOC E - UST AREA	AOC E - UST Site 2016
03 - WEST AOC H - POWER PLANT	AOC H - Power Plant
04 - WEST AOC I - ASPHALT PLANT	AOC I - Asphalt Plant
05 - WEST AOC J - SWD AREA	AOC J - Former Staging Area Disp.
06 - WEST AOC R - MAINT BLDG & SWD	AOC R - Former Staging/Ops Area
07 - WEST SWMU 4 - OB/OD AREA	SWMU 4 - OB/OD Site
08 - WEST SWMU 6 - SWD AREA	SWMU 6 - Mangrove Disposal Site
09 - WEST SWMU 7 - SWD AREA	SWMU 7 - Quebrada Disposal Site
10 - UX07 EMA/SIA North Beaches	UXO 7 EMA/SIA North Beaches
11 - EAST SWMU 1 - CAMP GARCIA LF	SWMU 1 - Former Camp Garcia Landfill
12 - UX02 LIVE IMPACT AREA -BEACHES	UXO 2, LIA Beaches
13 - UX03 LIVE IMPACT AREA -ROADS	UXO 3, LIA Roads
14 - UX04 LIVE IMPACT AREA-INTERIOR	UXO 4, LIA Interior
15 - UX05 SIA - RESTRICTED ROAD	UXO 5, SIA Restricted Roads
16 - UX08 SIA South Beaches	UXO 8, SIA South Beaches
17 - UX016 -UNDERWATER SITES	UXO 16, Underwater Areas
18 - UX01 EASTERN CONSERVATION AREA	UXO 1, Eastern Conservation Area
19 - UX06 EMA/SIA Public Roads	UXO 6, EMA/SIA Public Roads
20 - UX09 SIA Exterior	UXO 9, SIA Exterior; SWMU 5, Spent Battery Accumulation Area; SWMU 8, Waste Oil Accumulation Area; SWMU 12, Solid Waste Collection Unit Area; AOC A, Diesel Fuel Fill Pipe Area; PI 1, Water Production Well; PI 17, Amphibious assault exercises, possible small arms bunkers and/or air targets; PI 22, Civilian residences and target area;
21 - UX010 SIA Interior	UXO 10, SIA Interior
22 - UX011 EMA Public Roads	UXO 11, EMA Public Roads
23 - UX012 EMA Interior	UXO 12, EMA Interior; PI 2 Water Production Well, small arms range; PI 3, Water Production well, small arms range; PI 12, Wind Driven and Private Water Production Well; PI 15 Former Location of Civilian Home, possible observation pt or small arms range; PI 16, Former Location of Civilian Home, limited OB/OD may have occurred; PI 18, Small Arms Range; PI 19, Small Arms Range, Artillery Firing Point; PAOC Y, Observed large metal object on east side of roadway; PAOC Z, Observed on overturned tractor-trailer on north side of roadway.
24 - UX013 EMA West	UXO 13, EMA West; PI 23, Water Production Well, Possible Observation Point; PAOC AA, Small Arms Range No. 1; PAOC BB, Small Arms Range No. 2, PAOC CC, Small Arms Range No 3; PAOC DD, Small Arms Range No. 4
25 - UX014 EMA South	UXO 14, EMA South
26 - UX015 Puerto Ferro	UXO 15, Puerto Ferro; PI 9 Ammunition Storage in Earthen Berms and Disposal of Ammunition (OB/OD possibly); PI 13, Lighthouse and ordanance possible launched from site.
27 - UX017 Camp Garcia	UXO 17, Other Sites (PAOC EE, Former Storage of Munitions in Earthen Berms; PAOC FF, Former Artillery Firing Point; PI 14, Scrap Metal, Ammunition Boxes, Shell Casing Disposal)
28 - UX018 Cayo La Chiva	UXO 18, Cayo La Chiva
29 - SWMU 20 Former Helicopter Maintenance Area	SWMU 20, Former Helicopter Maintenance Area, Trenched Area, Disturbed Area, and Bermed Areas used for Fuel Bladder Storage (formerly PI 4)

Table 2-1
Operable Units Cross Reference Table
Site Management Plan, FY 2013
Vieques, Puerto Rico

EPA CERCLIS OU Number and Description	Common Site Name
No EPA OU	SWMU 2, Former Fuels Offloading Site
No EPA OU	SWMU 4 Waste Area Building 303 (east Vieques)
No EPA OU	SWMU 5, Former IRFNA/MAF-4 Disposal Site (west Vieques)
No EPA OU	SWMU 6, Waste Oil and Paint Accumulation Area (east Vieques)
No EPA OU	SWMU 7, Waste Oil Accumulation Area (east Vieques)
No EPA OU	SWMU 10, Former Waste Paint and Solvents Disposal Ground (west Vieques)
No EPA OU	SWMU 10, Sewage Treatment Lagoons (east Vieques)
No EPA OU	SWMU 14, Former Wash Rack (west Vieques)
No EPA OU	SWMU 15, Former Waste Transportation Vehicle Parking Area (west Vieques)
No EPA OU	AOC B, Former Wastewater Treatment Plant (west Vieques)
No EPA OU	AOC C, Drainage Ditch at Former Transportation Shop (west Vieques)
No EPA OU	AOC F, Former UIC Septic Tank (west Vieques)
No EPA OU	AOC F, Rock Quarry (east Vieques)
No EPA OU	AOC G, Pump Station and Chlorination Building at Sewage Lagoons (east Vieques)
No EPA OU	AOC K, Former Water Well (west Vieques)
No EPA OU	AOC L, Abandoned Septic Tank (west Vieques)
No EPA OU	PI 5, Former Airfield and Associated Ditches
No EPA OU	PI 6, Former PCB Storage Pad and Vehicle Wash Pad
No EPA OU	PI 8, Former Motor Pool Maintenance Area
No EPA OU	PI 10, Former Wastewater Leach Field
No EPA OU	PI 11, Pump Station, Sanitary Wastewater Outfall
No EPA OU	PI 20, Observation Point, Quarry
No EPA OU	PI 21, Quarry, Firing Point
No EPA OU	PAOC I, Former Power Plant and Mechanics Shop
No EPA OU	PAOC J, Former Vehicle Maintenance Area
No EPA OU	PAOC K, Former Wash Rack
No EPA OU	PAOC L, Former Paint and Transformer Storage Area
No EPA OU	PAOC M, Former Fuel Facility
No EPA OU	PAOC N, Former Fuel Farm and Filling Station
No EPA OU	PAOC O, Former Boiler Room in Heat Plant Building 238
No EPA OU	PAOC P, Former Water Treatment Pumphouse
No EPA OU	PAOC Q, Former Boiler Room in Heat Plant Building 607
No EPA OU	PAOC R, Former Boiler Room in Heat Plant Building 617
No EPA OU	PAOC S, Former Pipeline and Former Power Plant
No EPA OU	PAOC T, Former public works grounds contractor storage shed, building 305
No EPA OU	PAOC U, Vehicle Maintenance Areas just north of Building 303 at Camp Garcia, Stored petroleum products
No EPA OU	PAOC V, Storage of leaking transformer
No EPA OU	PAOC W, Observed Area of Pooled, discolored water adjacent to main road from Camp Garcia to PI 21
No EPA OU	PAOC X, Debris Area in Ephemeral Stream
No EPA OU	La Chiva Lagoon

Note: EPA only assigns OU numbers to sites where a decision has been made that a Remedial Investigation will be conducted.

