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Final

Preliminary Assessment Report for Per- and Polyfluoroalkyl Substances

Atlantic Fleet Weapons Training Area – Vieques
Former Naval Ammunition Support Detachment and
Former Vieques Naval Training Range
Vieques, Puerto Rico

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Executive Summary

This report summarizes the evaluation, results, conclusions and recommendations of the Preliminary Assessment (PA) conducted for Per- and Polyfluoroalkyl Substances (PFAS) at the former Naval Ammunition Supply Detachment (NASD) and the former Vieques Naval Training Range (VNTR) in Vieques, Puerto Rico, and has been prepared by CH2M HILL, Inc. (CH2M) for the Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC) Atlantic under Comprehensive Long-term Environmental Action—Navy (CLEAN) Contract N62470-16-D-9000, Contract Task Order 0003. The location of Vieques, Former NASD and Former VNTR are shown in **Figures ES-1, ES-2 and ES-3**, respectively.

The objectives of this PA are to:

- Identify and catalog all potential or actual PFAS sources
- Eliminate from further consideration those areas where there is no evidence of a PFAS release or suspected release and document the rationale for their elimination
- Identify areas requiring further PFAS investigation
- Identify receptors and migration pathways (both on and off the facility)
- Determine whether an emergency response action is warranted because of current complete exposure pathways (e.g. on-base or off-base drinking water source within one mile downgradient of potential source area)

The following activities were performed in support of this PA:

- Review of existing data to identify and characterize potential PFAS releases and to identify potential off-facility receptors
- Interviews with relevant site personnel to validate and verify data collected during the data review, and to provide supplemental information
- Site reconnaissance of the facility to identify any evidence of PFAS releases and potential receptors and migration pathways, to identify all PFAS Areas of Concern (AOCs), and to fill data gaps identified in the data review and interviews

There were 56 sites evaluated using these criteria. The following 14 sites were identified as potential PFAS source/release areas and are therefore recommended for further evaluation via a Site Inspection (SI), the rationale and details of which will be included in an SI Sampling and Analysis Plan (SAP):

Former NASD

- AOC H – Former Power Plant/Former Fire Training Area
- Former Fire Station Building 2046 at the Public Works Area
- Potential Former Motor Pool Area
- AOC B – Former Wastewater Treatment Plant
- Solid Waste Management Unit (SWMU) 6 – Former Mangrove Disposal Site
- SWMU 7 – Former Quebrada Disposal Site

Former VNTR

- Potential Former Motor Pool Area (including Building 340) and Former Fire Department Building 330

NOTE: THIS SUMMARY IS PRESENTED IN ENGLISH AND SPANISH FOR THE CONVENIENCE OF THE READER. EVERY EFFORT HAS BEEN MADE FOR THE TRANSLATIONS TO BE AS ACCURATE AS REASONABLY POSSIBLE. HOWEVER, READERS SHOULD BE AWARE THAT THE ENGLISH VERSION OF THE TEXT IS THE OFFICIAL VERSION.

- Potential Area of Concern (PAOC) K – Former Camp Garcia Wash Rack
- SWMU 20 – Former Helicopter Maintenance Area
- Camp Garcia Runway
- PI 5 – Surface Water Drainage Area from Camp Garcia Runway
- SWMU 10 and AOC G – Former Sewage Treatment Lagoons and Chlorination Building
- SWMU 1 – Former Camp Garcia Municipal Solid Waste Management Unit (Landfill)

Site reconnaissance of the sites/areas indicates the potential for exposure to PFAS containing media, if present, is low to non-existent; therefore, a rapid response is not necessary. Groundwater is not used as a source of public drinking water on the island and there are no known private wells used for drinking water purposes. Groundwater withdrawal on Vieques for public potable use (formerly conducted via 14 public water supply wells located in the alluvial coastal plain near Esperanza and potentially 6 water supply wells located in the northwestern portion of Vieques) was discontinued in 1978. Since that time, potable water for the island population has been supplied via a pipeline from the Rio Blanco filtration plant in eastern Puerto Rico. However, if PFAS are detected in groundwater at the SI stage, then efforts to confirm the absence of private drinking water wells will be made within a 4-mile radius of the detected contamination, per Environmental Protection Agency (EPA) PA/SI guidance. The SI will evaluate if there has been a release of PFAS to the environment that may pose a threat to human health and/or the environment. If PFAS are detected during the SI will include a human health risk screening for groundwater, soil, surface water, and/or sediment (as applicable based on media detections). Additionally, if formal, regulatory-based ecological screening values (ESVs) become available for PFAS compounds, the SI will include an ecological risk screening for surface soil, surface water, and/or sediment (as applicable based on media detections).

Resumen Ejecutivo

Este informe resume la evaluación, resultados, conclusiones y recomendaciones de la Evaluación Preliminar (PA, por sus siglas en inglés) que se llevó a cabo para las Sustancias Per y Polifluoroalquiladas (PFAS, por sus siglas en inglés) en el antiguo Destacamento de Apoyo a Municiones Navales (NASD, por sus siglas en inglés) y en el antiguo Campo de Adiestramiento Naval de Vieques (VNTR, por sus siglas en inglés) en Vieques, Puerto Rico. Este informe ha sido preparado por CH2M HILL, Inc. (CH2M) para el Departamento de la Marina (Marina), Comando de Ingeniería de Instalaciones Navales (NAVFAC, por sus siglas en inglés) del Atlántico bajo el Contrato Integral de la Acción Ambiental a Largo Plazo — Contrato Navy (CLEAN) N62470-16-D-9000, Orden de Trabajo de Contrato 0003. La ubicación de Vieques, el antiguo NASD y el antiguo VNTR se muestran en las **Figuras ES-1, ES-2, y ES-3**, respectivamente.

Los objetivos de este PA son:

- Identificar y catalogar todas las fuentes potenciales o reales de PFAS
- Eliminar de las áreas a considerarse aquellas áreas en las que no hay evidencia o sospecha de un escape de PFAS, y documentar la justificación para su eliminación
- Identificar las áreas que requieren una investigación adicional sobre PFAS
- Identificar los receptores y las vías migratorias (tanto dentro como fuera de la instalación)
- Determinar si se justifica una acción de respuesta de emergencia debido a las vías de exposición completas actuales (por ejemplo, el agua potable dentro y fuera de la base dentro de una milla gradiente abajo del área fuente potencial).

Para apoyar este PA, se realizaron las siguientes actividades:

- Revisión de los datos existentes para identificar y caracterizar posibles escapes de PFAS e identificar posibles receptores fuera de las instalaciones
- Entrevistas con el personal relevante del sitio para validar y verificar los datos obtenidos durante la revisión de datos, y para proporcionar información complementaria
- Observación del sitio en la instalación para identificar cualquier evidencia de escapes de PFAS, los posibles receptores y las vías de migración, para identificar todas las Áreas de Preocupación (AOCs, por sus siglas en inglés) de PFAS, y para obtener datos adicionales que se identifiquen durante la revisión de datos y en las entrevistas

Se evaluaron 56 sitios utilizando estos criterios. Los siguientes 14 sitios fueron identificados como posibles áreas fuente/de escape y por lo tanto fueron recomendados para evaluación adicional por medio de una Inspección del Sitio (SI, por sus siglas en inglés), el análisis y los detalles, se incluirán en un Plan de Muestreo y Análisis (SAP, por sus siglas en inglés) del SI:

Antiguo NASD

- AOC H – Antigua Planta Eléctrica/Antigua Área de Adiestramiento Contra Incendios
- Antigua Estación de Bomberos, Edificio 2046, en el Área de Obras Públicas
- Antigua Área Potencial de Estacionamiento de Vehículos Operacionales
- AOC B – Antigua Planta de Tratamiento de Aguas Residuales

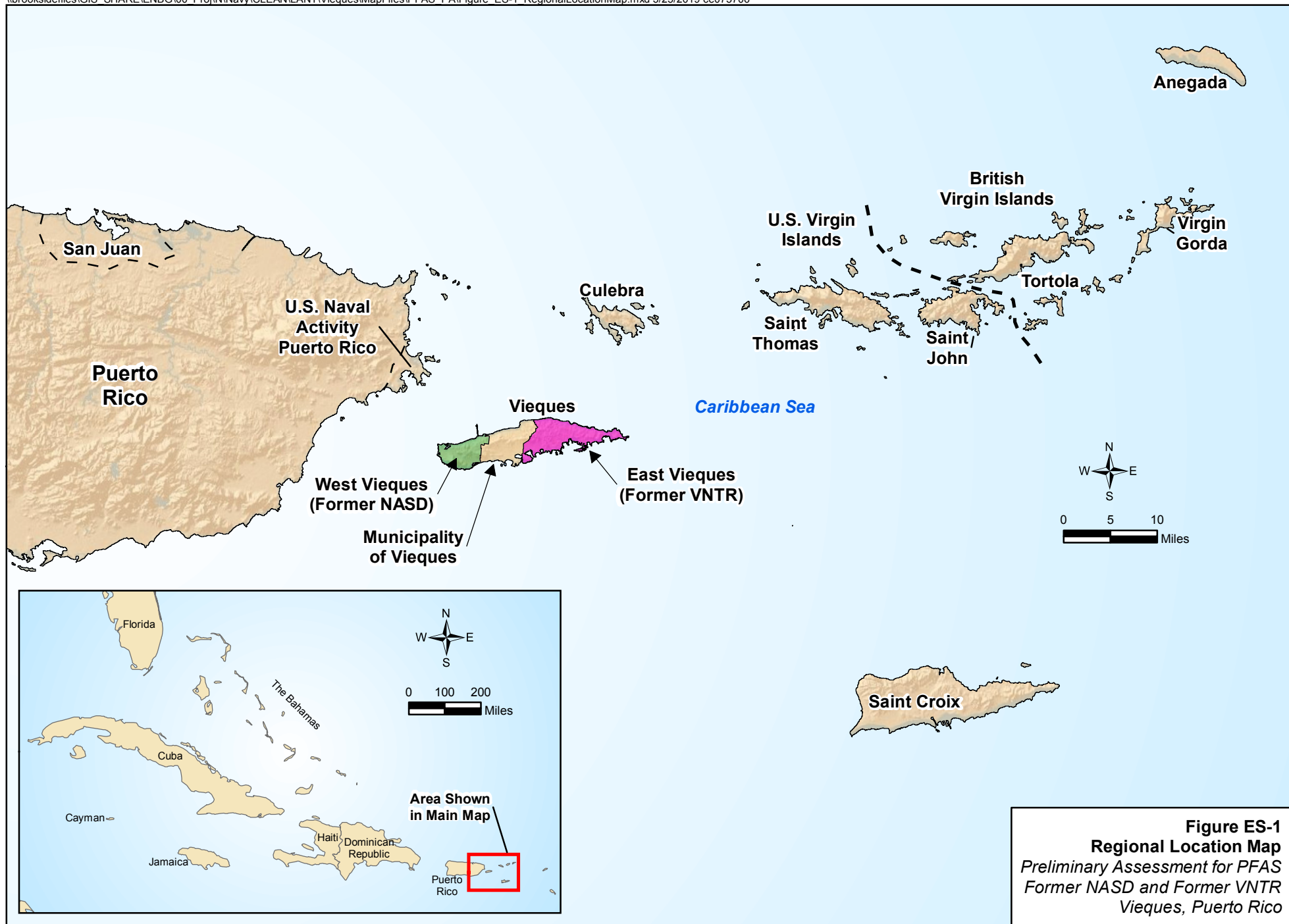
NOTA: ESTE RESUMEN SE PRESENTA EN INGLÉS Y EN ESPAÑOL PARA LA CONVENIENCIA DEL LECTOR. SE HAN HECHO TODOS LOS ESFUERZOS PARA QUE LA TRADUCCIÓN SEA PRECISA EN LO MÁS RAZONABLEMENTE POSIBLE. SIN EMBARGO, LOS LECTORES DEBEN ESTAR AL TANTO QUE EL TEXTO EN INGLÉS ES LA VERSIÓN OFICIAL.

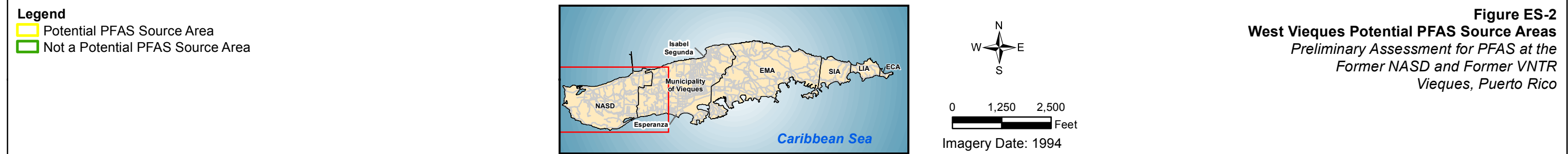
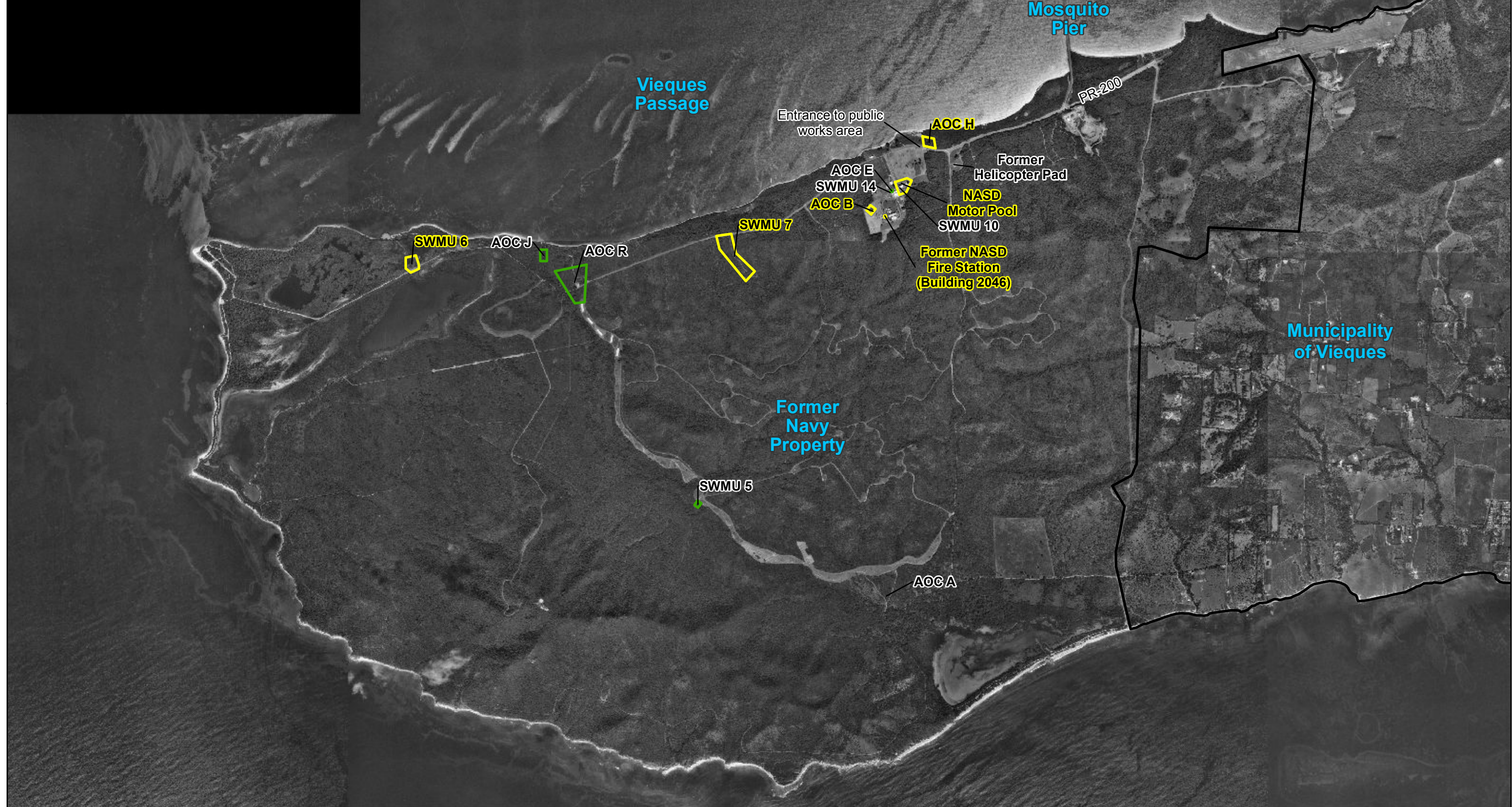
- Unidad de Gestión de Residuos Sólidos (SWMU, por sus siglas en inglés) 6 – Antiguo Sitio de Disposición en el Manglar
- SWMU 7 – Antiguo Sitio de Disposición en la Quebrada

Antiguo VNTR

- Posible Área del Antiguo Estacionamiento de Vehículos Operacionales (incluyendo el edificio 340) y el antiguo Departamento de Bomberos, Edificio 330 Posible
- Área de Preocupación (PAOC, por sus siglas en inglés) K - Antiguo Campo de lavado de autos Garcia Rack
- SWMU 20– Área del antiguo taller de mantenimiento de helicópteros
- Pista del Campo Garcia
- PI 5 – Zona de drenaje de agua superficial de la Pista de la Campo Garcia
- SWMU 10 y AOC G – Antiguas Lagunas de Tratamiento de Aguas Residuales y Edificio de Clorinación
- SWMU 1 – Antiguo Relleno Sanitario Municipal de Gestión de Residuos Sólidos del Campamento García (Relleno Sanitario)

El reconocimiento de los sitios/áreas indica que el potencial de exposición a los medios que contienen PFAS, de estar está presente, es bajo o inexistente; por lo tanto, no es necesaria una respuesta rápida. El agua subterránea no se usa como fuente de agua potable pública en la isla y no se conocen pozos privados que se usen con fines de agua potable. La extracción de agua subterránea en Vieques para uso público de agua potable (anteriormente realizada a través de catorce pozos públicos de suministro de agua ubicados en la llanura costera aluvial cerca de Esperanza y posiblemente 6 pozos de agua de suministro ubicados en la porción noroeste de Vieques) se suspendió en 1978. Desde entonces, el agua potable para la población de la isla se ha suministrado a través de una tubería desde la planta de filtración Rio Blanco en el este de Puerto Rico. Sin embargo, si se detectan PFAS en aguas subterráneas en la etapa del SI, entonces se realizarán esfuerzos para confirmar la ausencia de pozos privados de agua potable dentro de un radio de 4 millas de la contaminación detectada, según las normas de la Agencia de Protección Ambiental de Los Estados Unidos (EPA, por sus siglas en inglés) para el PA/SI. El SI evaluará si a ocurrido alguna liberación de PFAS al medio ambiente que pueda representar una amenaza para la salud humana y/o el medio ambiente. Si se detectan PFAS durante el SI incluirá una evaluación de riesgos para la salud humana para el agua subterránea, suelo, aguas superficiales y/o sedimentos (según corresponda en función de las detecciones en los medios). Además, si los valores formales de detección ecológica (ESV, por sus siglas en inglés) basados en regulaciones están disponibles para los compuestos de PFAS, el SI incluirá una evaluación de riesgo ecológico para el suelo superficial, el agua superficial y/o los sedimentos (según corresponda en función de las detecciones de medios).







Legend
Potential PFAS Source Area
Not a Potential PFAS Source Area

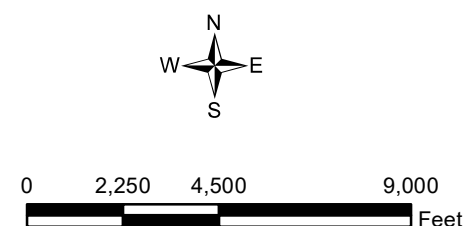


Figure ES-3
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*Preliminary Assessment for PFAS at the
Former NASD and Former VNTR
Vieques, Puerto Rico*

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Acronyms and Abbreviations

AFFF	aqueous film-forming foam
amsl	above mean sea level
AOC	Area of Concern
ASD	Assistant Secretary of Defense
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CH2M	CH2M HILL, Inc.
CLEAN	Comprehensive Long-term Environmental Action—Navy
DASN	Deputy Assistant Secretary of the Navy
DoD	Department of Defense
DoDI	Department of Defense Instruction
DOI	Department of the Interior
EBS	Environmental Baseline Survey
ECA	Eastern Conservation Area
EI&E	Energy, Installations and Environment
EMA	Eastern Maneuver Area
EPA	Environmental Protection Agency
ER,N	Environmental Restoration, Navy
ERA	Ecological Risk Assessment
ESI	Expanded Site Inspection
ESV	ecological screening value
FFA	Federal Facility Agreement
FY	fiscal year
HHRA	human health risk assessment
LIA	Live Impact Area
MCL	maximum contaminant level
MILSPEC	military specification
MOV	Municipality of Vieques
msl	mean sea level
NAPR	Naval Activity Puerto Rico
NASD	Naval Ammunition Support Detachment
NAVFAC	Naval Facilities Engineering Command
Navy	Department of the Navy
NPL	National Priorities List
NSRR	Naval Station Roosevelt Roads
NTCRA	non-time-critical removal action
PA	Preliminary Assessment
PAOC	Potential Area of Concern
PCB	polychlorinated biphenyl
PFAS	per- and polyfluoroalkyl substances
PFBS	perfluorobutane sulfonate
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate

PI	Photo Identified (site)
ppt	parts per trillion
PRASA	Puerto Rico Aqueduct and Sewer Authority
PREQB	Puerto Rico Environmental Quality Board
PWS	public water system
Qa	Quaternary aged soil or sediment deposit or rock
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RfD	reference dose
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SAP	Sample and Analysis Plan
SI	Site Inspection
SIA	Surface Impact Area
SVOC	semivolatile organic compound
SWMU	Solid Waste Management Unit
TAC	Terminal Area Chart
UCMR3	Third Unregulated Contaminant Monitoring Rule
UCMR4	Fourth Unregulated Contaminant Monitoring Rule
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VNTR	Vieques Naval Training Range
VOC	volatile organic compound
WWTP	wastewater treatment plant

Introduction

This Preliminary Assessment (PA) Report for potential sources of per- and polyfluoroalkyl substances (PFAS) at the former Naval Ammunition Support Detachment (NASD) and the former Vieques Naval Training Range (VNTR) in Vieques, Puerto Rico, has been prepared by CH2M HILL, Inc. (CH2M) for the Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC) Atlantic under Comprehensive Long-term Environmental Action—Navy (CLEAN) Contract N62470-16-D-9000, Contract Task Order 0003.

This report identifies locations where PFAS-containing materials may have been released into the environment based on review of historical and other PFAS-related and site-related information, provides an initial assessment of possible migration pathways and receptors of potential contamination, and recommends a path forward. The PA Report is organized as follows:

1. **Introduction** - describes the background, purpose, and organization of the report
2. **Facility Description** - describes the NASD/VNTR facilities and relevant histories
3. **Investigation Summary** - identifies the sources of information used to identify and assess potential PFAS source/release areas
4. **Findings and Recommendations** - presents each potential source/release area along with a description and operational history of PFAS storage, use, or release (as applicable); assesses potential exposure pathways and environmental hazards; and makes recommendations regarding further evaluation
5. **Summary and Conclusions** – summarizes and provides conclusions drawn from the PA findings

1.1 Preliminary Assessment Objectives

This Vieques-specific PA for PFAS is part of a Navy-wide facilities assessment of potential historical sources of PFAS. This PA was conducted in accordance with the United States Environmental Protection Agency's (EPA's) *Guidance for Performing Preliminary Assessments under CERCLA* (PA Guidance) (EPA, 1991) with additional guidance from the Navy's *Interim Per-and Polyfluoroalkyl Substances (PFAS) Site Guidance for NAVFAC Remedial Project Managers (RPMs)/September 2017 Update* (Navy PFAS Guidance) (NAVFAC, 2017). The objectives of the Vieques-specific PA are to:

- Identify and catalog potential or actual PFAS sources/releases
- Eliminate from further consideration those areas where there is no evidence of a PFAS release or suspected release and document the rationale for their elimination
- Identify areas warranting further PFAS investigation
- Identify potential receptors and migration pathways (both on and off the facility)
- Determine whether an emergency response action is warranted because of current complete exposure pathways (e.g., on-base or off-base drinking water source within 1 mile downgradient of potential PFAS source/release area)

To accomplish these objectives, the following activities have been completed:

- A review of available information to identify and characterize potential PFAS sources/releases
- A review of existing information to identify potential off-base receptors within 1 mile of the facility boundary (note that this is less extensive than the study area defined in EPA's PA Guidance but will be expanded if necessary in later project phases if complete pathways beyond 1 mile are identified)
- Interviews conducted with relevant site personnel to validate and verify data collected during the data review, and to provide any supplemental information

- A site reconnaissance of the facility to identify any evidence of PFAS sources/releases and potential receptors and migration pathways, to identify areas of concern, and to fill data gaps identified in the data review and interviews, as applicable
- Identification of any need for initiation of a rapid response drinking water investigation in accordance with Deputy Assistant Secretary of the Navy (DASN) June 2016 policy (Navy, 2016) (see Section 1.4.4)

1.2 PFAS Background

PFAS have been identified by the United States Department of Defense (DoD) and EPA as “emerging contaminants¹.” PFAS are anthropogenic (i.e., human-made) compounds of environmental concern because of their persistence in the environment and in organisms, their migration potential in aqueous systems (e.g., groundwater), their historically widespread use in commercial products, and their possible health effects at low levels of exposure.

1.2.1 General Uses of PFAS

The chemical properties of PFAS make them useful for many commercial products because they are heat resistant and can repel oil, grease, and water. PFAS have been manufactured for use in a wide variety of products including firefighting foam, non-stick cookware, fiber and fabric stain protection, food packaging, and personal care products. The pervasive use of PFAS in commercial and industrial products has led to the discovery of PFAS in soil, air, and groundwater worldwide.

1.2.2 Key PFAS Sources at Naval Installations

PFAS have been used in a variety of military applications, including as a component of aqueous film-forming foam (AFFF), which was routinely used at fire-fighting training areas and firefighting equipment test areas. In addition, current and historical AFFF storage and transfer areas are of potential concern for release to the environment. As such, identification of areas where AFFF was released to the environment, either as repeated small releases or as a significant one-time release, is key to determining potential PFAS impacts on environmental media.

AFFF used in firefighting, firefighting training/demonstration areas, and fire suppression systems is considered to have the greatest potential for release of PFAS to the environment in terms of mass/concentration at Navy installations. These include potential sources such as current and former fire training areas, equipment test and cleanout areas, buildings with firefighting infrastructure (e.g., hangars, AFFF storage/handling areas, pump houses, etc.), unplanned release areas (e.g., crash sites), preemptory releases (e.g. foaming a runway prior to an emergency landing to prevent fires) and fire suppression systems located at fuel storage area(s). While foaming of runways was an aviation safety practice that may have been performed at various Navy facilities, there is no report of such use on Vieques and, in general, the Navy kept records of when this was performed (i.e., coincident with an emergency landing or crash) and no such records were found for Vieques. A fire and rescue demonstration was performed by the crash crew at the Garcia airfield in 1967, 2 years before the military specification (MILSPEC) specifying use of PFAS in AFFF was issued and there were no reports of its use during the demonstration. In fact, if foam had been used in the demonstration, it would almost surely have been protein foam. Therefore, this activity was unlikely to be a source of a PFAS release. Nonetheless, given that PFAS-containing AFFF was developed in the 1960s, to address the potential that the 1967 demonstration could have

¹ Per Department of Defense Instruction (DoDI) 4715.18: “As identified by the ASD (EI&E), an emerging contaminant is a contaminant that:

- Has a reasonably possible pathway to enter the environment;
- Presents a potential unacceptable human health or environmental risk; and
- Does not have regulatory standards based on peer-reviewed science, or the regulatory standards are evolving due to new science, detection capabilities, or pathways.”

utilized PFAS-containing AFFF, the Garcia airfield is recommended for investigation via a Site Inspection (SI), as discussed in Section 4.

Other potential sources of PFAS to the environment include operations wastes (e.g., from chromium electroplating), historical onsite land disposal areas/landfills of PFAS-containing materials, wastewater treatment sludges and effluents, etc. Another potential source of PFAS is aircraft hydraulic fluid. Some aviation hydraulic fluids contain PFAS or PFAS precursors as an additive to reduce corrosion of aircraft parts, at concentrations less than 1 percent. However, aircraft hydraulic fluids are used in enclosed systems, so their release to the environment is unlikely unless there was an accident involving damage to aircraft (e.g., crash) or incident during aircraft maintenance or hydraulic fluid storage. Most aircraft associated with Vieques were maintained at Naval Station Roosevelt Roads (N SSR), now referred to as Naval Activity Puerto Rico (NAPR), and no crashes or maintenance/storage incidents involving hydraulic fluids reportedly occurred on Vieques. However, areas where waste hydraulic fluids may have been disposed (i.e., Camp Garcia landfill and various dumps) have been recommended for further investigation via an SI, as discussed in Section 4. Of note, not all of the aforementioned potential sources necessarily existed on Vieques, and the Navy kept records of such releases if and when they occurred on other installations.

AFFF in Firefighting Training and Fire Suppression

AFFF containing PFAS was developed in the 1960s for use on Class B fires (i.e., fires in flammable liquids or vapors), and was put into routine use by the early 1970s. In November 1969, a MILSPEC was issued that described characteristics AFFF needed to demonstrate in order to be used by the military, including a requirement for formulations containing PFAS. As such, most AFFF used at military installations after the 1970s likely included some combination of PFAS.

Typically, AFFF concentrate was proportionally mixed into water lines using in-line eductors or other proportioning devices to create the necessary foam solution ranging from 3% to 6% of the concentrate. Class A firefighting foams were used to extinguish wood and grass fires, and do not contain PFAS. Therefore, Class A firefighting foams are not a concern for PFAS or this PA.

Electroplating

Electroplating, specifically hard chromium plating, is an industrial activity where PFAS-containing mist suppressants may have been used. Electroplating consists of creating an electrolytic cell that enables a thin layer of metal to be deposited onto an electrically conductive metal surface. PFAS were sometimes used during the chromium electroplating process as a surfactant in chromic acid baths. As a surfactant, PFAS lowered the surface tension (adhesion of materials) by creating a thin, foamy layer on the surface of the chrome bath for mist-suppression. This mist-suppressant reduced the formation of airborne chromium aerosols during the plating process, which are known to be carcinogenic and allergenic. Areas where non-chromium (i.e., copper, nickel, and tin) electroplating operations were carried out would not be expected to have used PFAS-containing mist suppressants.

Landfill Operations, Waste Disposal Areas, and Wastewater Treatment Plants

Historically, landfills received wastes generated from military installations, including waste streams from operational areas (machine shops, electroplating operations, etc.), housing areas, and waste from wastewater treatment plants (WWTPs) and/or homeported ships. These waste streams may contain industrial and/or consumer products that were either manufactured with PFAS or contain PFAS constituents which may leach out of the landfill. Additionally, waste material biosolids and sludge from WWTPs can contain PFAS.

Other Potential Sources

Due to the widespread use of PFAS, there may be sources other than the ones mentioned previously where PFAS may have been present. For example, PFAS have been included in some anti-fouling and stain-resistant paint formulations, as well as food packaging and commercial and household products such as non-stick products, polishes, waxes, and cleaning products. It is possible that in significant amounts, these could be sources of PFAS to the environment.

1.2.3 PFAS in the Environment

PFAS are a class of anthropogenic (i.e., human-made) compounds characterized by carbon chains of varying lengths containing carbon-fluorine bonds. The strong electronegative force of the carbon-fluorine bond requires a large amount of energy to break, which makes PFAS extremely resistant to biodegradation, photo-oxidation, direct photolysis, and hydrolysis. In addition to their environmental persistence, PFAS are readily soluble in aqueous solution and therefore have potential for migration from soil to groundwater and then with groundwater flow. Due to their persistence and mobility, releases of PFAS to the environment present a unique set of challenges and concerns.

1.2.4 PFAS Health Effects

There is a growing body of evidence of animal studies and human epidemiology studies indicating the relationship between human health effects and exposure to PFAS (Rappazzo et. al., 2017). However, additional research is needed to more clearly understand the potential health effects that may be caused by exposure to PFAS compounds. To date there is limited information on only a few of the thousands of PFAS compounds. In addition, there are no Tier 1 toxicity values for any PFAS. Tier 1 toxicity values are the preferred source for toxicity factors used in Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA) human health risk assessments.

The EPA's Superfund Health Risk Technical Support Center has estimated a Tier 2 non-carcinogenic toxicity value for perfluorobutane sulfonate (PFBS) (EPA, 2014). The oral reference dose (RfD) is based on kidney effects observed in female rats. Due to a lack of information in the current literature, toxicity values for inhalation exposure and cancer endpoints has not been estimated for PFBS.

The EPA Office of Water developed a reference dose (RfD, the daily dose below which adverse health effects are deemed unlikely over a lifetime) for perfluorooctanoic acid (PFOA) based on a developmental toxicity study using mice. The critical effects included reduced ossification in parts of the hand/feet and accelerated puberty in male pups following exposure during gestation and lactation (EPA, 2016a). The EPA Office of Water also determined that PFOA should be classified as "suggestive evidence of carcinogenic potential" and estimated an oral cancer slope factor based on tumor development in rat testes.

The EPA Office of Water estimated an RfD for perfluorooctane sulfonate (PFOS) based on a developmental toxicity study in rats; the critical effect was decreased pup body weight following exposure during gestation and lactation (EPA, 2016b).