TABLE 2-2
Summary of Munitions Response Site Prioritization Protocol Results for Vieques Munitions Response Sites
Site Management Plan, FY 2013
Vieques, Puerto Rico

Site ID	Former Reference	MRS Prioritization Protocol Score
UXO-1	Eastern Conservation Area	2
UXO-2	LIA Beaches	2
UXO-3	LIA Roads	2
UXO-4	LIA Interior	2
UXO-5	SIA Restricted Roads	2
UXO-6	EMA/SIA Public Roads	2
UXO-7	EMA/SIA North Beaches	2
UXO-8	SIA South Beaches	2
UXO-9	SIA Exterior	2
UXO-10	SIA Interior	2
UXO-11	EMA Public Roads	2
UXO-12	EMA Interior	2
UXO-13	EMA West	2
UXO-14	EMA South	2
UXO-15	Puerto Ferro	3
UXO-16	Underwater Areas	2
UXO-17	Camp Garcia	4
UXO 18	Cayo La Chiva	2
SWMU 4(UXO 1)	West Vieques OB/OD Site	2

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Legend

- Sites – Decision Document
- Sites – Under Investigation
- Camp Garcia

N
W E
S

0 2,250 4,500 9,000
Feet

Figure 2-1
East Vieques Environmental Restoration Sites
Site Management Plan, FY 2013
Vieques, Puerto Rico

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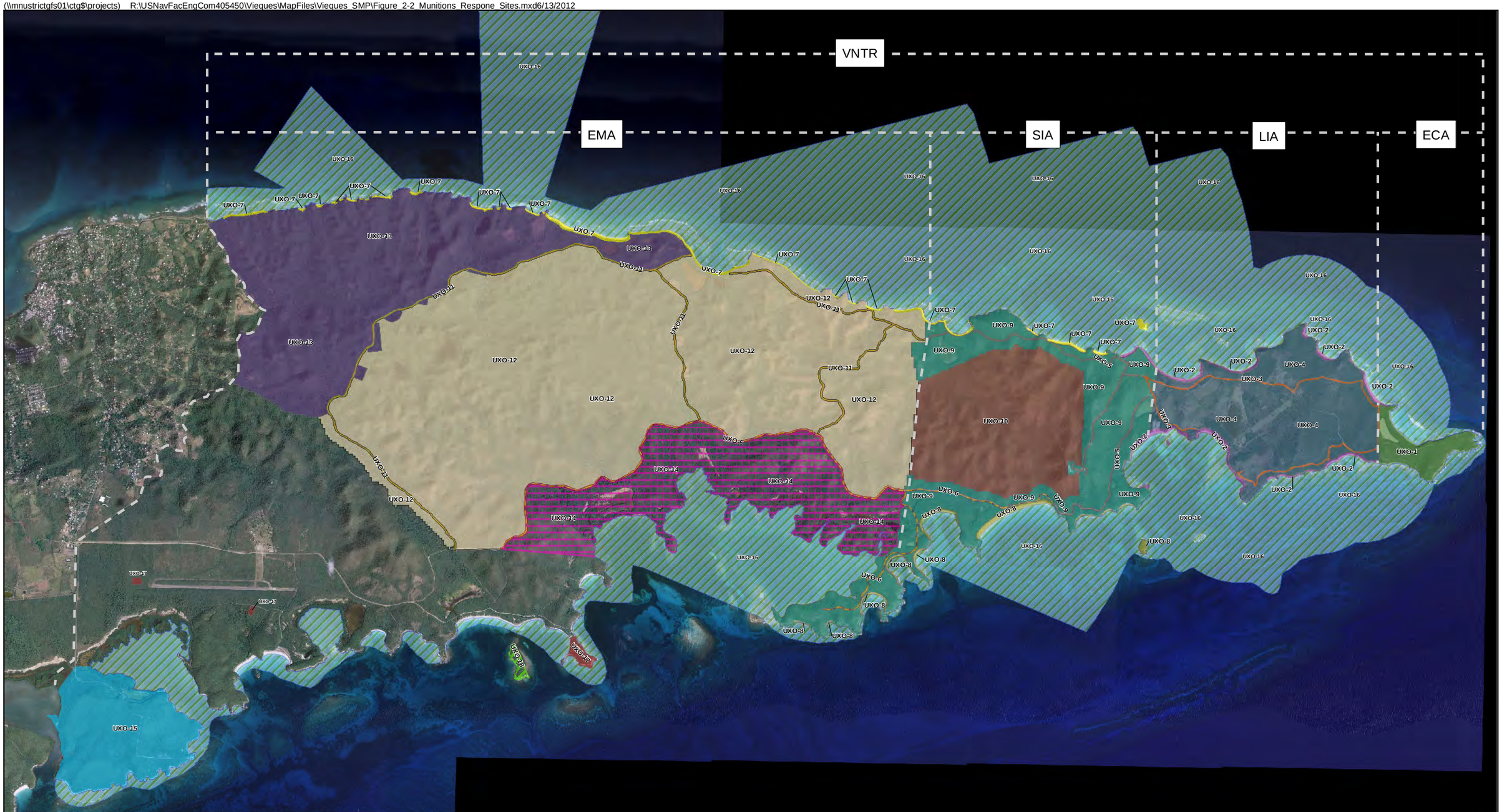

Legend

Munitions Response Sites

- UXO 1 - ECA
- UXO 2 - LIA Beaches
- UXO 3 - LIA Roads
- UXO 4 - LIA Interior
- UXO 5 - SIA Restricted Roads
- UXO 6 - EMA/SIA Public Roads
- UXO 7 - EMA/SIA North Beaches
- UXO 8 - SIA South Beaches
- UXO 9 - SIA Exterior
- UXO 10 - SIA Interior
- UXO 11 - EMA Public Roads
- UXO 12 - EMA Interior
- UXO 13 - EMA West
- UXO 14 - EMA South
- UXO 15 - Puerto Ferro
- UXO 16 -Underwater Areas
- UXO 17 - Camp Garcia Area (PAOC EE, PAOC FF, and PI 14)
- UXO 18 - Cayo de la Chiva

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Feet

Figure 2-2
Munitions Response Sites
Site Management Plan, FY 2013
Vieques, Puerto Rico