PFOA and PFOS are known to be transmitted to the fetus in cord blood and to the newborn in breast milk. Because the developing fetus and newborn seem particularly sensitive to PFOA- and PFOS-induced toxicity, the RfDs based on developmental effects also are considered by toxicologists and risk assessors to be protective of adverse health effects in adults. Additionally, the RfD for PFOA is protective of carcinogenic effects.

1.3 Regulatory Background and History

1.3.1 PFOA Stewardship Program

In 2006, EPA initiated the 2010/2015 PFOA Stewardship Program in which eight major companies in the United States committed to reduce facility emissions and product contents of PFOA and related chemicals on a global basis by 95% no later than 2010, and to work toward eliminating emissions and product content of these chemicals by 2015. All companies have met the program goals. To meet the program goals, most companies stopped the manufacture and import of long-chained PFAS, and then transitioned to alternative chemicals. On January 21, 2015, EPA proposed a Significant New Use Rule under the Toxic Substances Control Act to require manufacturers (including importers) of PFOA and PFOA-related chemicals to notify EPA at least 90 days before starting or resuming new uses of these chemicals in any process.

1.3.2 Unregulated Contaminant Monitoring Rule

The EPA issued the Third Unregulated Contaminant Monitoring Rule (UCMR3)² in May 2012. The UCMR3 required monitoring, between 2013 and 2015, for 30 substances at all large public water systems (PWSs) serving more than 10,000 people and 800 representative PWSs serving 10,000 or fewer people. Six PFAS compounds were included in the UCMR3 contaminant list. Of these six PFAS, EPA issued health advisory levels for only two, PFOA and PFOS. The UCMR3 results found these two chemicals were present in less than 1% of the nearly 5,000 public water systems sampled per UCMR3.

In December 2016, EPA issued the Fourth Unregulated Contaminant Monitoring Rule (UCMR4). UCMR4 requires all large PWSs serving more than 10,000 people and 800 representative PWSs serving 10,000 or fewer people to sample for 30 chemicals between 2018 and 2020. There are no PFAS included on the UCMR4 list of contaminants that require sampling and analysis.

1.3.3 EPA Lifetime Health Advisories

In May 2016 the EPA Office of Water issued a drinking water Lifetime Health Advisory for PFOA and PFOS. Health advisories are not enforceable, regulatory levels; rather they are levels that would provide Americans, including sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water. The health advisory is 70 parts per trillion (ppt) for PFOA and 70 ppt for PFOS. When both PFOA and PFOS are found in drinking water, the combined concentrations of PFOA and PFOS should be compared with the 70 ppt health advisory level.

1.3.4 EPA Action Plan Summary

In February 2019, the EPA released a PFAS Action Plan (EPA, 2019) outlining the steps the agency is taking in order to address PFAS chemical constituents in the environment and protect the public health. The action plan is set up to provide both short-term and long-term solutions and strategies in order to address PFAS. EPA is working to build a plan that involves displaying a national research, multi-program and multi-media risk communication plan regarding the environmental challenge. Lastly, EPA is responding to multiple and extensive public input the agency received during its year of public communication including a PFAS National Leadership Summit, multiple community engagements, and via the public docket. In December 2019, EPA set Interim Recommendations to Address Groundwater Contaminated with PFOA and PFOS which included using the PFOA and PFOS Lifetime Drinking Water Health Advisories of 70 ppt (combined or individually) as the recommended Preliminary Remediation Goal for groundwater that is a current or potential source of drinking water, where no state or tribal maximum contaminant level (MCL) or other applicable or relevant and appropriate requirements are available or sufficiently protective.

1.3.5 Commonwealth-specific Action Levels

Puerto Rico has not established any specific PFAS action levels.

1.4 Navy Policy

This subsection provides a summary of Navy policy generated primarily to address onsite and offsite drinking water, as well as AFFF use. As noted previously, groundwater withdrawal on Vieques for public potable use was discontinued in 1978 with the completion of a potable water pipeline from Rio Blanco filtration plant. However, if PFAS are detected in groundwater at the SI stage, then efforts to confirm the absence of private drinking water wells will be made within a 4-mile radius of the detected contamination, per EPA PA/SI guidance. The SI will evaluate if there has been a release of PFAS to the environment that may pose a threat to human health and/or the environment.

² The 1996 Safe Drinking Water Act amendments require that once every five years EPA issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems (PWSs).

1.4.1 DASN Energy, Installations and Environment (EI&E) Policy Memorandum, 21 October 2014

As a result of Navy releases impacting PWS tested under the UCMR3, the Navy issued a policy requiring on-base drinking water sampling for PFOA and PFOS for bases where groundwater was used as drinking water and PFAS could have been released nearby in the past. Installations that were not required to sample finished drinking water under UCMR3 that produce drinking water from on-installation groundwater sources and have an identified or suspected PFAS release within approximately one-mile upgradient to the drinking water source were required to sample their finished drinking water by December 2015.

1.4.2 DASN (E) Policy Memorandum, 14 September 2015

This policy memo largely echoed the requirements laid out in the October 2014 DASN (E) policy memo. However, this memo specified that if levels of PFOS and/or PFOA in drinking water exceeded the current EPA health advisory (i.e., the 2009 provisional short-term health advisories), then alternative drinking water must be supplied until the PFOA and/or PFOS levels were reduced to below the EPA health advisories.

1.4.3 ASD Policy Memorandum, 10 June 2016

This DoD Assistant Secretary of Defense (ASD) policy memo specified that decisions regarding drinking water should be based on the lifetime health advisories issued by EPA's Office of Water in May 2016, rather than the now outdated provisional short-term health advisories issued in 2009.

1.4.4 DASN (E) Policy Memorandum, 14 June 2016

This policy expanded the sampling of PFOA and PFOS at all Navy installations where such sampling was not previously completed under EPA's UCMR3 or the Navy's October 2014 policy (Navy, 2014).

1.4.5 DASN (E) Policy Memorandum, 17 June 2016

This policy defines the Navy's intention to remove, dispose, and replace legacy AFFF that contains PFOS and/or PFOA once environmentally suitable substitutes are identified and certified to meet MILSPEC requirements. This policy directed the following actions to be taken until suitable replacements could be certified:

- Immediately cease the uncontrolled environmental release of AFFF for shoreside installations, with the exception of emergency responses
- Update and implement Navy and Marine Corps firefighting system requirements, as needed, to ensure fire and emergency service vehicles and equipment at Navy installations and facilities are tested and certified in a manner that does not allow the release of AFFF to the environment
- By the end of fiscal year (FY) 2017 (FY2017), remove and dispose of uninstalled PFOS-containing AFFF in drums and cans from local stored supplies for shore installations and ships to prevent future environmental releases

1.4.6 DASN (E) Policy Memorandum, 20 June 2016

This policy required the Navy to identify and prioritize sites for investigation if drinking water resources, on- or off-installation, are thought to be vulnerable to PFAS contamination from past Navy/Marine Corps PFAS releases. Sites with drinking water sources within 1 mile downgradient from known or potential releases of PFAS were assigned the highest priority. This policy directed the sampling of off-base drinking water at these high priority (Priority 1) sites within FY2017.

The primary mechanism to identify potential PFAS release sites/areas of concern (AOCs) (referred to as PFAS AOCs in the PA) was review of Environmental Restoration, Navy (ER,N) records. To ensure that all potential PFAS release mechanisms were identified, installations were directed to perform an internal review to identify areas that are not already part of the ER,N program. The Navy has completed the sampling for all off-base potentially impacted drinking water sources that were identified as a result of this policy and currently known exposures have been addressed. No sites at NASD or VNTR were identified as Priority 1 sites.

Facility Description

Vieques, Puerto Rico, is located in the Caribbean Sea, approximately 7 miles southeast across the Vieques Passage from the eastern tip of the main island of Puerto Rico (**Figure 2-1**). This island is located on the Antillean Island Arc separating the Caribbean Sea from the Atlantic Ocean and is approximately 21 miles long and 4.5 miles wide, with an area of approximately 33,100 acres, or 51 square miles. The Navy purchased large portions of Vieques in the early 1940s to conduct activities related to military training. The western side of Vieques, within the former NASD (**Figure 2-1**), consisted mainly of ammunition loading and storage, vehicle and facility maintenance, and an open burn/open detonation area. The eastern side of Vieques (former VNTR) (**Figure 2-1**) was used for various aspects of naval gunfire training, including air-to-ground ordnance delivery and amphibious landings, as well as housing the main base of operations for these activities at Camp García.

2.1 Facility Background

2.1.1 Former Navy Ammunition Support Detachment

The Navy ceased facility-wide operations on the former NASD in April 2001, in accordance with the January 30, 2000, Presidential Directive to the Secretary of Defense associated with the transfer of lands by quitclaim deed dated April 30, 2001 of the Navy-owned western portion of Vieques. The land transfer was completed on May 1, 2001, and the Navy has had no military presence at the main operational area since. Currently, the Navy's involvement at the former NASD comprises the environmental restoration program activities. **Figure 2-2** shows the locations of all areas to be investigated under this PA on the former NASD, as further described in Sections 3 and 4.

Additionally, on February 28, 2000, the Navy quitclaimed two parcels of land in the former NASD adjacent to the Antonio Rivera Rodriguez Airport to the Commonwealth of Puerto Rico (Holaday, 2000) for the Ports of Puerto Rico to extend their runway. No permanent structures other than an abandoned guard shed was included in the quitclaim (**Appendix F**).

On February 11, 2005, Vieques was placed on the National Priority List (NPL) as the former Atlantic Fleet Weapons Training Area - Vieques, which required all subsequent environmental restoration activities for Navy Installation Restoration sites on Vieques be conducted under CERCLA unless and until removed from CERCLA authority. The Navy, Department of the Interior (DOI), EPA, and Puerto Rico Environmental Quality Board (PREQB) executed a Federal Facility Agreement (FFA) on September 7, 2007 that established the procedural framework and schedule for implementing the CERCLA response actions for Vieques.

2.1.2 Former Vieques Naval Training Range

On April 30, 2003, the Navy ceased training exercises on the VNTR. Following termination of training operations on Vieques, the 14,573 acres of the former VNTR were transferred to the jurisdiction of the DOI, to be managed by the United States Fish and Wildlife Service (USFWS) as a National Wildlife Refuge 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 LIA, is managed as a wilderness area where public access is prohibited in accordance with Public Law 106–398 and Public Law 107–107.

The former VNTR is located on the eastern one-third of the island and comprises the Surface Impact Area (SIA), Live Impact Area (LIA), and Eastern Conservation Area (ECA), totaling approximately 3,600 acres, as well as the adjacent and wholly contiguous Eastern Maneuver Area (EMA), totaling approximately 11,000 acres. **Figure 2-3** shows the locations of all PFAS AOCs to be investigated under this PA on the former VNTR, as further described in Sections 3 and 4.

On May 11, 1988, the Navy declared excess 25.734 acres of land, more or less (Steed, 1988), in the ward of Santa Maria, municipality of Vieques, Puerto Rico, for the sole purpose of creation of a sanitary landfill for non-

hazardous wastes by the Municipality of Vieques. Prior to the Navy ownership of the land, it was used as a sugarcane farm. The land was allowed to remain fallow and unimproved during the time it was in the possession of the Navy and contained no structures, roads, or improvements (**Appendix F**).

As noted in Section 2.1.1, on February 11, 2005 the former Naval facilities on eastern and western Vieques were designated as an NPL site, which put the environmental restoration program under CERCLA. Currently, the Navy's involvement at the former VNTR comprises the environmental restoration program and munitions response activities.

2.1.3 Potential AFFF Usage at NASD and VNTR

Based on information gathered from an interview during the PA, 50 gallons of AFFF were reportedly stored on each of two structural fire trucks. These fire trucks were reportedly staged to support operations at the two helicopter pads (one helicopter pad was located south of Camp Garcia and north of SWMU 20, and the second helicopter pad was located northeast of the main NASD complex, but southeast of AOC H Building 13 [2048 in Appendix A]); none were reportedly utilized to support airfield operations. Storage of the AFFF containers was reported to have been in conex boxes 100 feet southwest of Building 2046 (see Section 4.2.1 for potential/approximate area) in the NASD. Cleaning of the trucks reportedly occurred monthly, and pump tests were performed annually at the NASD fire station.

2.2 Regional and Local Setting

2.2.1 Climate

The climate of Vieques is characterized as warm and humid (tropical-marine), with frequent showers occurring throughout the year. The easterly trade winds blowing across the island year-round moderate the temperature on Vieques, resulting in an annual mean temperature of 79 to 80 degrees Fahrenheit. The island's average annual rainfall is approximately 36 inches, with maximum extremes of 25 inches in the east part of the island and 45 to 50 inches in the west (PREQB, 1995a).

2.2.2 Geologic Setting

Vieques geology is characterized by plutonic and volcanic rocks generally overlain by alluvial deposits and sedimentary rocks. The volcanic rocks, of Late Cretaceous age, were deposited in a marine environment. Later in the Cretaceous Period, a quartz-diorite/granodiorite plutonic complex intruded the volcanic andesite and is exposed over a large part of the island (USGS, 1989).

Much of the igneous bedrock is exposed over the island with exceptions where it is overlain by limestone of Tertiary age and alluvial, beach, and swamp deposits of Quaternary age. Limestone only occurs within portions of the north, south, and eastern parts of the island. Alluvial sedimentary deposits generally consist of sand with percentages of silt, clay, and gravel, generated from the weathering of bedrock. These deposits generally occur in valleys and near the ocean. Geophysical surveys show that the alluvial deposits average about 30 feet in thickness and overlie bedrock composed of granodiorite and quartz diorite (USGS, 1989). Five general categories are present in eastern Vieques, (1) alluvial deposits (sand, silt, and clay), (2) beach and dune deposits, (3) marine sedimentary rocks, (4) sandstone, siltstone, conglomerate, lava, tuff, and *tuffaceous breccia*, and (5) plutonic rock made up largely of granodiorite and quartz diorite (USGS, 1989).

2.2.3 Hydrogeology

There are two named aquifers on Vieques from which groundwater was historically withdrawn for public potable use (**Figure 2-4**), the Valle de Resolución, located beneath the western portion of the island, and the Valle de Esperanza, located beneath the southern portion of the island near Camp Garcia, covering a total of 16 square kilometers. Each aquifer is an alluvial deposit originating from the saprolitic and erosional weathering of the granodiorite pluton that makes up the basement rock of the island. Each aquifer thickens seaward from its respective origin and is overlain by impermeable biogenic clay deposits near the shores (Gomez-Gomez et. al.,

2014). The aquifers are supplied by meteoric water, but infiltration into the aquifers only accounts for 5 percent of the total water budget precipitated onto the island annually.

The Valle de Esperanza is the more productive of the two aquifers and was managed by the Puerto Rico Aqueduct and Sewer Authority (PRASA). Groundwater is not used as a source of public drinking water on the island and there are no known private wells used for drinking water purposes. Groundwater withdrawal on Vieques for public potable use was formerly conducted via 14 public water supply wells located in the Valle de Esperanza aquifer near Esperanza and potentially via 6 “fresh water wells” located in the Valle de Resolución aquifer (use of the six “fresh water wells” as public water supply wells is assumed but not confirmed), as shown in **Figure 2-4**, withdrawing groundwater at a rate of about 600,000 gallons per day. These public water supply wells were discontinued by 1978. Since that time, potable water for the island population has been supplied via a pipeline from the Rio Blanco filtration plant in eastern Puerto Rico (USGS, 1989). Camp Garcia was connected to the water line in the summer of 2000 (CH2M, 2008b).

The United States Geological Survey (USGS) has performed a groundwater study on Vieques. The results indicate that the groundwater contains high concentrations of sodium bicarbonate (USGS, 1989). Because of its high sodium content, the groundwater on Vieques is not suitable for irrigation over extended periods. Saltwater intrusion brought on by excessive groundwater withdrawals and accumulation of salts from sea spray has been blamed for high chloride concentrations in Vieques’ groundwater observed in the 1970s. Chloride levels in groundwater on Vieques declined significantly following the reduction of withdrawals from the Esperanza Valley aquifer in the 1980s, supporting the claim of a relationship between withdrawal rates and chloride concentrations in groundwater (Baker, 1999).

2.2.4 Topography and Surface Water

The topography of Vieques consists generally of hills and valleys throughout the entire island. The western side of the island consists of gently rolling hills with a deeper soil profile than the eastern side, which consists of more exposed, rugged terrain. The highest point on the western side is 987 feet above mean sea level (amsl) at Monte Pirata. The highest point on the eastern side is approximately 420 feet amsl at Cerro Matias. The coastal areas contain generally level terrain made up of primarily beaches, lagoons, and mangrove swamps.