CH2MHILL

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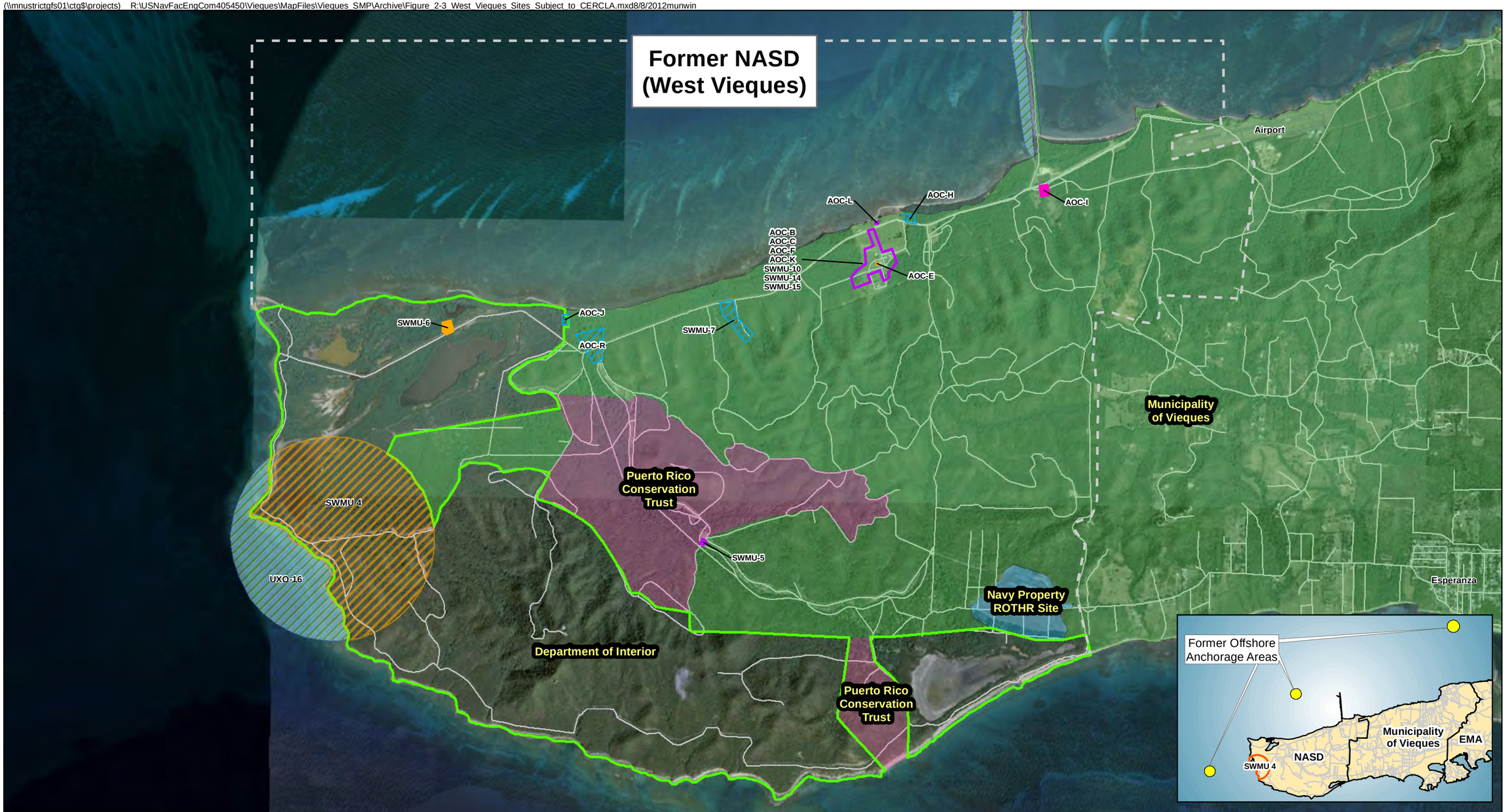

Legend

- Feasibility Study
- Post RI Pilot Study
- No Further Action Record of Decision
- No Further Action Decision Document
- Proposed Plan/Record of Decision

Vieques Land Ownership

- Department of Interior
- Municipality of Vieques
- Navy Property - ROTHR Site
- PR Conservation Trust

Munitions Response Site

- UXO 16 -Underwater Areas

Vieques Features

- Road

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Figure 2-3
West Vieques Sites Subject to CERCLA
Site Management Plan, FY 2013
Vieques, Puerto Rico

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SECTION 3

Schedules and Funding

This section presents the SMP schedule requirements outlined in the FFA. In addition the projected funding for the CERCLA Responsive Actions at the Vieques Site is provided. Milestones established in this SMP are subject to the requirements of the FFA, unless otherwise agreed to by the Parties, or unless directed to be changed pursuant to the agreed Dispute Resolution or Extensions process set out in the FFA. The updated Fiscal Year 2013 schedules for field activities and major project deliverables, including both Primary and Secondary documents, are presented in **Figure 3-1**. The tentative schedules for fiscal year (FY) 11 and beyond are summarized in **Table 3-1**. The schedules will be re-evaluated and updated for the SMP as mutually agreed to by the agencies. **Table 1-1** includes deviations from the schedule submitted in the SMP Fiscal Year 2010 to the current schedule displayed in **Figure 3-1**.

3.1 Document Review Schedule

In accordance with the FFA, this SMP presents the proposed schedules for the CERCLA response actions and associated documentation to be undertaken at the Site. The SMP incorporates existing Milestones contained in approved Work Plans. Milestones approved in future Work Plans will become enforceable to the extent allowed under the FFA and shall be included in the next annual amendment to the SMP. The SMP is to be updated annually and a draft of the SMP Amendment submitted to all parties by June 15. A public notice will be published in the local newspaper to provide a 30 day period for the general public to review the Draft Final SMP.

Milestones in the SMP reflect the priorities agreed to by the Parties through a process of “Risk Plus Other Factors” Priority Setting. Site activities have been prioritized by weighing and balancing a variety of factors including, but not limited to:

- The Department of Defense (DoD) relative risk rankings for the Site
- Current, planned, or potential uses of the Site
- Ecological impacts
- Impacts on human health
- Intrinsic and future value of affected resources
- Cost effectiveness of the proposed activities
- Environmental justice considerations
- Regulatory requirements
- Actual and anticipated funding levels

Unless the Parties agree to another time period, all draft documents shall be subject to a 60-day period for review and comment. In cases involving complex or unusually lengthy reports, USEPA, DOI, or the Commonwealth may extend the 60-day comment period for an additional 20 days by written notice to Navy prior to the end of the 60-day period. On or before the close of any comment period, USEPA, DOI, and the Commonwealth shall transmit their written comments to the Navy.

Following the close of any comment period for a draft document, Navy shall give full consideration to all written comments on the draft document submitted during the comment period. Within 30 days of the close of the comment period on a Draft Secondary Document, Navy shall transmit to USEPA, DOI, and the Commonwealth its written response to comments received within the comment period. Within 60 days of the close of the comment period on a Draft Primary Document, Navy shall transmit to USEPA, DOI, and the Commonwealth a Draft Response to Comments which shall include Navy’s response to all written comments received within the comment period.

As agreed to by all parties, the period for resolving comments on a Draft Document then issuing the Draft Final Primary Document is an additional 30 days. In appropriate circumstances, this time period may be further extended in accordance with the FFA.

The Draft Final Primary Document shall serve as the Final Primary Document if no Party invokes dispute resolution regarding the document or, if invoked, at the completion of the dispute resolution process should Navy's position be sustained.

If Navy's determination is not sustained in the dispute resolution process, Navy shall prepare, within not more than 35 days, a revision of the Draft Final Document that conforms to the results of dispute resolution.

3.2 Primary Documents

Primary Documents include those documents that are major, discrete portions of RI/FS or RD/RA activities. Primary Documents are initially issued by Navy in draft subject to review and comment by USEPA, DOI, and the Commonwealth. Following receipt of comments on a particular Draft Primary Document, Navy will respond to the comments received and issue a Draft Final Primary Document subject to dispute resolution. The Draft Final Primary Document will become the Final Primary Document 30 days after issuance if dispute resolution is not invoked or as modified by decision of the dispute resolution process. A list of Primary documents completed to date is provided in Section 4. Examples of primary documents include the following:

- RI/FS Work Plans, including SAP and Quality Assurance Project Plan (QAPP)
- Risk Assessment Work Plans and Reports
- RI Reports
- Initial Screening of Alternatives
- FS Reports
- Focused Feasibility Study (FFS) Reports
- Proposed Plans
- RODs
- Final RDs (including a land use control [LUC] component where such controls are employed as part of the remedy)
- Remedial Action Work Plans (including a LUC component where such controls are employed as part of the remedy)
- SMP
- Remedial Action Completion Reports

3.3 Secondary Documents

All Secondary Documents shall be prepared in accordance with Target Dates established for the completion and transmission of Draft Secondary Documents. Although USEPA, DOI, and the Commonwealth may comment on the Draft Secondary Documents, such documents shall not be subject to dispute resolution and Milestone requirements of the FFA. Examples of Secondary Documents include the following:

- Health and Safety Plans
- Emergency Removal Action Work Plans, to the extent time permits
- TCRA Work Plans
- Site Screening Process (SSP) Work Plans and Reports
- NTCRA Work Plans
- Pilot/Treatability Study Work Plans
- Pilot/Treatability Study Reports
- EE/CA Report
- Well Closure Methods and Procedures
- Sampling and Data Results
- Preliminary/Conceptual Designs, or Equivalents
- Pre-Final RDs
- All Removal Action Memoranda/Closeout Reports
- Periodic Five-Year Review Assessment Report

For documents pertaining to NTCRAs, the Navy will coordinate and consult with DOI pursuant to the Memoranda of Agreement (MOAs), and USEPA.