The streambeds found on Vieques are generally oriented to the north or to the south toward the coasts from higher areas in the central part of the island. Vieques does not have any perennial surface drainage; stream flow on Vieques is ephemeral (intermittent), controlled by surface runoff from rainfall. Approximately 90 percent of the rainfall is lost to evaporation, based on statistical data from the U.S. Virgin Islands. Of the remaining 10 percent, approximately 5 percent infiltrates into the ground to recharge groundwater, and 5 percent becomes surface runoff. Based on their geographic locations, surface runoff and groundwater at PFAS AOCs within the NASD (**Figure 2-2**) are anticipated to flow generally north into the Vieques Passage, surface runoff and groundwater at PFAS AOCs of the VNTR (**Figure 2-3**) are anticipated to generally flow south toward the Caribbean Sea.

2.3 Migration Pathways and Potential Receptors

This subsection discusses hypothetical migration pathways and receptors (both human and ecological) of PFAS in the environment. For sites recommended for further investigation in this PA Report, potential migration and exposure pathways, as well as receptors, will be considered during preparation of the PFAS SI Sampling and Analysis Plan (SAP) to ensure appropriate evaluation during the PFAS SI.

2.3.1 Migration Pathways

Because of their chemical structure, PFAS are chemically and biologically stable and resist typical degradation processes. As a result, PFAS persist in the environment. Additionally, although PFAS are water soluble and tend to be relatively mobile in groundwater, complex partitioning mechanisms influence fate and transport. For example, a tendency for PFAS to associate with organic carbon in soil and sediment can result in persistent concentrations in these media (NAVFAC, 2017).

Potential migration pathways for a hypothetical PFAS release at NASD/VNTR include:

- Direct release of PFAS to surface and/or subsurface soil
- Overland flow of PFAS in runoff via drainage ditches/ephemeral streams to downgradient terrestrial areas including inland lagoons, and offshore areas of the Vieques Passage to the north or the Caribbean Sea to the south
- Leaching of PFAS from soil to groundwater
- Transport via advection in groundwater to downgradient areas, with potential discharge to surface water bodies including lagoons and offshore areas

2.3.2 Human Receptors

This subsection considers exposure scenarios for hypothetical receptors. The potential for actual exposure would be based on PFAS presence, if present, evaluated through the CERCLA process.

Groundwater

Groundwater is not currently used as a drinking water source at the former NASD, former VNTR, or by the residents of Vieques, Puerto Rico; therefore, there is no current exposure pathway for groundwater to residents or workers through drinking water (CH2M, 2008b). Groundwater on Vieques is generally considered not suitable for use as a potable water source due to its general poor quality (high total dissolved solids/salinity) as a result of natural saltwater intrusion and saltwater intrusion induced by historic pumping of water supply wells when the island's aquifers were used as a potable water source. Nevertheless, potential groundwater use is evaluated on a site-specific basis in accordance with Puerto Rico's Water Quality Standards Regulation that classifies all groundwater in Puerto Rico as groundwater intended for use as a source of drinking water supply and for agricultural uses (PREQB, 2016).

In areas where groundwater is within the potential depth of construction activities, construction workers could be exposed to PFAS in groundwater (if PFAS and receptors are present) through dermal contact during excavation activities. However, there are currently no regulatory screening levels or other criteria for dermal contact with PFAS in groundwater and no subsurface construction occurring in the PFAS AOC areas shown in **Figures 2-2 and 2-3**. Construction workers may also be exposed to some volatile PFAS constituents through inhalation, but analytical methodology and toxicology of volatile PFAS chemicals are still being evaluated. PFOA, PFOS, and PFBS are not particularly volatile. If PFAS are detected in groundwater at the SI stage, then efforts to confirm the absence of private drinking water wells will be made within a 4-mile radius of the detected contamination, per EPA PA/SI guidance.

Soil

Residents, construction workers, maintenance/industrial workers, recreational users, visitors, and trespassers could be exposed to PFAS in soil (if PFAS and receptors be present) through incidental ingestion of and dermal contact with surface and subsurface soil. However, there are currently no regulatory screening levels or other criteria for dermal contact with soil. There are no screening levels or other criteria for inhalation of PFAS in dust. There are also no screening values or standardized analytical methods available for volatile PFAS chemicals (such as fluorotelomer alcohols).

Sediment

Current and future maintenance workers, trespassers, visitors, recreational users, future residents, and construction workers could be exposed to PFAS in sediment (if PFAS and receptors are present) in onsite drainage ditches and current and future recreational users could be exposed to PFAS in sediment (if PFAS and receptors are present) located in quebradas, arroyos, and other settling basins through incidental ingestion of and dermal contact with sediment.

Surface Water

Current and future maintenance workers, trespassers, visitors, recreational users, future residents, and construction workers could be exposed to PFAS in surface water (if PFAS and receptors are present) in drainage ditches, water filled quebradas/arroyos through incidental ingestion of and dermal contact with surface water.

Biota

PFAS constituents are known to bioaccumulate. Human receptors may be exposed through ingestion of food products which have become contaminated, such as fish and fowl tissue.

2.3.3 Ecological Receptors

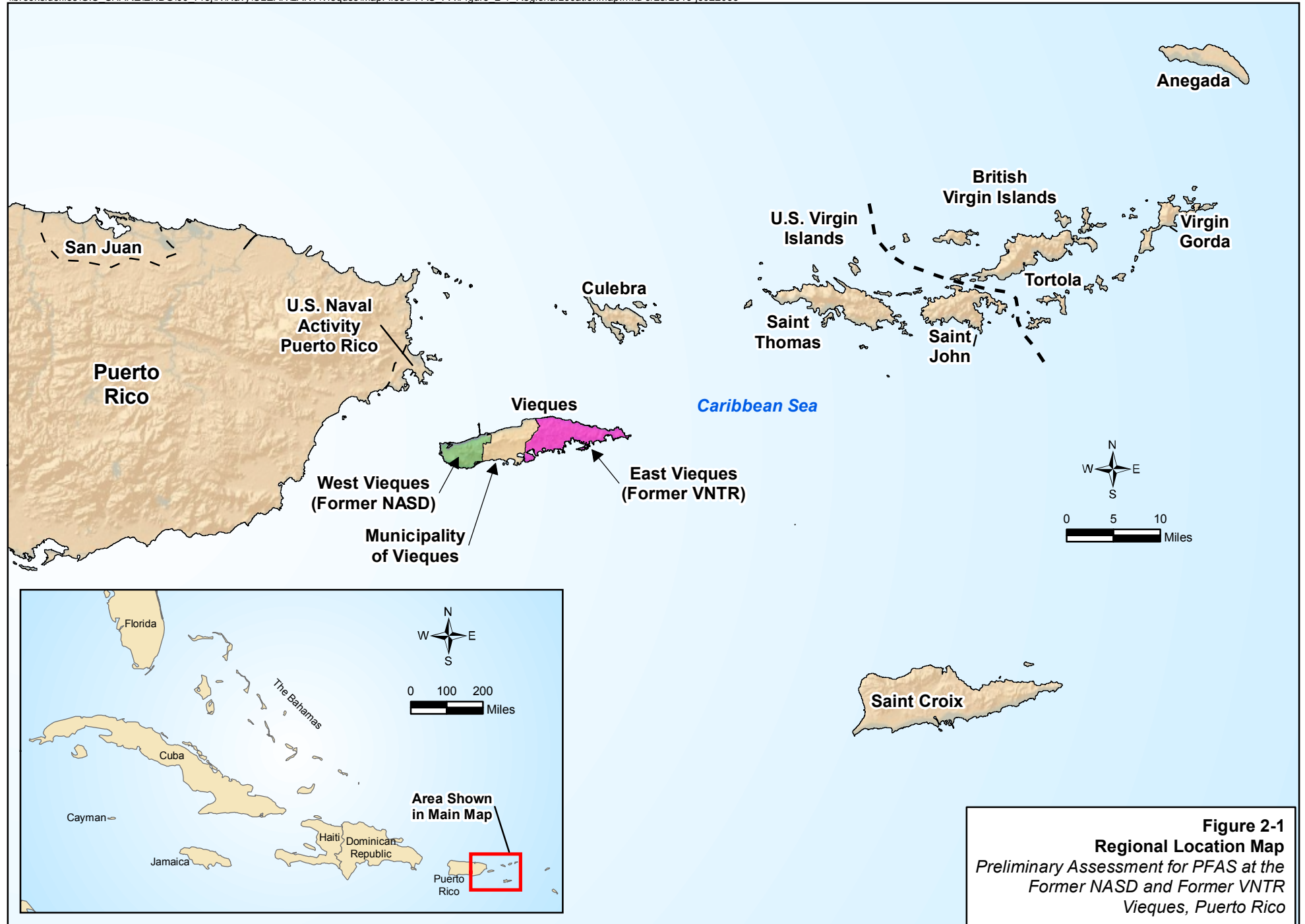
A wide variety of terrestrial and wetland/aquatic ecological receptors may reside in the former NASD and former VNTR. In terrestrial habitats, these receptors include terrestrial plants, soil invertebrates, reptiles, birds, and mammals. Further, some of the areas in the former NASD and former VNTR are located directly adjacent to wetland and aquatic habitats. In these wetland and aquatic habitats, receptors include aquatic and wetland plants, aquatic and benthic invertebrates, reptiles, amphibians, fish, birds, and mammals.

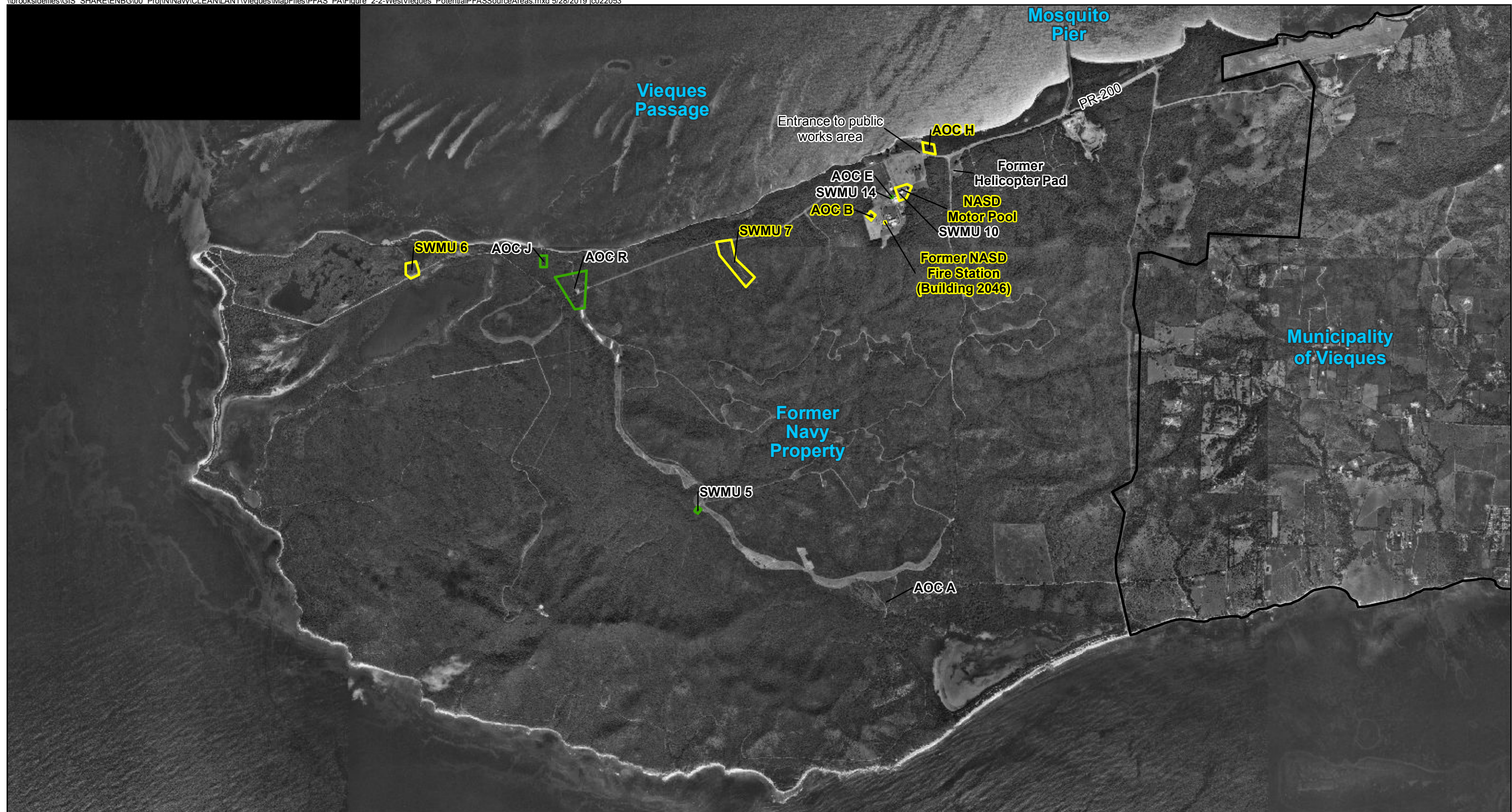
Lower trophic level terrestrial ecological receptors (such as terrestrial plants and soil invertebrates) could be exposed to PFAS compounds released to surface soils through root uptake, direct contact, and/or direct ingestion. Because there is some evidence that PFAS compounds may bioaccumulate in terrestrial food items (such as plants), there is the potential that upper trophic level receptors (such as birds and mammals) could be exposed to these compounds via the food web, as well as through incidental ingestion of soil and direct ingestion of surface water (if PFAS compounds are released to water sources).

Lower trophic level wetland/aquatic ecological receptors (such as wetland/aquatic plants, aquatic and benthic invertebrates, fish, reptiles, and amphibians) could be exposed to PFAS compounds released to surface water and/or sediment (either directly, or indirectly via surface runoff from terrestrial areas or through groundwater discharge) through root uptake, direct contact, and/or direct ingestion. Because there is evidence that PFAS compounds may bioaccumulate in aquatic food items (such as fish), there is the potential that upper trophic level receptors (such as birds and mammals) could be exposed to these compounds via the food web, as well as through incidental ingestion of sediment and direct ingestion of surface water.

Currently, no formal regulatory-based ecological screening values (ESVs) are available for PFAS compounds. However, there are currently ecotoxicology data for some PFAS compounds (such as PFOA and PFOS) available from the literature for soil and water exposures. Little ecotoxicology data are currently available for sediment exposures, although this is a very active field of research and additional data are likely to become available in the relatively near future. However, as indicated in the final Ecological Risk Assessment (ERA) Protocol (CH2M, 2018), PFAS compounds will be evaluated on a site-specific basis using the state-of-the-science toxicological information available at the time within the applicable policy framework; the results will be evaluated for direct ecological exposures and for food web exposures, as appropriate.

Appendix B summarizes the federal and Puerto Rico listed terrestrial plant and animal species and aquatic animal species that are known to or potentially occur within the former NASD and former VNTR, and therefore may occur at PFAS AOCs having suitable habitat. The document shows that there is federal protection for three bird, seven reptile, five marine mammal, four fish, seven marine invertebrate, and 12 plant species (**Appendix B**, Table 1).