3.4 Projected ERP/MRP Funding

While Milestones should not be driven by budget targets, such targets should be considered when setting Milestones. Furthermore, in setting and modifying Milestones, the Parties agree to make good faith efforts to accommodate federal fiscal constraints, which include budget targets established by Navy.

After authorization and appropriation of funds by Congress and within 21 days after Navy has received official notification of Navy's allocation based on the current year's Environmental Restoration, Navy ("ER,N") Account, Navy shall determine if the schedules in the SMP can be accomplished with the allocated funds. If Navy determines within the 21-day period specified above that the allocated funds are not sufficient to accomplish the planned Work for the Site (an appropriations shortfall), Navy shall immediately notify the Parties and a re-scoping or rescheduling of activities may be required.

The projected ERN funding for Vieques from FY11 through FY14 and beyond is summarized in **Table 3-2**.

Table 3-1
FY13 and Beyond Tentative Schedule
Site Management Plan, FY 2013
Vieques, Puerto Rico

Site	Site Name	FY13	FY14	FY15
Environmental Restoration Program				
West Vieques				
AOC E	Former UST Site 2016	FS Report, Proposed Plan	ROD	RA Work Plan, RA
AOC I	Asphalt Plant	Pilot Study	Proposed Plan, ROD	
SWMU 6	Former Mangrove Disposal Site	FS, Proposed Plan	ROD	RD
East Vieques				
SWMU 1	Camp Garcia landfill	RA, LTM	LTM, O&M	LTM, O&M
SWMU 20	Helicopter Maintenance Area, Trenched Area, Disturbed Area, and Bermed Areas used for Fuel Bladder Storage	RI SAP, RI Field Work	RI Report	FS Report
PI 21	Quarry, Firing Point	SI SAP, SI Field Work	No Action Decision Document or SI Report	
La Chiva Lagoon	La Chiva Lagoon	SI SAP, SI Field Work	No Action Decision Document or SI Report	
Munitions Response Program				
West Vieques				
SWMU 4	Inactive OB/Waste Explosive Detonation Range	RD	RA Work Plan, RA	LTM, O&M
East Vieques				
UXO 1	Eastern Conservation Area	FS Report, Proposed Plan	ROD	RA Work Plan, RA
UXO 2	LIA - Beaches	RI SAP	RI Field Work	RI Field Work
UXO 3	LIA - Roads	RI SAP	RI Field Work	RI Field Work
UXO 4	LIA - Interior	RI SAP, RI Field Work	RI Report	FS Report
UXO 5	SIA - Restricted Roads	RI SAP	RI Field Work	RI Field Work
UXO 6	EMA/SIA Public Roads	RI SAP	RI Field Work	RI Report
UXO 7	EMA/SIA North Beaches	RI SAP		RI Field Work
UXO 8	SIA South Beaches	RI SAP		RI Field Work
UXO 9	SIA Exterior	RI SAP, NTCRA, RI Field Work	RI Report	FS Report
UXO 10	SIA Interior	RI SAP, NTCRA, RI Field Work	RI Report	FS Report
UXO 11	EMA Public Roads	RI SAP	RI Field Work	RI Report
UXO 12	EMA Interior	RI SAP, RI Field Work	RI Field Work	RI Report
UXO 13	EMA West	RI SAP, NTCRA	NTCRA, RI Field Work	RI Field Work
UXO 14	EMA South	RI SAP	RI Field Work	RI Report
UXO 15	Puerto Ferro	RI Field Work	RI Report	FS Report
UXO 16	Underwater Areas	Bahia Icacos Water Way Barrier Work Plan and Field Work, Underwater MEC Wide Area Assessment QAPP and Field Work	Underwater MEC Wide Area Assessment Report	RI SAP for Selected Areas
UXO 17	Other Sites (PAOC EE)	RI SAP, Anomaly Investigation	RI Field Work	RI Report
UXO 18	Cayo La Chiva	RI SAP, RI Field Work	RI Report	FS Report

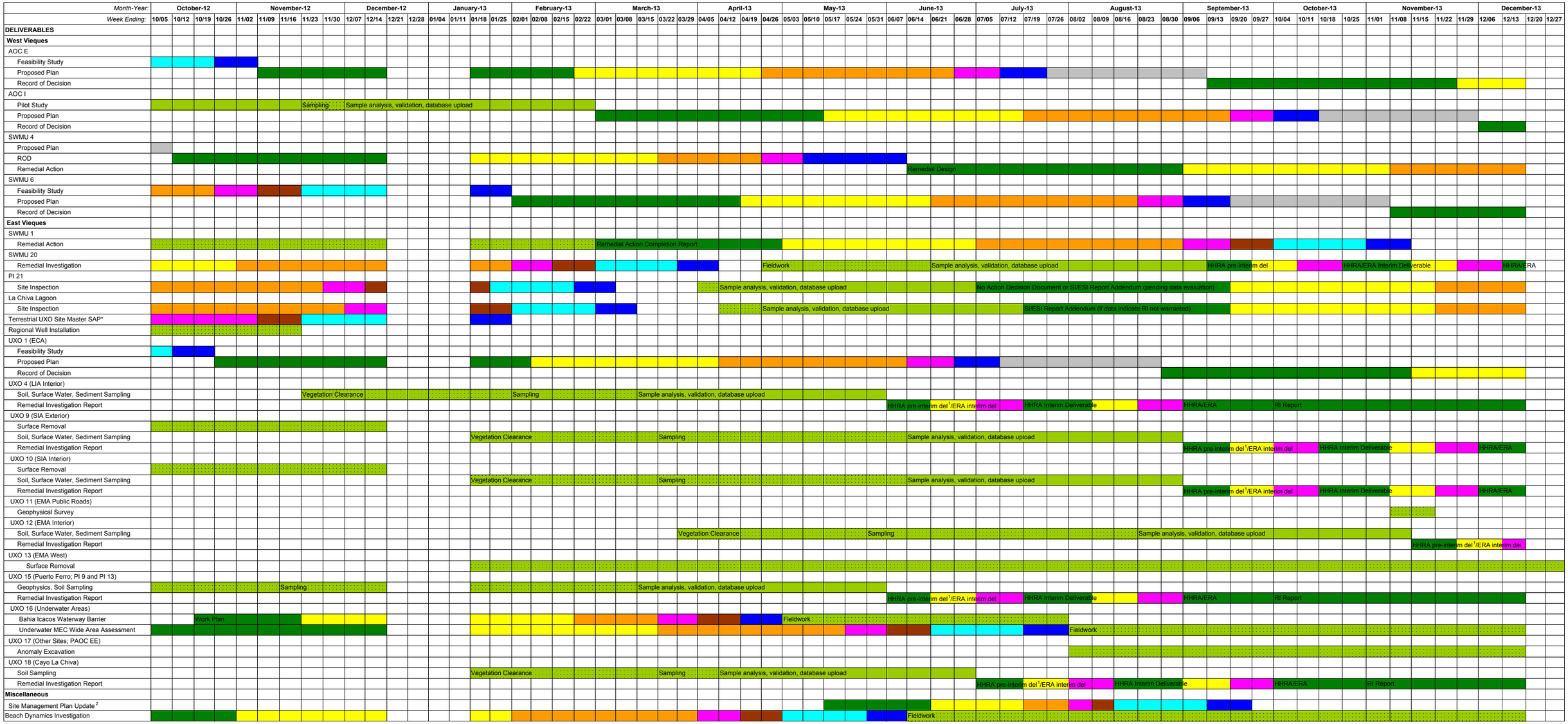
SAP - Sampling and Analysis Plan; SI - Site Inspection; RI - Remedial Investigation, FS - Feasibility Study, ROD - Record of Decision; RD - Remedial Design; RA - Remedial Action

LTM - Long-term Monitoring; O&M - Operation and Maintenance; NTCRA - Non-Time-Critical Removal Action

Table 3-2
Vieques Programmed Funding, In Millions ($)
Site Management Plan, FY 2013
Vieques, Puerto Rico

Fiscal Year	Environmental (52 Sites)	Munitions (18 Sites)	Totals
Through FY12	$27.6	$155.5	**$183.1**
FY13	$0.2	$19.5	**$19.7**
FY14 & Beyond	$0.6	$333.5	**$334.1**
Total Expenditure	**$28.4**	**$508.5**	**$536.9**

FIGURE 3-1
Vieques Munition Response and Enviromental Restoration Program Schedule
Site Management Plan
Former Naval Facility Vieques, Puerto Rico



LEGEND

- Navy Preparation of Draft Document
- Regulator Review
- Regulatory Extension
- Preliminary Responses to Comments
- Comment Resolution (telecon, if needed)
- Draft Final Document Production
- RAB Review
- Public Comment
- Final Document
- Navy Extension
- Field Sampling, Analysis, Validation, Database Upload (dotted to indicate field sampling interval)

Notes:
Draft Final submittals are prepared only after resolution of regulatory agency comments
Final submittals are prepared only after receipt of EPA approval of Draft Final submittals
[1] Pre-interim deliverable comprises ProUCL run (summarized in the associated RAGS Table 3, along with maximum detects where ProUCL is not used), detects/exceedance tables and figures
[2] Draft due June 15 of each year
* Addenda to the Master SAP will be submitted on an as-needed basis prior to UXO site-specific investigations. Submittal dates and corresponding regulatory review times will be addendum-specific and determined at the time each addendum is submitted.

SECTION 4

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Appendix A
Status of Remedial Investigation/ Feasibility Study Sites

Appendix A-1
Environmental Sites

APPENDIX A-1

Status of Remedial Investigation/Feasibility Study Sites in Vieques, Puerto Rico Environmental Sites

Site Designation	Description of Site	Status
East Vieques Sites		
SWMU 1 Camp Garcia Landfill	Camp Garcia Landfill (EMA)	SWMU 1 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submitted in October 2009. The Draft Final SI/ESI Report was submitted in June 2010. The Final SI/ESI Report was submitted August 2010. The site was recommended for a Streamlined RI/FS which was completed and the Final RI/FS Report was issued in April 2011. The Proposed Plan, which recommended enhanced native soil cover and institutional controls as the remedial alternative, was provided for public comment in July 2011. The Record of Decision for this site was signed in September 2011. A Final Remedial Action Implementation, Operations and Maintenance, Land Use Control, and Long-Term Monitoring Work Plan has been issued for SWMU 1 (CH2M HILL July 2012). Remedial Action implementation is currently scheduled to begin in August 2012 at the site.
SWMU 20 (PI 4)	Interviews and records indicate location of former helicopter maintenance area, barracks, and a mess hall. Observed several large segments of concrete culverts/pipes and concrete foundation slabs with a septic vault box to the south of the concrete slabs. Observed two large, rectangular, bermed areas formerly used for fuel bladder storage (from interviews). No evidence of munitions, hazardous waste, hazardous material, or petroleum disposal was observed (NAVFACENGCOM, 2003)	SWMU 20 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI. The ESI field investigation was completed in May 2009. A Final SI/ESI Report was submitted in August 2010. A Final Supplemental ESI and Pilot Study Sampling and Analysis Plan was submitted in September 2011. Supplemental ESI field work was completed in November 2011. The Supplemental ESI determined that the extent of TCE in groundwater should be delineated so an RI SAP is currently being developed and is scheduled it be submitted for regulatory review in August 2012.

Site Designation	Description of Site	Status
West Vieques Sites SWMU 6 Mangrove Disposal Site (West Vieques-DOI)	Disposal of trash (lubricants, oils, solvents, and paint) ~1965-1980	Final RI Report submitted in February 2007. Final Removal Action Work Plan submitted February 2008. Waste characterization sampling performed in February 2008. Waste characterization risk assessments completed. Removal Action was completed in June 2009. A Final Construction Completion Report was submitted in March 2010. Because the site conditions have changed due to the removal action (i.e. creation of lagoon from previous terrestrial setting), supplemental post-removal confirmatory surface water and sediment sampling was conducted in February 2011 in accordance with a December 2010 SAP. Based on preliminary evaluation of the surface water and sediment data, biota sampling was done in February 2012 in the SWMU 6 lagoon. A Draft Feasibility Study with Post Removal ERA and HHRA risk assessments was submitted for regulatory review in June 2012.
SWMU 7 Quebrada Disposal Site (West Vieques-MOV)	Disposal of trash (lubricants, oils, solvents, and paint) ~1965-1980	Final RI Report submitted in March 2008. Final Removal Action Work Plan submitted February 2008. Waste characterization sampling performed in February 2008. Waste characterization risk assessments were completed and a removal action was conducted in the first calendar quarter of 2009. A Final Construction Completion Report was submitted in March 2010. Based on post-removal confirmatory human health and ecological risk assessments, the site was proposed for No Further Action in a Proposed Plan issued to the public in July 2011. A No Further Action Record of Decision for this site was signed in September 2011.
AOC E Former Waste Oil UST at Bldg. 2016 (West Vieques-MOV)	Waste oil UST - contaminated soil found during removal of UST	Final RI Report submitted to RAB in July 2008. A Final Pilot Study SAP for treating soil and groundwater was submitted in February 2010. The pilot study was implemented between January 2010 and December 2011. Based on the pilot study results, a draft Focused FS was submitted for regulatory review in April 2012.
AOC H Abandoned Power Plant (West Vieques-MOV)	Operated 1941-1943; AST; used for Fire Fighter training ~1960s-1980s	Final RI Report submitted July 2007. Proposed Plan for NFA issued for public comment in January 2008. Final NFA ROD issued in September 2008.
AOC I Asphalt Plant (West Vieques-MOV)	Former AST storage area stained with asphalt emulsion.	Final RI Report submitted in June 2008. A Final Pilot Study SAP for treating groundwater was submitted in February 2010. Pilot study began in January 2010 and the field work is expected to be completed in November 2012.
AOC J Former Operations/Staging Area Disposal Site (West Vieques-DOI)	Solid and potentially hazardous waste disposal site ~1965-1973	Final RI Report submitted in May 2007. Final Removal Action Work Plan submitted February 2008. Waste characterization sampling performed in February 2008. Waste characterization risk assessments were completed and a removal action was conducted in the 1st calendar quarter of 2009. A Final Construction Completion Report was submitted in March 2010. Based on post-removal confirmatory human health and ecological risk assessments, the site was proposed for No Further Action in a Proposed Plan issued to the public in July 2011. A No Further Action Record of Decision for this site was signed in September 2011.

Site Designation	Description of Site	Status
AOC R Former Staging and Operations Area (West Vieques-MOV)	Construction staging and Public Works operations; AST; vehicle maintenance ~1965-1971	Final Removal Action Work Plan submitted February 2008. Waste characterization sampling performed in February 2008. Waste characterization risk assessments were completed and a removal action was conducted in the 1st calendar quarter of 2009. Supplemental RI field work was completed in August 2009. A Final Construction Completion Report was submitted in March 2010. The Final RI Report was submitted in February 2011, which concluded the post-removal site conditions pose no unacceptable human health or ecological risks. Therefore, the site was proposed for No Further Action in a Proposed Plan issued to the public in July 2011. A No Further Action Record of Decision for this site was signed in September 2011.