- Legend**
- Potential PFAS Source Area
 - Not a Potential PFAS Source Area

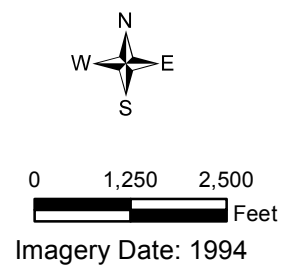
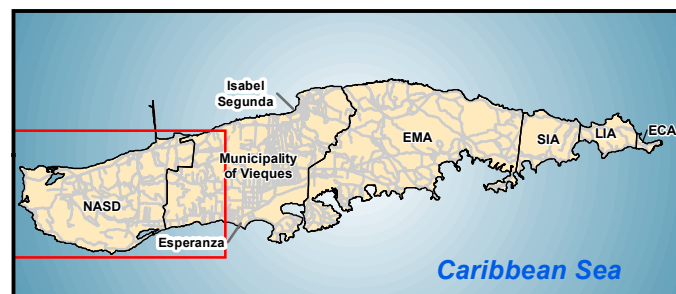


Figure 2-2
West Vieques Potential PFAS Source Areas
*Preliminary Assessment for PFAS at the
Former NASD and Former VNTR
Vieques, Puerto Rico*



Legend
Potential PFAS Source Area
Not a Potential PFAS Source Area

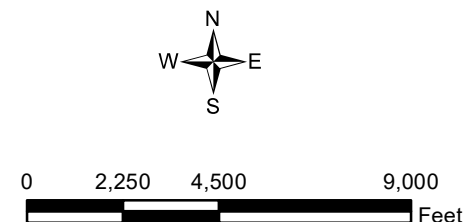
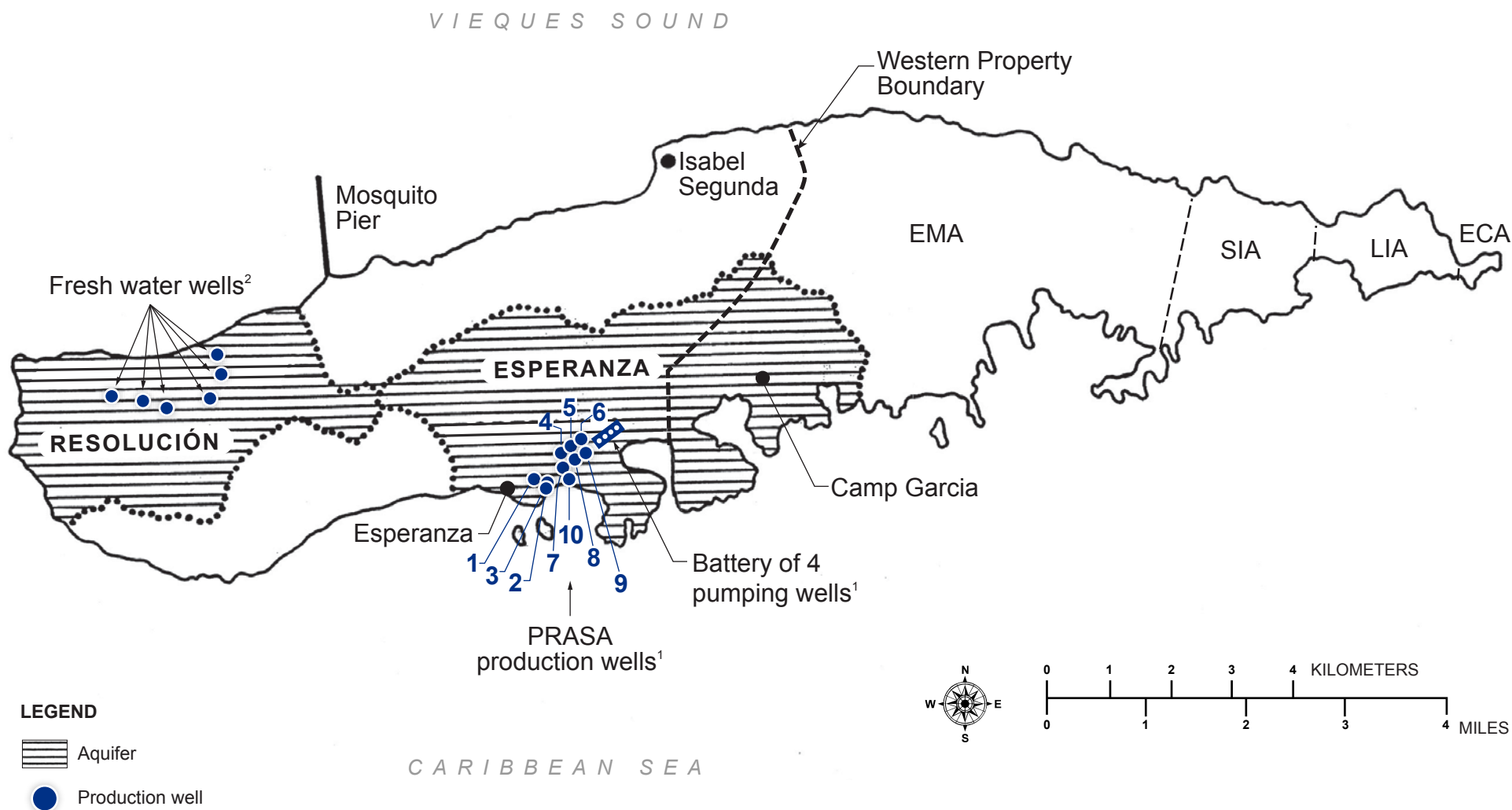


Figure 2-3
East Vieques Potential PFAS Source Areas
*Preliminary Assessment for PFAS at the
Former NASD and Former VNTR
Vieques, Puerto Rico*



References:

1. United States Geological Survey (USGS). 1989. Reconnaissance of the Ground-Water Resources of Vieques Island, Puerto Rico. By Sigfredo Torres-Gonzalez. Report 86-4100.
2. Naval Facilities Engineering Command (NAVFAC). 2003. Environmental Baseline Survey, Vieques Naval Training Range Vieques island, Puerto Rico. Map shown in Appendix G – Historical Site Maps. April 1.

Note:

1. The six Fresh water wells shown are assumed to be (but not confirmed) former public water supply wells.

FIGURE 2-4

Locations of Named Vieques Aquifers and Historical Public Water Supply Wells

Preliminary Assessment for PFAS at the Former NASD and Former VNTR Vieques, Puerto Rico

SECTION 3

Assessment Methodology

The following activities were performed in support of this PA:

- Review of available information to identify potential PFAS source/release areas and potential receptors
- Interviews with site personnel to validate and verify information collected and to provide any supplemental information
- Site reconnaissance of the facility to identify any evidence of PFAS source/release areas and potential receptors and migration pathways to supplement the information gathered during the information review and interviews in order to appropriately identify all PFAS AOCs

Each activity is described in the subsections that follow.

3.1 Existing Information Review

Existing information was gathered and reviewed to identify and characterize locations of potential PFAS use or disposal, and to focus the activities to be conducted during the site reconnaissance. A summary of information reviewed is provided as **Appendix C** and **Table 3-1**. The following document types were evaluated during the preliminary review.

3.1.1 Internet Records

Internet search engines were utilized to search for historical information on fires and use of AFFF at former NASD and former VNTR. Additionally, the online National Archives Catalog was reviewed. No information relevant to this PA was located during the internet record search. Search terms are listed in **Table 3-2**.

3.1.2 Facility Operations Records

No information relating to PFAS storage, use, or disposal at the former NASD and former VNTR was identified in the facility operations records (**Appendix C**).

3.1.3 Environmental Restoration Program

Environmental Restoration Program records from the Administrative Record were searched for key terms to identify potential PFAS release areas and to obtain information on physical investigations and identification of potential pathways and receptors at those areas. No relevant environmental restoration program records or historical operations records were found for the former NASD or former VNTR.

3.1.4 Environmental Data Resources Reports

No environmental data resource reports were found for the former NASD or former VNTR.

3.1.5 National Archives Records

The research team visited the National Archives center in College Park, Maryland, from October 9 to 11, 2018 to locate relevant records in the Textual, Cartographic, Microfilm, and Still Images departments. Research staff in the Textual Records department indicated that a cursory search of the former NASD and former VNTR files did not yield any information relating to AFFF or firefighting at the facility. The National Archives Navy specialist researcher indicated that the archives did not have any relevant information. No information relating to PFAS storage, use, or disposal at the former NASD and former VNTR was identified in these records (**Appendix C**).

3.2 Interviews

A list of employees to potentially interview was put together from the list of known firefighters at the Roosevelt Roads Navy Base, currently known as the NAPR who may have worked on both the Roosevelt Roads base and the

Vieques NASD and VNTR bases. Additionally, one firefighter was interviewed who worked on the Cherry Point Navy Base who also indicated he had worked on the Vieques VNTR base. CH2M attempted to conduct interviews with the former firefighters, and ultimately conducted interviews on June 1, 2018, and January 7, 2019 to provide input on information collected during the historical records review, provide any additional information related to potential PFAS presence/use/release, and to help refine the planned site reconnaissance locations.

Two interviews were conducted. Additional interviews were attempted but could not be completed because of lack of accurate contact information or failure of the potential interviewee to respond to the interview request. Each interview session was logged using questionnaires. The completed questionnaires are provided in **Appendix D**.

- CH2M interviewed two personnel regarding historical activities and procedures potentially associated with AFFF/PFAS. While base operations undoubtedly were modified over the duration of active military presence on the island, it is reasonable to assume the information provided by the interviewees represents a longer timeframe than their presence on the island. The following is a summary of the information provided: Vieques Firefighter (from 1998 to 2001)
 - Fifty gallons of AFFF were stored on each of two fire trucks
 - The fire trucks were intended to support the helicopter pads but not the airfields
 - The fire trucks containing AFFF were parked at the Former NASD fire station
 - The AFFF was added to the fire trucks on the ramp in front of the NASD fire station; fire trucks were also washed on the ramp
 - AFFF concentrate containers (5-gallon) were stored in a conex boxes adjacent to the NASD fire station
 - The fire trucks were cleaned/decontaminated by flushing once a month, but no foam was used, and pump tests were performed once a year without foam
 - Interviewee circled on two maps, the former motor pool areas where fire trucks were maintained:
 - Camp Garcia
 - Former NASD
 - There were no fire training pits on Vieques
 - There were no buildings with AFFF fire suppression on Vieques
 - Spray testing was not conducted with foam
 - It was possible for AFFF to be inadvertently released on the ramp of the fire station
 - Interviewee had no knowledge of AFFF use during a fire response at Vieques
- Assistant Fire Chief (from 1974 to 1975)
 - Interviewee was stationed with the Marines at Camp Garcia in 1974 and 1975; he had no information regarding Navy operations in the western portion of Vieques (Former NASD)
 - Interviewee had no knowledge of fire training areas on Vieques
 - Interviewee stated that at least until he left in 1975, no AFFF was used by the Marine Corps on Vieques, and the trucks were not converted to use AFFF, Blood Meal Foam only
 - Interviewee stated he had no knowledge of any buildings or hangars using AFFF in fire suppression systems
 - Interviewee stated there were no crashes at the airfields or helicopter pads on Vieques

The information related to PFAS storage and use at the former NASD and former VNTR identified in these interviews is included in Section 4.

3.3 Site Reconnaissance

Site reconnaissance related to potential PFAS sites was completed on October 5, 2018, December 5, 2018, April 12, 2019, and May 6, 2019. During the site reconnaissance, 7 of the 14 areas were visited to identify any evidence of PFAS use, disposal, or release, to help confirm, refute, or supplement information identified in the document review and provided during interviews, and to document physical site characteristics (such as surface flow and drainage conditions) for areas with potential PFAS releases. For the remaining seven sites, historic studies/actions/monitoring sufficiently documented the sites' physical conditions. Information gathered during the site reconnaissance is detailed in Section 4 and a photograph log from the site reconnaissance, as well as relevant historical photographs, is provided in **Appendix E**. During preparation of the SI SAP, additional site reconnaissance will be performed to provide rationale for sample locations.

Table 3-1. Document List*Preliminary Assessment for PFAS**Former NASD and VNTR, Vieques, Puerto Rico***On Base and Document Search List**

On Base and Document Search List	
1	UCMR3 Database - Unregulated Contaminated Monitoring Rule No. 3 database
2	Copy of Authorized Use List (AUL) - Materials related to per- and polyfluoroalkyl (PFAS) substances (such as aqueous film forming foam (AFFF) used for firefighting)
3	SPCC - Spill Prevention, Control and Countermeasure
4	SWPPP - Storm Water Pollution Prevention Plan
5	Emergency Planning and Community Right-to-Know Act (EPCRA) Reports
6	NPDES permits related to discharges that may have involved PFAS substances
7	RCRA permits related to wastes that may have involved PFAS substances
8	Material Safety Data Sheets (MSDS) related to PFAS substances
9	Base reports related to sampling for PFAS from monitoring wells and non-potable and potable sources
10	Safety Data Sheets (SDS) related to PFAS substances
11	Spill reports - related to PFAS and AFFF
12	Crash reports
13	Newspaper articles related to fires, industrial spills that are PFAS related
14	Environmental cleanup records, including documentation of releases, incident reports, and spill logs related to PFAS
15	Citizen complaints that may pertain to PFAS usage
16	Photo documentation of releases
17	Public Works office records related to usage or operations related to PFAS substances
18	Materials inventories related to PFAS substances
19	Inspection reports related to PFAS substances
20	Installation master plans
21	Relevant GIS data showing monitoring wells, drinking water wells, and facilities that may have stored PFAS substances or used these substances in industrial operations
22	Real estate records (zoning plans, deeds, etc.) related to facilities that may have stored PFAS substances or used these substances in industrial operations
23	Relevant building as-built drawings related to facilities that may have stored PFAS substances or used these substances in industrial operations
24	Maps and aerial photos related to facilities that may have stored PFAS substances or used these substances in industrial operations
25	Historical photographs related to facilities that may have stored PFAS substances or used these substances in industrial operations
26	Environmental surveys/ studies/ assessments related to PFAS substances
27	Physical Investigation Reports (e.g. USGS survey reports)

Laura sent e-mail on March 28, 2019. UCMR3 Database showed PFAS water samples on mainland Puerto Rico. Four sampling events with all null results. In report in Section 1.3.2.

No documents found.

Baker, 2003. Draft Spill Prevention, Control, and Countermeasures Plan, January 2003. Referenced in Vieques Naval Training Range (VNTR) Environmental Baseline Survey (EBS) (NAVFAC, 2003).

Gannett Fleming, Inc. Stormwater Pollution and Prevention Plan, Naval Facilities located on Vieques Island, Puerto Rico, Annual Update, 1999. Referenced in VNTR EBS (NAVFAC, 2003).

Search done in VNTR EBS Report (NAVFAC, 2003) Appendix C Environmental Data Resources, Inc. Report.

Only one NPDES permit found 2016 for the public waste water system. Nothing related to Navy property. Found on EPA website: <https://www.epa.gov/npdes-permits/final-npdes-permit-vieques-wastewater-treatment-plant-puerto-rico>

The VNTR EBS Report (NAVFAC, 2003) Appendix C Environmental Data Resources, Inc. Report discusses search of RCRA Administrative Action Tracking System (RAATS). No PFAS substances described. EBS NASD Report VISTA search discusses RCRA hazardous waste generators, none found in Vieques. Appendix B. (PMC, 2000).

VNTR EBS Report (NAVFAC, 2003) HMIRS - Hazardous Materials Information Reporting System (Appendix C).

UCMR3 Database showed PFAS water samples on mainland Puerto Rico. Four sampling events with all null results. In report in Section 1.3.2.

No SDS sheets found.

VNTR EBS Report (NAVFAC, 2003) HMIRS - Hazardous Materials Information Reporting System (Appendix C) lists spill reports investigated. No reports found relating to PFAS or AFFF.

Navy Safety Center, listed database on the WHAMRS of crashes. Only one crash listed and it was in the water.

No newspaper articles found.

No cleanup records found.

None found.

EBS reports have photo documentation of suspected releases but none known or suspected to be related to PFAS.

UCMR3 Database showed PFAS water samples on mainland Puerto Rico. Four sampling events with all null results. In report in Section 1.3.2.

Vieques Navy installations are small bases with mostly transient population and limited permanent structures. No material inventories of items in the structures were discovered.

No identified inspection reports related to PFAS substances.

No Installation Master Plans were identified.

Appendix D of the VNTR EBS Report (NAVFAC, 2003) was an Aerial Photographic Analysis. No sites related to PFAS were identified.

Appendix F of the PFAS PA Report (CH2M, 2020) lists real estate records. Also Appendix A of the VNTR EBS Report (NAVFAC, 2003) includes real estate records. Appendix B of the NASD EBS Report (PMC, 2000) include real estate records. No buildings or facilities that may have stored or used PFAS were identified.

Appendix B of the VNTR EBS Report (NAVFAC, 2003) includes real property records. Appendix B of the NASD EBS Report (PMC, 2000) includes real estate records. Appendix F of the PFAS PA Report (CH2M, 2020) lists real estate records. No buildings or facilities that may have stored or used PFAS were identified.

Appendixes A and D of VNTR EBS Report (NAVFAC, 2003) and Appendix B of the NASD EBS Report (PMC, 2000) includes real estate records.

EBS reports have photo documentation of suspected releases but none related to PFAS. Appendix C of NASD EBS Report (PMC, 2000) and Appendix E of VNTR EBS Report (NAVFAC, 2003) includes site photographs but none related to PFAS.

EBS VNTR Report (NAVFAC, 2003) and EBS NASD Report (PMC, 2000) both environmental surveys but no PFAS substances identified.

Two well survey reports from USGS "Water Wells Survey 1995 and Reconnaissance of Water Resources of Vieques Island 1989.

Table 3-1. Document List
Preliminary Assessment for PFAS
Former NASD and VNTR, Vieques, Puerto Rico

On Base and Document Search List		
28	Purchase orders related to facilities that may have stored PFAS substances or used these substances in industrial operations	No purchase order information found.
29	Other potentially useful documents related to PFAS substances	All useful information related to the bases with possible PFAS storage are included in the PFAS PA Report Appendices (CH2M, 2020).