Appendix A-2
Munitions Response Sites

APPENDIX A-2

Status of Remedial Investigation/Feasibility Study Sites in Vieques, Puerto Rico Munitions Response Sites

MRS/Site Designation	Operational Area	Sites Within MRS	Description of Site	Status
East Vieques Sites				
UXO-1 Eastern Conservation Area	ECA		Adjacent to LIA bombing range. Bombing prohibited since the 1970s. the TCRA identified approximately 1300 MEC items that were surface cleared from UXO 1.	A TCRA was completed to remove surface munitions from the site. A NTCRA was completed in February 2011 which removed subsurface munitions from roads and beaches. A Final Remedial Investigation Sampling and Analysis Plan was submitted in January 2011 and field work was completed in February 2011. Currently, a Draft Final RI Report was submitted in June 2012. Additionally, a Draft FS was submitted in March 2012 for regulatory review.
UXO 2 LIA Beaches	LIA		The LIA was established in 1964; since 1974 over 150,000 rounds and 4,700 tons of Naval gunfire; over 40,000 rounds (10,000 tons) of ATG bombing. The TCRA identified 1,090 surface MEC items at UXO 2 that were removed .	A TCRA was completed to remove surface munitions from the site. A NTCRA is underway to remove subsurface munitions from beaches. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 3 LIA Roads	LIA		The LIA was established in 1964; since 1974 over 150,000 rounds and 4,700 tons of Naval gunfire; over 40,000 rounds (10,000 tons) of ATG bombing. The TCRA identified approximately 4,800 surface MEC items at UXO 3 that were removed.	A TCRA was completed to remove surface munitions from the site. A NTCRA is underway to remove subsurface munitions from UXO 3. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 4 LIA Interior	LIA	OB/OD Site (SWMU 3)	The LIA was established in 1964; since 1974 over 150,000 rounds and 4,700 tons of Naval gunfire; over 40,000 rounds (10,000 tons) of ATG bombing. A TCRA identified 82,800 MEC items at UXO 4 that were removed.	A TCRA was initiated to remove surface munitions from the site. Approximately 68 acres of a densely vegetated area containing a high The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 5 SIA Restricted Roads	SIA		The SIA was established in the 1950s when Marine artillery targets were constructed for Marine artillery fire from the SIA and EMA During 1969, additional targets were established for inert bombing and straffing runs. As of May 2010 the NTCRA identified 15 MEC items within UXO5 that were removed.	A NTCRA is underway to remove surface munitions from the SIA A second NTCRA is underway to remove subsurface munitions from UXO 5. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.

MRS/Site Designation	Operational Area	Sites Within MRS	Description of Site	Status
UXO 6 EMA/SIA Public Roads	EMA		The SIA was established in the 1950s when Marine artillery targets were constructed for Marine artillery fire from the SIA and EMA During 1969, additional targets were established for inert bombing and straffing runs.	A NTCRA is underway to remove surface munitions from the SIA A second NTCRA is underway to remove subsurface munitions from UXO 6. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 7 EMA/SIA North Beaches	EMA/ SIA		The SIA was established in the 1950s when Marine artillery targets were constructed for Marine artillery fire from the SIA and EMA During 1969, additional targets were established for inert bombing and straffing runs.	A NTCRA is underway to remove surface munitions from the SIA A second NTCRA is underway to remove subsurface munitions from UXO 7. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 8 SIA South Beaches	SIA		The SIA was established in the 1950s when Marine artillery targets were constructed for Marine artillery fire from the SIA and EMA During 1969, additional targets were established for inert bombing and straffing runs.	A NTCRA is underway to remove surface munitions from the SIA A second NTCRA is underway to remove subsurface munitions from UXO 8. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 9 SIA Exterior	SIA	OP-5, OP-12, OP-13, PI-1, PI-22, G-21	The SIA was established in the 1950s when Marine artillery targets were constructed for Marine artillery fire from the SIA and EMA During 1969, additional targets were established for inert bombing and straffing runs. Through May 2010 approximately 7,400 MEC items have been surface cleared from the SIA as part of the NTCRA.	A NTCRA is underway to remove surface munitions from UXO 9. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 10 SIA Interior	SIA	OP-1, PAOC Y, SWMU 11	The SIA was established in the 1950s when Marine artillery targets were constructed for Marine artillery fire from the SIA and EMA During 1969, additional targets were established for inert bombing and straffing runs. Through May 2010 approximately 7,400 MEC items have been surface cleared from the SIA as part of the NTCRA.	A NTCRA is underway to remove surface munitions from UXO 10. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.

MRS/Site Designation	Operational Area	Sites Within MRS	Description of Site	Status
UXO 11 EMA Public Roads	EMA		Marine artillery gun positions were constructed in the EMA since the 1950s to direct artillery fire towards the targets in the SIA. The ERA/SI identified 4 MD items and 4 MPPEH items at UXO 11.	A NTCRA is underway to remove subsurface munitions, if any are identified, and metal debris from UXO 11. The ERA/SI recommended that an RI/FS be conducted at UXO 11. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 12 EMA Interior	EMA	G-1 through G-5, G-10 through G-19, G-22, G-25, G-26, G-28 through G-32, G-34, G-35, GP-7, GP-9, PI-2, PI-3, PI-15, PI-16, PI-18, PI-19, OP-7, OP-10, OP-11, PAOC- Z, Range 8		Marine artillery gun positions were constructed in the EMA since the 1950s to direct artillery fire towards the targets in the SIA. The ERA/SI identified 244 MEC items within UXO 12, primarily along the western border of the site. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 13 EMA West	EMA	Ranges 1 through 6, Range 9, G-7 through G-9, G-23, G-27, PI-23		During 1966, six ranges were established in the MRS and used for the firing of small arms, grenades, rockets. These ranges were deactivated in 1999 The ERA/SI identified 116 MEC items within UXO 13. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 14 EMA South	EMA	G-33		Range 10 was located within UXO 14 and was used for frontal assaults using M-1, M-14 rifles; M-2 carbines, Browning Automatic 13 rifles, service pistols, and 45 caliber machine guns. Demolition charges up to ¼ pound were detonated to simulate combat. The ERA/SI identified 4 MPPEH items and 18 MD items in UXO 14. The ERA/SI recommended that an investigation should be conducted at UXO 14 to assess human health and ecological risk. The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
UXO 16 Underwater Areas				Previous studies identified MEC and numerous metallic anomalies on the sea floor at Bahia Salina del Sur and Bahia Icacos areas, which are adjacent to the former LIA. The ESA/SI Report recommends additional investigations to further characterize the nature and extent of underwater MEC.

MRS/Site Designation	Operational Area	Sites Within MRS	Description of Site	Status
UXO 18 CayoLa Chiva	EMA		A site inspection of the island adjacent to Blue Beach, a public beach, identified five 5" rocket munitions items.	The Draft Master SAP, submitted for regulatory review in April 2012, describes the planned RI to be completed at the site.
West Vieques Sites				
West Vieques UXO 1 SWMU 4 Inactive OB/Waste Explosive Detonation Range (West Vieques- DOI Property)	West Vieques	NA	An open burn/open detonation area where there was thermal destruction of unserviceable munitions from approximately 1965-1980. NA	An open burn/open detonation area where there was thermal destruction of unserviceable munitions from approximately 1965-1980. The NTCRA to clear the subsurface MEC from the roads and beaches identified 266 MEC items. Final EE/CA NTCRA for subsurface removal of roads and beaches (East and West Vieques) has been initiated. See SWMU 4 in Appendix A-1 for a summary of the RI/FS process and status. Final RI Work Plan submitted (CH2M HILL, January 2007). RI field investigation implemented in 2nd fiscal quarter 2007. Final Addendum 1 to the 2007 Work Plan submitted (April 2008). Supplemental RI field investigation implemented in 3rd fiscal quarter 2008. Data were evaluated and determined to be sufficient for delineating nature and extent of contamination and assessing potential risks. A Draft RI Report combining munitions and environmental studies was submitted in August 2009. The Final RI/FS Report was submitted in May 2012. The Draft PRAP was submitted in April 2012 and the Draft ROD was submitted in May 2012.