Table 3-2. Search Criteria*Preliminary Assessment for PFAS**Former NASD and VNTR, Vieques, Puerto Rico*

Search Terms		Search Terms	
1	AFWT	51	AFWTA motor pool
2	AFWT AFFF	52	AFWTA nozzle
3	AFWT AFFF handling area(s)	53	AFWTA PFAS
4	AFWT AFFF storage	54	AFWTA PFOA
5	AFWT Airfield crash	55	AFWTA PFOS
6	AFWT ansulite	56	AFWTA pump house
7	AFWT electroplate	57	AFWTA runway
8	AFWT electroplating	58	AFWTA suppressant
9	AFWT Fire fighting	59	AFWTA suppression
10	AFWT Fire Navy Airfield crash	60	AFWTA training
11	AFWT Fire training	61	AFWTF
12	AFWT Firefighter	62	AFWTF AFFF
13	AFWT Firefighting	63	AFWTF AFFF handling area(s)
14	AFWT Foam	64	AFWTF AFFF storage
15	AFWT hangar	65	AFWTF Airfield crash
16	AFWT helicopter	66	AFWTF ansulite
17	AFWT helipad	67	AFWTF electroplate
18	AFWT helo	68	AFWTF electroplating
19	AFWT Landing craft unit	69	AFWTF Fire fighting
20	AFWT LCU	70	AFWTF Fire Navy Airfield crash
21	AFWT motor pool	71	AFWTF Fire training
22	AFWT nozzle	72	AFWTF Firefighter
23	AFWT PFAS	73	AFWTF Firefighting
24	AFWT PFOA	74	AFWTF Foam
25	AFWT PFOS	75	AFWTF hangar
26	AFWT pump house	76	AFWTF helicopter
27	AFWT runway	77	AFWTF helipad
28	AFWT suppressant	78	AFWTF helo
29	AFWT suppression	79	AFWTF Landing craft unit
30	AFWT training	80	AFWTF LCU
31	AFWTA	81	AFWTF motor pool
32	AFWTA AFFF	82	AFWTF nozzle
33	AFWTA AFFF handling area(s)	83	AFWTF PFAS
34	AFWTA AFFF storage	84	AFWTF PFOA
35	AFWTA Airfield crash	85	AFWTF PFOS
36	AFWTA ansulite	86	AFWTF pump house
37	AFWTA electroplate	87	AFWTF runway
38	AFWTA electroplating	88	AFWTF suppressant
39	AFWTA Fire fighting	89	AFWTF suppression
40	AFWTA Fire Navy Airfield crash	90	AFWTF training
41	AFWTA Fire training	91	Ammunition Depot Annex
42	AFWTA Firefighter	92	Ammunitions Depot Annex
43	AFWTA Firefighting	93	Camp Garcia AFFF
44	AFWTA Foam	94	Camp Garcia AFFF handling area(s)
45	AFWTA hangar	95	Camp Garcia AFFF storage
46	AFWTA helicopter	96	Camp Garcia Airfield crash
47	AFWTA helipad	97	Camp Garcia ansulite
48	AFWTA helo	98	Camp Garcia electroplate
49	AFWTA Landing craft unit	99	Camp Garcia electroplating
50	AFWTA LCU	100	Camp Garcia Fire fighting

Table 3-2. Search Criteria*Preliminary Assessment for PFAS**Former NASD and VNTR, Vieques, Puerto Rico*

Search Terms		Search Terms	
101	Camp Garcia Fire Navy Airfield crash	151	NASD suppression
102	Camp Garcia Fire training	152	NASD training
103	Camp Garcia Firefighter	153	Naval Ammunition Support Detachment AFFF
104	Camp Garcia Firefighting	154	Naval Ammunition Support Detachment AFFF handling area(s)
105	Camp Garcia Foam	155	Naval Ammunition Support Detachment AFFF storage
106	Camp Garcia hangar	156	Naval Ammunition Support Detachment Airfield crash
107	Camp Garcia helicopter	157	Naval Ammunition Support Detachment ansulite
108	Camp Garcia helipad	158	Naval Ammunition Support Detachment electroplate
109	Camp Garcia helo	159	Naval Ammunition Support Detachment electroplating
110	Camp Garcia Landing craft unit	160	Naval Ammunition Support Detachment Fire fighting
111	Camp Garcia LCU	161	Naval Ammunition Support Detachment Fire training
112	Camp Garcia motor pool	162	Naval Ammunition Support Detachment Firefighter
113	Camp Garcia nozzle	163	Naval Ammunition Support Detachment Firefighting
114	Camp Garcia PFAS	164	Naval Ammunition Support Detachment Foam
115	Camp Garcia PFOA	165	Naval Ammunition Support Detachment hangar
116	Camp Garcia PFOS	166	Naval Ammunition Support Detachment helicopter
117	Camp Garcia pump house	167	Naval Ammunition Support Detachment helipad
118	Camp Garcia runway	168	Naval Ammunition Support Detachment helo
119	Camp Garcia suppressant	169	Naval Ammunition Support Detachment Landing craft unit
120	Camp Garcia suppression	170	Naval Ammunition Support Detachment LCU
121	Camp Garcia training	171	Naval Ammunition Support Detachment motor pool
122	NASD	172	Naval Ammunition Support Detachment nozzle
123	NASD AFFF	173	Naval Ammunition Support Detachment PFAS
124	NASD AFFF handling area(s)	174	Naval Ammunition Support Detachment PFOA
125	NASD AFFF storage	175	Naval Ammunition Support Detachment PFOS
126	NASD Airfield crash	176	Naval Ammunition Support Detachment pump house
127	NASD ansulite	177	Naval Ammunition Support Detachment runway
128	NASD electroplate	178	Naval Ammunition Support Detachment suppressant
129	NASD electroplating	179	Naval Ammunition Support Detachment suppression
130	NASD Fire fighting	180	Naval Ammunition Support Detachment training
131	NASD Fire Navy Airfield crash	181	Vieques AFFF
132	NASD Fire training	182	Vieques AFFF handling areas
133	NASD Firefighter	183	Vieques AFFF storage
134	NASD Firefighting	184	Vieques Airfield crash
135	NASD Foam	185	Vieques ansulite
136	NASD hangar	186	Vieques electroplate
137	NASD helicopter	187	Vieques electroplating
138	NASD helipad	188	Vieques Fire fighting
139	NASD helo	189	Vieques Fire training
140	NASD Landing craft unit	190	Vieques Firefighter
141	NASD LCU	191	Vieques Firefighting
142	NASD motor pool	192	Vieques Foam
143	NASD nozzle	193	Vieques hangar
144	NASD PFAS	194	Vieques helicopter
145	NASD PFOA	195	Vieques helipad
146	NASD PFOS	196	Vieques helo
147	NASD Puerto Rico	197	Vieques Landing craft unit
148	NASD pump house	198	Vieques LCU
149	NASD runway	199	Vieques motor pool
150	NASD suppressant	200	Vieques Navy Airfield crash

Table 3-2. Search Criteria*Preliminary Assessment for PFAS**Former NASD and VNTR, Vieques, Puerto Rico*

	Search Terms	Search Terms
201	Vieques nozzle	
202	Vieques PFAS	
203	Vieques PFOA	
204	Vieques PFOS	
205	Vieques pump house	
206	Vieques runway	
207	Vieques suppressant	
208	Vieques suppression	
209	Vieques training	
210	VNTR AFFF	
211	VNTR AFFF handling area(s)	
212	VNTR AFFF storage	
213	VNTR Airfield crash	
214	VNTR ansulite	
215	VNTR electroplate	
216	VNTR electroplating	
217	VNTR Fire fighting	
218	VNTR Fire training	
219	VNTR Firefighter	
220	VNTR Firefighting	
221	VNTR Foam	
222	VNTR hangar	
223	VNTR helicopter	
224	VNTR helipad	
225	VNTR helo	
226	VNTR Landing craft unit	
227	VNTR LCU	
228	VNTR motor pool	
229	VNTR Navy Airfield crash	
230	VNTR nozzle	
231	VNTR PFAS	
232	VNTR PFOA	
233	VNTR PFOS	
234	VNTR pump house	
235	VNTR runway	
236	VNTR suppressant	
237	VNTR suppression	
238	VNTR training	

Note: An internet search using the search terms (keywords) in this table produced no historical documentation relevant to the Vieques PFAS PA.

Findings and Recommendations

Table 4-1 provides a list of types of potential PFAS source areas at typical Navy facilities and, for those potentially applicable to the former NASD and/or former VNTR, identifies whether evidence suggests the area is a potential PFAS source/release area warranting further evaluation as per the Consistency Instruction for Navy Preliminary Assessments for Per- and Polyfluoroalkyl Substances (Navy, 2018). Areas identified as potential PFAS source areas for additional consideration are shown on **Figures 2-2 and 2-3** and evaluated in Sections 4.1 through 4.10.

Table 4-1 identifies each site with a Yes, Unlikely, or No in regard to the potential for the site being a PFAS source area. The Unlikely designation is a result of information compiled during this Preliminary Assessment and indicates an AFFF/PFAS release in this area was unlikely. However, based on the tiered characterization approach concurred upon by the Navy and regulatory agencies during the December 5, 2019 Technical Subcommittee Meeting, following evaluation of data collected from the “tier 1” areas (i.e., those with “Yes” entries in this table), the agencies will reconvene to discuss whether conclusions drawn for other sites remain valid or whether any additional characterization is warranted, including whether any additional sites/areas should be considered as a potential PFAS sources.

4.1 NASD AOC H: Former Power Plant/Former Fire Training Area

4.1.1 Description and Operational History

AOC H, the former power plant, is located about 200 feet east of the entrance to the Municipality of Vieques (MOV) public works area just north of Highway 200 and south of Vieques Passage (**Figures 2-2 and 4-1, and Appendix A and Appendix E**). AOC H is approximately 0.5 acre and consists of an abandoned concrete building (Building 13, **Appendix A**) approximately 80 feet long and 25 feet wide. An ephemeral stream is located along the western portion of the site. The surrounding area is uninhabited and is heavily vegetated.

From 1941 to 1943 power generation equipment was stored in and around Building 13, including large diesel generators used to provide electricity to a nearby community. After 1943, the building was vacant until the 1960s when its use for fire training operations began. Fire training operations consisted of the use of diesel fuel, which was poured over rubber tires inside the building and ignited to simulate structural fires and extinguished during training operations. The fire training activities ceased in the 1980s. The power generation equipment and rubber tires are no longer present at the site (NAVFAC, 2008).

4.1.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no definitive evidence of use or disposal of AFFF or other PFAS-containing substances at AOC H. However, because firefighting training was conducted after 1970 and use of AFFF could not be ruled out because it was reportedly present on fire trucks, PFAS may have been released at AOC H if AFFF was used there.

4.1.3 Potentially Impacted Media

If a release of AFFF occurred at AOC H, it likely would have been washed outside through building openings (or potentially infiltrated through the cement floor), impacting surface soil initially, but migrating vertically through approximately 15 feet of unconsolidated clay, silt, sand, and gravel toward/into groundwater. It may also have traveled via overland runoff toward the Vieques Passage to the north and/or ephemeral stream along the western site boundary; the ephemeral stream discharges to the Vieques Passage to the north. The groundwater flow direction at AOC H is predominantly to the north-northwest toward the Vieques Passage (**Figure 4-1**). Historical groundwater elevation data indicate groundwater does not discharge to the ephemeral stream, at least along AOC H.

4.1.4 Recommendation

Based on historical use of the former power plant for firefighting training after 1970, AFFF may have been used in training at AOC H. With uncertainties about the exact timeframe in which AFFF may have been present on Vieques, the possibility exists that AFFF may have been discharged during firefighting training at this site. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP that includes the rationale for investigation, conceptual site model of potential release and exposure, investigation approach, and data use, including risk evaluation. The investigation approach will address the receptor scenarios defined in the Sections 2.3.2 and 2.3.3 and be consistent with those described in the Master Human Health Risk Assessment (HHRA) and Master ERA Protocols (CH2M, 2018), as applicable to the site and as modified, if necessary, to account for new PFAS screening levels/protocol that have been promulgated or otherwise adopted industry-wide.

4.2 NASD Former Fire Station Building 2046 at the Public Works Area

4.2.1 Description and Operational History

The former fire station (Building 2046) is located within the MOV Public Works compound as seen in **Figures 2-2 and 4-2** and shown in photographs in **Appendix E**. The building was constructed in 1972 and was used as a fire station until the NASD was decommissioned in 2000. No maintenance was conducted inside the building, and storage sheds southwest of the building contained hoses and fire extinguishers, but no hazardous materials were observed. Storage sheds, although described in the Environmental Baseline Survey (EBS) (PMC, 2000), have not been located or observed on historical imagery. Currently, the fire station is being converted into a rum distillery and contains no stored AFFF. The surrounding area is uninhabited and is an open grassland with sparse tree presence.

4.2.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no definitive evidence of a release of AFFF or other PFAS-containing substances at the former fire station. However, information obtained during an interview suggest there is the potential AFFF was released to the environment in this area. Information obtained during an interview indicated that approximately 50 gallons of AFFF had been stored on each of two fire trucks. According to the interviewee, the AFFF concentrate was stored in 5-gallon containers in an onsite Conex located less than 100 feet southwest of the fire station. AFFF was put into the fire trucks by pumping, pouring or by induction pump on the ramp of the fire station; fire trucks were also washed on this ramp. Once a month the fire trucks tanks containing AFFF were cleaned, and the pump tests were performed once a year; however, the interviewee indicated that no foam (AFFF) was used for pump testing. No disposal records for the AFFF were identified. Given likely truck cleaning procedures and that no disposal records for AFFF were identified, it is likely flushing occurred onto the ramp during cleaning.

4.2.3 Potentially Impacted Media

If a release of AFFF occurred during storage or while transferring AFFF or cleaning the fire trucks at the fire station, it likely would have infiltrated through the surface and subsurface soil toward/to groundwater. There are no wells or geologic descriptions of the area directly around the former fire station; however, wells constructed at nearby AOC E (**Figure 4-2**) provide insight to the subsurface characteristics below the fire house. AOC E sits atop unconsolidated clay and sandy clay, with a 5- to 15-foot thick bed of poorly sorted silt to silty/clayey fine to coarse sand. At AOC E the water table tends to stay below the basal sandy layer, occasionally rising into the sandy layer. Below the overburden the structure changes to a clay-rich saprolite (CH2M, 2008c). The primary direction of groundwater flow at AOC E is to the north-northwest toward the Vieques Passage. It is assumed that because of the close proximity of AOC E to the former fire station and that the elevation to the south increases dramatically,

the groundwater flow from the fire station would be comparable to that at AOC E. Surface water (overland flow) would also flow toward the north.

4.2.4 Recommendation

Based on historical use of the former fire station area and an interviewee account, AFFF may have been stored around this area. With uncertainties about the exact timeframe in which AFFF may have been present on Vieques, the possibility exists that the AFFF may have been discharged during AFFF transfer and cleaning at this site. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.3 Potential Former NASD Motor Pool Area

4.3.1 Description and Operational History

A former firefighter at NASD identified the former NASD motor pool area in the eastern-most area of the MOV Public Works compound, where a current motor pool is being operated by the MOV for its government vehicles (**Figures 2-2 and 4-3** and **Appendix E**). The EBS (PMC, 2000) identifies the building at this location as Building 2022, an electrical plumbing and carpentry shop, not a motor pool. The building was constructed in 1966 and has been in continuous operation since Naval transfer of the property to the MOV. The surrounding area is uninhabited but is actively utilized. The ground cover is grass, concreted areas, access roadways and gravel areas with some tree presence.

4.3.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no definitive evidence of a release of AFFF or other PFAS-containing substances at the potential motor pool. Information obtained during the interview (**Appendix D**) indicated the site was utilized as a vehicle maintenance area for NASD fire trucks and other vehicles. Therefore, there is a potential that AFFF releases from the fire trucks during maintenance procedures occurred if AFFF was aboard the trucks; there are no known spill or disposal records for this activity.

4.3.3 Potentially Impacted Media

If a release of AFFF occurred at the motor pool, it likely would have infiltrated through the surface and subsurface soil toward/to groundwater. This area is immediately adjacent to AOC E, so the discussion regarding surface water and subsurface geology and hydrogeology in Section 4.2.3 applies here as well.

4.3.4 Recommendation

Based on the interviewee account of the area being used for fire truck maintenance, AFFF, if present, may have been discharged during maintenance at this site. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.4 NASD AOC B: Former Wastewater Treatment Plant

4.4.1 Description and Operational History

AOC B is a pre-fabricated former WWTP with aeration and separation tanks, that was operational from 1983 until 2000. The WWTP primarily consisted of four lagoons with no surface water discharge (PMC, 2000). Sludge from the treatment plant was pumped to a vacuum truck for offsite disposal (Kearney et. al., 1988). While the Phase II RFA Report does not provide a final disposition location of solids generated at AOC B, the SI/Expanded Site Inspection (ESI) Report (CH2M, 2010a) indicates solids from the SWMU 10 settling tank were pumped out and transported to drying beds at the former NSRR (currently NAPR). It is reasonable to assume the same was done for the solids removed from AOC B. The site is located 330 feet northwest of the former fire station (**Figures 2-2 and 4-2** and **Appendix E**). The WWTP is no longer operational. The surrounding area is uninhabited and is an open grassland with sparse tree presence.

4.4.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no evidence of a release of AFFF or other PFAS-containing substances into or at the former WWTP. However, because AOC B became operational in 1983, during the time when Navy use of AFFF and other PFAS-containing materials was occurring (though not necessarily on Vieques) and because PFAS have the potential to accumulate in wastewater sludge and liquid waste, PFAS may have been released to the WWTP if AFFF or other PFAS-containing materials were used at the facility.

4.4.3 Potentially Impacted Media

If a release of AFFF or other PFAS-containing constituents occurred at AOC B, it likely would have infiltrated through the sediment and subsurface soil within the WWTP lagoons toward/to the underlying groundwater. This area is adjacent to AOC E, so the discussion regarding surface water and subsurface geology and hydrogeology in Section 4.2.3 applies here as well.

4.4.4 Recommendation

While there is no evidence AFFF or other PFAS-containing materials were disposed of through the treatment system, because no records were found regarding disposal of industrial wastewater generated at the main operations area, and because of the types of activities that took place in the main operations area, industrial-type wastewater could have been processed through this WWTP. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.5 Potential Former VNTR Motor Pool Area (including Building 340) and Former Fire Department Building 330

4.5.1 Description and Operational History

A map of unknown origin (**Figure 4-4**, CH2M, 2008b) indicates that Building 330 was the Camp Garcia Fire Department building. One interviewee identified on a map (indicated on **Figure 4-5** and **Appendix E**) the possible motor pool area where the fire trucks were serviced. The EBS (NAVFAC, 2003) identifies no building or parking area (past or present) at the location indicated by the interviewee. Building 330 (no longer present) was located adjacent (to the north) to where the interviewee marked the location of the motor pool area. No historical information has been found regarding the use of Building 340 (shown in **Figure 4-5**, but no longer present). However, given its close proximity to the former fire department building (Building 330) and that historical imagery shows no structure in the area referred to by the interviewee, it is possible Building 340 was associated with the motor pool. The surrounding area is uninhabited but is actively utilized as a parking area and is an open grassland with some gravel areas and sparse trees.

4.5.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no evidence of a release of AFFF or other PFAS-containing substances at the possible motor pool (area south of former Building 330 and/or area of former Building 340). However, information obtained from an interviewee (**Appendix D**) indicated fire trucks in Vieques were equipped with AFFF. Therefore, there is a potential that AFFF releases from fire trucks during maintenance procedures or AFFF transfer occurred; there are no known spill or disposal records for this activity.

4.5.3 Potentially Impacted Media

If a release of AFFF occurred at the motor pool (fire truck maintenance area) or former fire department building (Building 330), it likely would have infiltrated through the surface and subsurface soil toward/to groundwater. The former fire department building and fire truck maintenance area is located within the confines of Camp Garcia, which studies have shown is underlain by 0 to 4 feet of unconsolidated clayey gravel alluvium overlying late Cretaceous to Eocene aged plutonic rock made up largely of granodiorite and quartz diorite. Groundwater flow in

the fractured rock in the vicinity of Camp Garcia is generally south toward the Caribbean Sea (**Figure 4-5**). Surface water flow in this area would be toward the southeast before turning toward the south.

4.5.4 Recommendation

Based on historical use of the former fire station area and an interviewee account about use and maintenance of fire trucks, AFFF may have been present at this area. With uncertainties about the exact timeframe in which AFFF may have been present on Vieques, the possibility exists that the AFFF may have been discharged during transfer and maintenance. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.6 VNTR PAOC K: Former Camp Garcia Wash Rack

4.6.1 Description and Operational History

Potential Area of Concern (PAOC) K, a former wash rack area, is located west of Camp Garcia current buildings (**Figures 2-3 and 4-5**) but outside the fenced area. Prior to being demolished before 1980, this area served as a vehicle wash rack. Currently, the area is heavily wooded and has dense vegetation. According to reports (CH2M, 2008b; CH2M, 2010b) the site is a gently sloping site to the southwest.

An investigation was performed at PAOC K during a PA/SI in 2006 (CH2M, 2008b), which evaluated potential releases to soil and groundwater and determined a release had not occurred. The site was therefore included in a No Action/No Further Action Decision Document (CH2M, 2010b). However, the PA/SI did not include evaluation of a potential PFAS release.

4.6.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no evidence or indication AFFF or other PFAS-containing substances were disposed of or utilized at PAOC K. Although no record of washing fire trucks at this wash rack were found, if fire trucks were washed there, it is possible AFFF could have been released during washing.

4.6.3 Potentially Impacted Media

PAOC K is underlain primarily by a Quaternary age (Qa) alluvial deposit comprising sand with silt, clay and gravel overlying a granodiorite or quartz diorite pluton. Groundwater is primarily within fractures of the bedrock and flows south toward the coast and the Caribbean Sea. There are no ephemeral streams or other surface water bodies within or near the site; the closest downgradient surface water bodies are Bahía Corcho and Bahía Tapón, less than one mile to the south and southeast, respectively.

If a release of AFFF or other PFAS-containing constituents occurred on site, it likely would have infiltrated through the surface and subsurface soil to the underlying groundwater. Based on the gently-sloping topography at the site, overland transport of PFAS would not likely have been significant. If a release of AFFF or PFAS occurred and it reached groundwater, it likely would have migrated with groundwater flow in a southeasterly to southerly direction.

4.6.4 Recommendation

While there is no record or indication that AFFF or PFAS-containing materials were utilized or disposed of at PAOC K, because AFFF was reportedly present at the base aboard the fire trucks, the proximity of this area to the fire station and maintenance area at Camp Garcia, the timeframe during which the fire trucks periodically would have been stationed at Camp Garcia, the potential for release of AFFF at this site exists. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.7 VNTR SWMU 10 and VNTR AOC G: Former Sewage Treatment Lagoons and Chlorination Building

4.7.1 Description and Operational History

Solid Waste Management Unit (SWMU) 10 is the former Camp Garcia sewage treatment lagoons located approximately one-half mile southeast of the main Camp Garcia Compound (**Figures 2-3 and 4-6 and Appendix E**, the large outlined area) and north of the Caribbean Sea (via Bahía Tapón). The surrounding area is uninhabited and is heavily vegetated. The original domestic sewage treatment lagoons for Camp Garcia went into service in the early 1950s. The facility consisted of four unlined lagoons, two of them serving as receiving/equalization lagoons, and the other two providing polishing treatment. Historically, the raw wastewater discharge to the lagoon system originated from the Camp Garcia area (NAVFAC, 2003). Effluent from the final two polishing lagoons was chlorinated in a chlorine contact chamber (AOC G). The 1988 and 1995 RCRA Facility Assessments (RFAs) indicated that the effluent from the final lagoons was discharged to the land (Kearney et al., 1988; PREQB, 1995b). A historical report (ERI, 2000) noted probable piping leading from the chlorination building to a series of linear ground scars and ditches. Although it is possible that wastewater was discharged to the ground surface following chlorination, the Current Conditions Report indicated the effluent from the final polishing lagoons was chlorinated in the chlorine contact chamber and then discharged to the sea (CH2M, 2001). This information was corroborated by an interview with the former Water Program Manager, NAPR Environmental Division (CH2M, 2010a).

In 1974, after the level of activity and associated domestic wastewater generation rate significantly decreased at Camp Garcia, the treatment lagoons were lined using a 2-foot compacted clay and plastic liner to create a no-discharge system. The lagoons were then utilized as evaporation lagoons until the new no-discharge lagoon was constructed in September 2000 immediately northwest from the old lagoons. During a February 2000 site visit by the EPA and Navy, it was noted that the four old lagoons were not active (CH2M, 2001). No historical documentation was found stating the lagoons were covered with soil fill once they became inactive and sampling conducted as part of the Phase I RCRA Facility Investigation and Expanded Site Inspection indicated the surficial material within the former lagoons was historical sludge (CH2M, 2010a). The replacement lagoon encompassed an area of approximately 40,000 square feet and was constructed with a clay and plastic liner and used only as an evaporation lagoon. This lagoon received only liquid sanitary waste; a settling tank was used to remove solids from the waste stream prior to effluent discharge to the lagoon (CH2M, 2010a). In April 2019, the former Water Operations Manager for the former NSRR, Puerto Rico, Base Operations Contractor was asked about the disposition of solids removed from the SWMU 10 settling tank and he stated that the solids were pumped out of the settling tank and transported to the drying beds at the former NSRR for final processing and disposal. The new lagoon was decommissioned, and the area filled in with soil from the berms, when the property transfer occurred in May 2003, and all sanitary effluent was discontinued from Camp Garcia at that time (CH2M, 2010a). While it is recognized media at the site were not sampled for PFAS-related constituents, surface soil, subsurface soil, and groundwater samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, herbicides, polychlorinated biphenyls (PCBs), inorganics, and explosives including perchlorate. The results indicated that it is unlikely a CERCLA-related release of these chemicals occurred at the site or, if a CERCLA-related release of these chemicals did occur, it did not result in contamination of soil or groundwater at concentrations posing an unacceptable risk to human or ecological receptors, leaching concern for groundwater, or MCL exceedance. However, PFAS chemicals were not part of historical investigations.

AOC G was the chlorination building at the sewage lagoons for Camp Garcia and was located directly south of the old sewage treatment lagoons SWMU 10. The site consists of a single structure that housed a pump station and chlorination equipment used in the past for the chlorination of the lagoon system effluent. These facilities were placed into operation in the 1950s and were decommissioned by 2000. The building is constructed of concrete blocks and is built partially below grade. During the 1995 RFA, stains were visible on the concrete floor in the building, reportedly as a result of wastewater overflows. No signs of vegetation stress or staining were apparent

in the grassy area surrounding the building (PREQB, 1995a). While it is recognized media at the site were not sampled for PFAS-related constituents, surface soil and subsurface soil samples were analyzed for VOCs, SVOCs, pesticides, herbicides, PCBs, inorganics, and explosives including perchlorate.

The results indicated that it is unlikely a CERCLA-related release of these chemicals occurred at the site or, if a CERCLA-related release of these chemicals did occur, it did not result in contamination of soil or groundwater at concentrations posing an unacceptable risk to human or ecological receptors, leaching concern for groundwater, or MCL exceedance. However, PFAS chemicals were not part of historical investigations

. The location of AOC G is shown in the 1970 aerial photograph **Figures 2-3 and 4-6**, the small box within the larger outline, and the insert photograph showing the current disposition of the old chlorination building as the foundation with mixing chambers, the only remaining remnant.

4.7.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no evidence of a release of AFFF or other PFAS-containing substances into or at SWMU 10 or AOC G. However, because SWMU 10 and AOC G were operational during the time when Navy use of PFAS-containing materials was occurring and because PFAS have the potential to accumulate in wastewater sludge and liquid waste, PFAS could have been released to the lagoons/chlorination building if AFFF or other PFAS-containing materials were used.

4.7.3 Potentially Impacted Media

If a release of AFFF or other PFAS-containing constituents occurred into the lagoons at SWMU 10 prior to 1974, it likely would have infiltrated into the subsurface soil and toward/to the underlying groundwater within the site as well as been released onto drying fields. If a release of AFFF or other PFAS containing constituents occurred after 1974, the vertical migration would have been stopped by the plastic liner at the bottom of the lagoon provided that there were no leaks. Soils within the lagoons above the liner (to approximately 3.6 feet below ground surface [bgs]) consisted of poorly graded sand and poorly graded sand with clay. Soils below the lagoon liner consisted of lean clay and poorly graded sand to refusal at 1.2 to 3.6 feet bgs. Native soil adjacent to the lagoons and at AOC G consists of up to unconsolidated sand and silty-sand. Saprolitic granodiorite and quartz diorite of the same type and make up as described in Section 4.5.3 occur between 20 and 25 feet bgs. Groundwater occurs between approximately 32 and 39 feet bgs within the fractured saprolitic basement rock, and appears to be semi-confined (CH2M, 2010a). Groundwater flow in the partially confined fractured rock is generally south to southeast toward the Caribbean Sea. Surface water flow is generally to the south-southeast toward the Caribbean Sea.

4.7.4 Recommendation

While no evidence was found during this PA that AFFF or other PFAS-containing materials were disposed of through the treatment system, because no records were found regarding disposal of industrial wastewater generated at Camp Garcia, and because of the types of activities that took place at Camp Garcia, it is recognized that industrial-type wastewater could have been processed through this treatment system. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.8 NASD SWMU 6: Former Mangrove Disposal Site

4.8.1 Description and Operational History

SWMU 6 was used for disposal of solid waste from Navy operations within the former NASD during the 1960s and 1970s. Waste materials extended approximately 100 feet to 120 feet north-northeast of Highway 200 from the east side of the Laguna Kiani Bridge (**Figure 4-7**). Waste discarded at the site included empty containers of lubricants, oils, solvents, and paints, broken glass, rubble, wood, tires, and scrap metal (PMC, 2000). The site was estimated to have contained approximately 800 cubic yards of debris, including approximately 6,400 pounds of potentially hazardous material (PMC, 2000); the debris was the focus of a 2009 non-time-critical removal action

(NTCRA; Shaw, 2010). Currently, the site is a shallow estuarine lagoon and the surrounding area is uninhabited and heavily vegetated.

4.8.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no evidence or indication AFFF or other PFAS-containing substances were disposed of at SWMU 6. However, one interviewee indicated AFFF was present at the former training facility and no disposal records were located. Consequently, it is possible AFFF or other PFAS-containing materials were disposed at SWMU 6, in which case PFAS could have been released from the waste.

4.8.3 Potentially Impacted Media

The topography at SWMU 6 is characterized by relatively flat, swampy, tidal marsh areas. The Kiani Lagoon surface water to the north and south of the site is directly connected to Vieques Passage. Water from the lagoons rises and falls with the tides and at times covers portions of the site. The site is located at elevations between sea level and 1 foot above mean sea level (msl) (**Figure 4-7**). If a release of AFFF or other PFAS-containing constituents occurred from the waste (when present), it likely would have leached into groundwater and into the marsh surface water and either transported to the Vieques Passage or deposited into the sediments of the tidal marsh.

4.8.4 Recommendation

While there is no record or indication that AFFF or PFAS-containing materials were disposed of in SWMU 6, because AFFF was reportedly present at the base and other PFAS-containing materials may have been used, and because of the timeframe during which waste was being deposited at SWMU 6, the potential for disposal of empty drums of AFFF and containers of other PFAS-containing materials at the site exists. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.9 NASD SWMU 7: Former Quebrada Disposal Site

4.9.1 Description and Operational History

The disposal site was used by the Navy from the early 1960s until the late 1970s. Discarded material included old tires, sheet metal, empty containers such as drums, cans, and bottles, used batteries, and construction rubble (PMC, 2000). The site was estimated to have contained approximately 1,500 cubic yards of debris; the debris was the focus of a 2009 NTCRA (Shaw, 2010). Currently, the area is uninhabited and is heavily vegetated.

4.9.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no evidence or indication AFFF or other PFAS-containing substances were disposed of at SWMU 7. However, one interviewee indicated AFFF was present at the former training facility and no disposal records were located. Consequently, it is possible AFFF or other PFAS-containing materials were disposed at SWMU 7, in which case PFAS could have been released from the waste.

4.9.3 Potentially Impacted Media

SWMU 7 is located within an ephemeral stream area. The site sits in a natural valley that descends to Highway 200 (**Figure 4-8**). The soil profile as described in the RI Report (CH2M, 2008a) indicates a shallow profile of 1.5 feet bgs to 4 feet bgs before it grades into saprolite from granodiorite. Groundwater appears to be semi-confined and flows north toward the Vieques Passage. Surface water flows toward the ephemeral stream from the valley walls then north down the valley toward Highway 200. If a release of AFFF or other PFAS-containing constituents occurred from the waste (when present), it likely would have flowed down-valley with periodic flow associated with rain events or infiltrated through the subsurface soil within and beneath the debris toward/to the underlying saprolite and fractured rock. If a release of AFFF or PFAS-containing constituents occurred and it reached groundwater, it likely would have migrated with groundwater flow in a northerly direction toward the Vieques Passage.

4.9.4 Recommendation

While there is no record or indication that AFFF or PFAS-containing materials were disposed of in SWMU 7, because AFFF was reportedly present at the base and other PFAS-containing materials may have been used, and because of the timeframe during which waste was being deposited at SWMU 7, the potential for disposal of empty drums of AFFF and containers of other PFAS-containing materials at the site exists. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.10 VNTR SWMU 1: Former Camp Garcia Municipal Solid Waste Management Unit (Landfill)

4.10.1 Description and Operational History

SWMU 1 is located approximately 4,000 feet northwest of Playa La Chiva (Blue Beach), roughly a mile east of the Camp Garcia Compound Area (**Figures 2-3 and 4-9**). The surrounding area is uninhabited and is heavily vegetated with some access roads that are paved or graveled. The entire site is bound by a cyclone fence with locked gated access points. SWMU 1 was an unlined landfill in operation from approximately 1954 to 1978 (Greenleaf et al., 1984). During the time the landfill was in active operation, it was reportedly used for the disposal of municipal waste (paper, corrugated containers, cans and food packaging material, rags, wood, scrap metal, and yard debris). Test pits excavated throughout the landfill confirmed this type of waste is present, along with other types of material consistent with municipal-type debris; however, several munitions-related items were also observed (CH2M, 2010a).