Appendix B
Site Screening Areas

Appendix B-1
Environmental Sites

APPENDIX B-1
Site Screening Areas—Environmental Sites
East Vieques, Puerto Rico

Site Designation	Description of Site	Status
SWMU 2	Fuels Off-Loading Site	SWMU 2 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Draft Final SI/ESI Report was submitted June 2010. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
SWMU 4	Waste Areas of Building 303 (Camp Garcia), including: – Spent Battery Accumulation Area – Catch Basin for Hydraulic Oil – Cleaning/Degreasing Basin – Rags, absorbent and grease storage area	SWMU 4 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for NFA, pending a regional groundwater evaluation at Camp Garcia. The regional monitoring wells were installed and groundwater samples collected during the ESI field investigation completed in May 2009. A Final SI/ESI Report was submitted in August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
SWMU 5	Spent Battery Accumulation Area located at Observation Post 1 (OP-1)	SWMU 5 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for no action. The Final No Action Decision Document was submitted in January 2009.
SWMU 6	Waste Oil and Paint Accumulation Area (Seabees Area at Camp Garcia). To include any releases from the adjacent Lubricating Oil Storage Area	SWMU 6 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
SWMU 7	Waste Oil Accumulation Area (outside Building 303 at Camp Garcia)	SWMU 7 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submitted in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
SWMU 8	Waste Oil Accumulation Area (Inner Range at OP-1)	SWMU 8 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for NFA. The Final No Action Decision Document was submitted in January 2009.

Site Designation	Description of Site	Status
SWMU 10	Sewage Treatment Lagoons (Camp Garcia)	SWMU 10 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
SWMU 12	Solid Waste Collection Unit Area (OP-1)	SWMU 12 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for NFA. The Final No Action Decision Document was submitted in January 2009.
AOC A	Diesel Fuel Fill Pipe Area (OP-1)	AOC A is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI, including soil removal. The ESI field work was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no further action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
AOC F	Rock Quarry (Camp Garcia)	AOC F is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for NFA. The Final No Action Decision Document was submitted in January 2009.
AOC G	Pump Station and Chlorination Building at Sewage Lagoons (Camp Garcia)	AOC G is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PAOC I	Building 401, interviews and records indicate former power plant and mechanics shop northeast of Bldg. 303 at Camp Garcia (structure still exists). No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PAOC J	Interviews and records indicate former vehicle maintenance area at Camp Garcia immediately north of the main road (all structures were demolished prior to 1980). Interviewees not aware of any hazardous waste or hazardous material releases at site; no evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed during site inspection (NAVFACENGCOM, 2003).	PAOC J is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for NFA, pending a regional groundwater evaluation at Camp Garcia. The regional monitoring wells were installed and groundwater samples collected during the ESI field investigation completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.

Site Designation	Description of Site	Status
PAOC K	Interviews and records indicate former wash rack area north of main road (structure demolished prior to 1980). No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed (NAVFACENGCOM, 2003).	PAOC K is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site is recommended for NFA, pending a regional groundwater evaluation at Camp Garcia. The regional monitoring wells were installed and groundwater samples collected during the ESI field investigation completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PAOC L	Interviews and records indicate former paint and transformer storage area (structure still exists). Interviewees not aware of any hazardous waste or hazardous material releases at site; no evidence of PCB, hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed during site inspection (NAVFACENGCOM, 2003).	PAOC L is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no further action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PAOC M	Interviews and records indicate former dispatch office, fuel facility, and sleeping quarters (Building 4503, demolished 1991). No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PAOC N	Records indicate former fuel farm and filling station (demolished 1992). Interviews indicate that this area is the current location of the Camp Garcia refueling station. Interviews also indicate no releases occurred at this facility. No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed during the site inspection (NAVFACENGCOM, 2003).	PAOC N is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for NFA, pending an ESI geophysical survey to confirm no underground fuel pipeline is present. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PAOC O	Interviews and records indicate former boiler room in the heat plant building (Building 238 Camp Garcia (CG), demolished 1989). No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PAOC P	Interviews and records indicate former water treatment facility pump house (Building 500CG, demolished 1989). No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no further action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.

Site Designation	Description of Site	Status
PAOC Q/R	Interviews and records indicate PAOC Q is a former boiler house in heat plant building (Building 607, demolished 1984). No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed (NAVFACENGCOM, 2003). Interviews and records indicate PAOC R is a former boiler house in heat plant building (Building 617, demolished 1984). The former location of this building is unknown, but is suspected to be near PAOC Q based on historical aerial photographs.	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. Additional soil sampling was recommended and was accomplished at the site in August 2010. Upon completion of sampling a Final SI/ESI Addendum Report was submitted in June 2011 which recommended the site for no action. Additionally the site is included in a Final No Action/No Further Action document submitted in September 2011.
PAOC S	Records indicate former above ground POL pipeline (demolished 1984). An additional area was added to this site, referred to as the power plant. Interviews also indicate no releases occurred at this facility. No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed during the site inspection (NAVFACENGCOM, 2003).	PAOC S is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The POL pipeline portion of PAOC S requires NFA. The power plant portion of the site was recommended for NFA, pending an ESI geophysical survey to confirm no underground fuel pipeline is present. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PAOC T	Interviews and records indicate former public works grounds contractor storage shed (Building 305, demolished 1991). No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site warranted NFA. The Final No Action Decision Document was submitted in January 2009.
PAOC U	NEW PAOC – Vehicle Maintenance area just north of Building 303 at Camp Garcia. Current and historic storage of hazardous waste, hazardous material, and petroleum products. Some staining of soil outside of building near container storage pallets (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site warranted NFA. The Final No Action Decision Document was submitted in January 2009.
PAOC V	NEW PAOC – Interviews indicate storage of leaking transformer, possible PCB contamination Two soil samples collected, one constituent detected which was below screening criteria (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site warranted NFA. The Final No Action Decision Document was submitted in January 2009.
PAOC W	NEW PAOC – Observed area of pooled, discolored water adjacent to the main road from Camp Garcia to PI-21. No evidence of hazardous waste, hazardous material, petroleum, or munitions storage or disposal was observed. Site Interviewees had no knowledge of past activity (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site warranted NFA. The Final No Action Decision Document was submitted in January 2009.
PAOC X	NEW PAOC – Quebrada (intermittent stream channel) located north from the main road and west from Camp Garcia, adjacent to the former vehicle maintenance area. Observed an automobile body, tires, scrap metal, and construction-related solid waste and debris (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI, including debris removal. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no further action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.

Site Designation	Description of Site	Status
PI 5	Surface water drainage from the runway area; interviews and records indicate historically the location of the fire department and temporary tents; beach matting was installed in the area in the past. No evidence of munitions, hazardous waste, hazardous material, or petroleum storage or disposal was observed (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PI 6	Interviews and records indicate ASTs and facilities associated with the former location of the site drinking water system. Observed the following facilities: – several intact ASTs and one storage tank without ends – a concrete building containing electric pumps – a small vehicle washpad and water well pump house – a ground transformer near the washpad – a concrete pad that could potentially have contained PCB-containing transformers (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in June 2010.
PI 7	Interviews and records indicate southern portion was formerly a quarry and tar disposal area, northern portion was a communications facility. At the south end of the southern portion of the site, drums potentially containing asphalt were observed. Two drums were also observed in the former quarry. No items of concern identified in northern portion of site (NAVFACENGCOM, 2003).	PI 7 is included in the Final PA/SI Report for 12 Consent Order Sites and 8 PI/PAOC Sites submitted in June 2008. The site was recommended for an ESI, including drum removal. The ESI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. Additional soil sampling was recommended and was accomplished at the site in August 2010. Upon completion of sampling a Final SI/ESI Addendum Report was submitted in June 2011 which recommended the site for no action. Additionally the site was included in the Final No Action/No Further Action document submitted in September 2011.
PI 8	Interviews and records indicate former motor pool maintenance area located south of the main road. Past storage and potential storage of hazardous materials and petroleum products. Observed a large area with dark colored/stained soils (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PI 10	Interviews and records indicate site of a possible former sewage-drying lagoon. Observed two rectangular openings in the forest partially surrounded by the remains of low earthen berms. Dark colored soils were observed on portions of the enclosed areas. Evidence of limited solid waste disposal in immediate vicinity (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site would undergo an SI. The SI field investigation was completed in May 2009. A Draft SI/ESI Report was submittal in October 2009. The Final SI/ESI Report was submitted August 2010. The site was recommended for no action and was included in the Final No Action/No Further Action Decision Document that was issued in September 2010.
PI 11	Interviews and records indicate pump house used for the former wastewater treatment system and/or salt water supply system. Observed a diesel engine in a vegetated area adjacent to the station and a stained area immediately under the outfall of an open pipe projecting from the side of the pump house (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site warranted NFA. The Final No Action Decision Document was submitted in January 2009.

Site Designation	Description of Site	Status
PI 20	Interviews and records indicate area used as observation point during landing exercises conducted at PI-21, and potentially used as a quarry in the past. No evidence of prior disposal activities or other contamination observed (NAVFACENGCOM, 2003).	In October 2007, the Environmental Technical Subcommittee concurred the site warranted NFA. The Final No Action Decision Document was submitted in January 2009.
PI 21	Interviews and records indicate that this site was the possible location of a former artillery firing position. Staff observed the remains of small sheet metal structure, with pipes protruding from the embankment. An area of dark colored or stained soil was observed immediately below the outfall of the pipes. The area was used as quarry. ERI 200 aerial photography identified a vertical tank, pits, disturbed ground, pits containing discolored liquid. Three EBS soil samples collected in vicinity of dark colored/ stained soils. (NAVFACENGCOM, 2003).	In February 2012, the Technical Subcommittee concurred that an SI SAP would be produced for the site. In March 2012, the Technical Subcommittee performed a site visit and selected the sampling location. A draft SAP is expected to be submitted in August 2012.

Appendix B-2
Munitions Response Sites

APPENDIX B-2
Site Screening Areas—Munitions Response Sites
East Vieques, Puerto Rico

MRS/ Site Designation	Operational Area	Sites Within MRS	Description of Site	Status
UXO 15 Puerto Ferro	EMA	PI-9 , PI-13	UXO 15 contains an area that was alleged to have been used as an area of ammunitions storage with earthen berms and small OB/OD Also the MRS is described to have ordnance possibly fired from the site toward the LIA/SIA.	The ERA/SI Report recommends a further investigation/Assessment of the debris piles and near shore MD. A Biological Assessment will be completed to assess if significant habitats are present that will need to be preserved during future munitions response actions. A Final ESI SAP was submitted in May 2011 which recommends DGM and soil sampling which is expected to occur in early 2012.A Draft Final SAP Addendum was submitted in June 2012 to provide an investigation approach that will minimize impacts to sensitive vegetation habitats while still meeting the investigation objectives.
East Vieques UXO 17	EMA	PAOC EE, PAOC FF, PI-14	Three aerial photo locations: PI-14, PAOC-EE, and PAOC-FF were suspected to be used as munitions response sites. However, the ERA/SI did not identify any MEC at any of the locations.	The ERA/SI recommended removing the metal debris, one flare and small arms that were identified. An expanded SI was completed in December 2011 and identified two MEC. As a result, an RI will be completed for PAOC EE. The PI 14 and PAOC FF sites were included in a Final No Action Decision Document which was issued in December 2010

Appendix C
DoD Site Prioritization Protocol Scoring

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO1		Eastern Conservation Area
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	sub munitions identified during TCRA
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	area surface cleared, but erosion likely
Table 4 - EHE, Ease of Access Data Element	10	no barrier exists; however, this is the most remote portion of east vieques
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	1	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	turtle nesting area
Total Score	94	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 28 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 29 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO2		LIA Beaches
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	sub munitions identified during TCRA/ Non-TCRA
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	area surface cleared, but erosion likely
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	1	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	turtle nesting area
Total Score	94	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO3		LIA Roads
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	sub munitions identified during TCRA
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	area surface cleared, but erosion likely
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	1	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	94	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO4		LIA Interior
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	sub munitions identified during TCRA
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	area surface cleared, but erosion likely
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	1	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data	5	
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO5		SIA Restricted Roads
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	sub munitions identified during Non-TCRA
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	1	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	94	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO6		EMA/SIA Public Roads
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	MEC projectiles/submunitions identified during Non-TCRA
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO7		EMA/SIA North Beaches
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	MEC projectiles identified during Non-TCRA
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	area surface cleared, but erosion likely
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	turtle nesting
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO8		SIA South Beaches
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	an MEC projectile was identified during the SI
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	area surface cleared, but erosion likely
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	1	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	turtle nesting
Total Score	94	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO9		SIA Exterior
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	sub munitions wre identified in the Non-TCRA
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	1	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	5	
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO10		SIA Interior
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	projectiles identified in Non-TCRA ans sub munitions identified in adjacent UXO-9
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	1	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	94	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO11		EMA Public Roads
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	MEC projectiles were identified along east end during Non-TCRA
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO12		EMA Interior
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	MEC items identified after brush fire included: a 500 pound bomb, a 7-inch Naval gunfire projectile and five, 5-inch rockets
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO13		EMA West
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	grenades were identified during the SI
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO14		EMA South
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	grenades identified during SI
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO15		Puerto Ferro
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	25	no sensitive
Table 2 - EHE, Source of Hazard Data Element	8	ob od and munitions transferred
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	5	lighthouse
Total Score	91	
Table 10 - EHE Rating	B	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**3**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO16		Underwater Areas
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	MEC projectiles identified during SI
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO 17		Camp Garcia
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	15	flares and small arms
Table 2 - EHE, Source of Hazard Data Element	5	other disposal area
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	76	
Table 10 - EHE Rating	C	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**4**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
UXO18 Cayo La Chiva		EMA Interior
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	MEC projectiles were identified in SI
Table 2 - EHE, Source of Hazard Data Element	10	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	3	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	3	
Total Score	96	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	

APPENDIX C
Expanded Range Assessment/Phase I Site Inspection
DoD Site Prioritization Protocol Scoring

Site		**Alias**
SWMU 4		West Vieques OB/OD Site
EHE Module	**Score**	**Comment**
Table 1 - EHE, Munitions Type Data Element	30	
Table 2 - EHE, Source of Hazard Data Element	8	
Table 3 - EHE, Location of Munitions Data Element	25	
Table 4 - EHE, Ease of Access Data Element	10	
Table 5 - EHE, Status of Property Data Element	5	
Table 6 - EHE, Population Density Data Element	1	
Table 7 - EHE, Population Near Hazard Data Element	5	
Table 8 - EHE, Types of Activities/Structures Data Element	5	
Table 9 - EHE, Ecological and/or Cultural Resources Data Element	5	
Total Score	94	
Table 10 - EHE Rating	A	
CHE Module	**Score**	**Comment**
Total Score	N/A	no known or suspected chemical warfare materiel
Table 20 - CHE Rating	N/A	
Table 21 - HHE, Hazard Rating	D	Risks are considered potential for all sites at this point due to lack of environmental data. A rating of "medium" will be used.
Table 22 - MRS Priority	**Priority**	
EHE Module Rating	**2**	
CHE Module Rating	**N/A**	no known or suspected chemical warfare materiel
HHE Module Rating	**5**	