One 5-ton dump truck was used every day, 5 days per week, to transport waste to this site (NAVFAC, 2003). No hazardous materials reportedly were placed in this disposal area (Greenleaf et al., 1984). From 1954 through 1978, the landfill serviced an average population of 150 individuals stationed at Camp Garcia. This number experienced short-term increases during maneuvers and other military exercises. According to the 1995 RFA, approximately 1,800 to 3,120 tons of waste was disposed of in the landfill (PREQB, 1995a).

During its operation, the trench method of disposal was employed, and land clearing was kept to a minimum to minimize erosion potential. 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. A final 2-foot-thick soil cover was placed over the trench (Greenleaf et al., 1984). When operation of the SWMU 1 landfill ceased in 1978, a cover consisting of compacted native soils was installed (NAVFAC, 2003). A Record of Decision (ROD) was signed in 2011 (NAVFAC, 2011) to cover any exposed debris, but later it was determined that a greater amount of surface debris was present across the landfill than was originally anticipated. Therefore, a ROD Explanation of Significant Differences was prepared (NAVFAC, 2016) that called for the removal of the surface debris and allowing the landfill vegetation to naturally regrow.

4.10.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no evidence or indication AFFF or other PFAS-containing substances were disposed of at SWMU 1. However, one interviewee indicated AFFF was present at the former training facility and no disposal records were located. Consequently, it is possible AFFF or other PFAS-containing materials were disposed in the landfill, in which case PFAS could have been released from the landfilled waste.

4.10.3 Potentially Impacted Media

SWMU 1 is a geologically and geomorphologically complex area. The site sits in a natural south by southeast valley that gradually descends to Laguna La Chiva (**Figure 4-9**). Toward the northern end of the valley, the geology below the overburden is made up of Cretaceous aged andesite exposed in some locations. This andesite was intruded into by the late Cretaceous to Eocene granodiorite/quartz diorite pluton (USGS, 1989) that is presented in

locations to the south and the valley walls. The overburden comprises unconsolidated alluvium of sand, clay, silt, and gravel from ground surface to about 35 feet underlain by saprolite. During significant rain events that exceed the retention capacity of the vegetation and infiltration rate of the unsaturated soil, surface water on the site flows toward ephemeral streams at SWMU 1, primarily the ephemeral stream that bisects the valley in which SWMU 1 is located. This ephemeral streambed's gradient is south by southeast toward Laguna La Chiva several thousand feet to the south of SWMU 1.

If a release of AFFF or other PFAS-containing constituents occurred from the landfilled waste, it likely would have infiltrated through the subsurface soil within and beneath the landfill toward/to the underlying saprolite and fractured rock. Because overland-flow and flow through the ephemeral stream would not have encountered surficial waste following its removal in 2015, surficial transport of PFAS (if present) would not have been likely since that time. However, during the time debris was exposed on the landfill surface, if AFFF or other PFAS-containing materials occurred on the surface of the landfill, surficial transport of PFAS could have occurred. Under these circumstances, if soil containing PFAS was deposited in the ephemeral stream, PFAS could have partitioned to surface water. However, if a release of AFFF or PFAS occurred and it reached groundwater, it likely would migrate with groundwater flow in a southeasterly direction toward the coast.

4.10.4 Recommendation

While there is no record or indication that AFFF or PFAS-containing materials were disposed of at SWMU 1, because AFFF was reportedly present at the base and other PFAS-containing materials may have been used, and because of the timeframe during which waste was being disposed of at SWMU 1, the potential for disposal of empty drums of AFFF and containers of other PFAS-containing materials at the site exists. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.11 VNTR Camp Garcia Runway

4.11.1 Description and Operational History

The 2003 EBS (NAVFAC, 2003) describes the Camp Garcia Runway (**Figures 2-3 and 4-10**) as being active from 1959 to 1964. However, documented air operations still occurred at the airfield annually with the last noted flights recorded in 1975 (**Appendix C**). 1977 Federal Aviation Administration Terminal Area Charts (TACs) show the runway as an east west (08-26) 5000-foot paved runway with no permanent structures. The TAC for Puerto Rico from October 10, 2019, shows the airfield is permanently closed. One interviewee interviewed during the PFAS PA indicated that "fire trucks were used to support operations at the two Vieques helicopter pads, but not at the airfield." The former runway is surrounded by dense vegetation and has an adjacent surface water drainage area (PI 5; see Section 4.12).

4.11.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no evidence or indication AFFF or other PFAS-containing substances were disposed of or used at the Camp Garcia Runway. The area was active primarily between 1959 to 1964, with subsequent annual use until 1975. As noted in Section 1.2, AFFF containing PFAS was developed in the 1960s for use on Class B fires (i.e., fires in flammable liquids or vapors), but was not put into routine use until the early 1970s following the November 1969 issuance of a MILSPEC that described characteristics AFFF needed to demonstrate in order to be used by the military, including a requirement for formulations containing PFAS. Although there are no known records of AFFF use or demonstration at the Camp Garcia Runway, the runway was reportedly still in periodic use during a time when AFFF containing PFAS was reportedly in use by the Navy.

4.11.3 Potentially Impacted Media

During the period the runway was active, any AFFF sprayed onto the runway that did not evaporate would likely have flowed southward across the runway into the drainage area (PI 5). It is also possible that some infiltration

into/through the runway could have occurred, primarily through cracks if present. If release to soil within the drainage area, AFFF could flow downgradient along the drainage features with precipitation and/or migrated vertically toward groundwater.

Soils encountered at PI 5 are sand, silt, silty sand, and sandy silt. It is expected that the soil below the runway is consistent with that found within PI 5, which is underlain by Qa alluvial deposits that is underlain by a granodiorite and quartz diorite pluton, as described at other locations.

Groundwater along the runway is expected to be between 25 and 40 feet bgs (based on data from nearby SWMU 20) and likely becomes shallower south of the runway. While there are no perennial surface water bodies at or adjacent to the runway, PI 5 is an ephemeral feature that conveys water during periods of heavy rainfall. In this manner, coupled with other ephemeral streams along the runway as well as the general topography, surface water from the runway area that does not infiltrate into the subsurface can be conveyed southward toward the ocean (**Figure 4-10**).

4.11.4 4.10.4 Recommendation

While there is no record or indication that PFAS-containing AFFF was used at the former Camp Garcia Runway, because runway use (at least periodic) occurred during the timeframe when AFFF was in use Navy-wide for firefighting, the potential for AFFF use, testing, or demonstration at the former runway exists. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.12 VNTR PI 5: Surface Water Drainage Area from Camp Garcia Runway (down gradient)

4.12.1 Description and Operational History

The PI 5 drainage area is a feature on the south (downgradient) side of the former Camp Garcia Runway (**Figures 2-3 and 4-10**). Drainage ditches within PI 5 lead from the airfield south to Puerto Ferro (NAVFAC, 2003). Its relevant operational history would mirror that of the former Camp Garcia Runway (Section 4.11). Currently, the area is uninhabited and heavily vegetated.

4.12.2 Potential for PFAS Use or Release

The potential for PFAS release to PI 5 is that described for the Camp Garcia Runway in Section 4.11.2.

4.12.3 Potentially Impacted Media

The potentially impacted media is that described for the Camp Garcia Runway in Section 4.11.3.

4.12.4 Recommendation

While there is no record or indication that PFAS-containing AFFF was used at the former Camp Garcia Runway, because runway use (at least periodic) occurred during the timeframe when AFFF was in use Navy-wide for firefighting, the potential for AFFF use, testing, or demonstration at the former runway exists, in which case runoff carrying AFFF could have entered and flowed within PI 5. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

4.13 VNTR SWMU 20: Former Helicopter Maintenance Area

4.13.1 Description and Operational History

SWMU 20 (formerly PI 4) is located south of Camp Garcia and just north of the eastern end of the former Camp Garcia Runway (**Figures 2-3 and 4-10**). Historical information suggests the site was in use from 1959 to 1964

(helicopter maintenance and hangar until 1975) and included barracks, mess hall, trenched area, disturbed areas, and bermed area for storage of fuel bladders.

Investigations performed for SWMU 20 comprised a PA/SI in 2006 (CH2M, 2008b), an ESI in 2009 (CH2M, 2010a), a Supplemental ESI in 2011 (CH2M, 2011), and a Remedial Investigation (RI) in 2013 and 2014 (CH2M, 2016). These historical investigations evaluated the nature and extent of contamination in soil and groundwater and assessed the potential risks by this contamination to human health and the environment. The RI Report (CH2M, 2016) documents the cumulative investigation findings which included collecting 24 surface soil samples, 27 subsurface soil samples, and groundwater samples from 33 shallow monitoring wells and 5 deep monitoring wells. Currently, the area is uninhabited and heavily vegetated and the former helicopter maintenance building and other structures have been removed.

4.13.2 Potential for PFAS Use or Release

The document review and interview portions of this PA provided no evidence or indication AFFF or other PFAS-containing substances were disposed of or utilized at SWMU 20. One interviewee indicated that fire trucks were used to support operations at the two Vieques helicopter pads, but there was no indication they were used to support activities at the helicopter maintenance building/hangar. Further, no records were found that indicated a fire suppression system was present in the hanger or that AFFF was stored or used there. However, hangars commonly have fire suppression systems and AFFF may have been present at the base for at least a portion of the time the helicopter maintenance area/hangar was operational.

4.13.3 Potentially Impacted Media

As the site is heavily vegetated and relatively flat with no surface water features, if a release of AFFF or other PFAS-containing constituents occurred at the site, it likely would have infiltrated through the soil toward/to the underlying fractured rock, which is the water-bearing unit at the site. If a release of AFFF or PFAS occurred and it reached groundwater, it likely would have migrated with groundwater flow in a southeasterly to southerly direction toward the coast.

4.13.4 Recommendation

While there is no record or indication that AFFF or PFAS-containing materials were utilized or disposed of at SWMU 20, hangars commonly have fire suppression systems and AFFF was reportedly present at the base (although not likely at this time), the potential for use or spillage of AFFF at the site exists. Therefore, further investigation in the form of an SI is recommended for this site. The details of the SI should be included in an SI SAP, as described in Section 4.1.4.

Table 4-1. Areas Evaluated for Potential PFAS Releases

*Preliminary Assessment for PFAS
Former NASD and VNTR, Vieques, Puerto Rico*

Area	Potential PFAS Source Area? (Yes/No)	Rationale
Fire Training Areas		
NASD AOC H: Former Power Plant/Formal Fire Training Area	Yes	Site operated from 1941-1943 prior to Navy activities as a diesel generator power plant. The building stood vacant until the 1960s when it was used as fire training location until the 1980s. Rubber tires were set into the building and covered with diesel fuel to be set afire and subsequently extinguished (PMC, 2000). A summary of historical investigations for AOC H is contained in the No Action ROD (September 2008). Figure 4-1.
Fire Stations and Fire Truck Parking Areas		
NASD Former Fire Station Building 2046 at the Public Works Area	Yes	NASD Fire Station (Building 2046) may have contained AFFF in storage as well as within the trucks, machines, and pumps that may have been onsite; however, PMC (2000) indicated that no maintenance was conducted in the building. One interviewee indicated that 50 gallons of AFFF was stored on each of two fire trucks located at this site in support of the helicopter pad on NASD and the helicopter pad on VNTR. AFFF was added to the fire trucks on the ramp in front of the fire station; fire trucks were also washed on this ramp. Storage of the AFFF was reported to be in Conex containers less than 100 feet to the southwest of the main building where they kept hoses and fire extinguishers. Pump tests (yearly) and fire truck flushing (monthly) were performed (Interview with Jose Ortiz in Appendix D). Fire Station listed in EBS (PMC, 2000) (Appendix A , First page of Table B-1 from EBS). Existing building currently being converted for use by small business owner. This site has not been investigated prior this PFAS investigation. Figure 4-2.
Potential Former NASD Motor Pool Area	Yes	Maintenance was performed at the motor pool on fire trucks that contained AFFF (Interview with Jose Ortiz in Appendix D). Although there are no records or interviewee knowledge of a release during maintenance, as a conservative measure, the potential for inadvertent AFFF release during cleaning and maintenance is assumed for the purposes of the preliminary assessment. Existing area with buildings currently occupied by MOV Public Works facility, used to maintain vehicles. This site encompasses a former NASD site (SWMU 10) and a summary of historical investigations for SWMU 10 is contained in the No Further Action Report (October 2006). Figure 4-3.
Potential Former VNTR Motor Pool Area (including Building 340) and Former Fire Department Building 330	Yes	Figure 4-4 shows a hand drawn map of an unknown origin (CH2M, 2008) with Building 330 marked as "Fire Dept." Additionally, according to an interview (Appendix D), maintenance was performed at the motor pool in an area immediately adjacent to Building 330 (Figure 4-5) on the fire trucks and pumps that contained AFFF (area identified by interview with Jose Ortiz in Appendix D). No historical buildings or structures at the location were identified by the interviewee. Although there are no records or interviewee knowledge of a release during maintenance, as a conservative measure, the potential for inadvertent AFFF release during cleaning and maintenance is assumed for the purposes of the preliminary assessment. This site has not been investigated prior this PFAS investigation.
VNTR PI 5: Surface Water Drainage Area from Camp Garcia Runway	Yes	PI 5 (Figure 4-10) is identified in the EBS (NAVFA, 2003) as the surface water drainage from the runway area, historically the location of the fire department and temporary tents, and where beach matting had been installed in the past. However, this information was provided via an interview during the EBS; no other information, including historical maps (as seen in maps from 1959 to 2005 [CH2M, 2010a]) and site visits, corroborates this information. Furthermore, there are no records or interviewee knowledge of a crash, fire, fire fighting, or fire department in this area. PI 5 was sampled during the 2009 Site Inspection, during which surface and subsurface soil samples were collected throughout the drainage area (CH2M, 2010). With respect to constituents detected and their concentrations, the vast majority of non-inorganics were non-detect, none of the remaining exceeded human health or ecological screening levels, and the inorganics were wholly or primarily attributable to background; no unacceptable human health or ecological risk was found and the dataset as a whole provides a line of evidence that a fuel release or fire did not occur. Detailed evaluation of the data collected during the SI can be found in Section 10 of the SI/ESI Report (CH2M, 2010a). A summary of historical investigations for PI 5 is contained in the No Action/No Further Action Document (September 2010). Nonetheless, because evidence of use of runways for spray testing (not necessarily with AFFF) on Navy facilities was found, the Camp Garcia runway, including PI 5, has been added to the list of sites recommended for an SI.
Hangars and Other Structures with AFFF Suppression Systems (Including Tank Farms)		
N/A		No record or interviewee knowledge of structures with AFFF Suppression Systems on the former NASD or former VNTR.
Foam Retention Lagoons		
N/A		No record or interviewee knowledge of foam retention lagoons on the former NASD or former VNTR.
AFFF Storage Areas		
NASD Former Fire Station Building 2046 at the Public Works Area	Yes	See information under "Fire Stations and Fire Truck Parking Areas" above for this area.
Emergency Response Areas (Fires and Aircraft Crashes)		
N/A		No record or interviewee knowledge of fires or aircraft crashes on the former NASD or former VNTR.
AFFF Spray Test Areas		
N/A		No record or interviewee knowledge of AFFF spray test areas on the former NASD or former VNTR.
Runways, Taxiways, Maintenance Ramps, Aprons, Aircraft Fuel Purge Stations, Refueler Truck Ramp Area:		
NASD SWMU 5	No	This site was used as a disposal location for approximately 7,000 lbs (3,175kg) of Inhibited Red Fuming Nitric Acid/Mixed Amine Fuel #4 (IRFNA/MAF-4) drone fuel (PMC, 2000). SWMU 5 was investigated in 2000, including collection of soil samples for VOCs, SVOCs, and explosives. With the exception of one detection of benzo(a)pyrene (88 µg/kg), all analyses were non-detect. This constituent is not a component of IRFNA/MAF-4, however, but it is a component of asphalt and the sample was collected adjacent to an asphalt road. The former production well at AOC A (former production well for cattle, prior to Navy Ownership) was also sampled in 2000 for VOCs, SVOCs, pesticides, PCB, and inorganics. Only inorganics were detected. Based on data collected at the site during the Expanded PA/SI and the associated human health and ecological risk assessments (CH2M, 2000), no unacceptable risks were identified and no action was deemed necessary (PREQB, 2007). No record or interviewee knowledge of firefighting, firefighting training, or use of AFFF existed at the site. A summary of historical investigations for SWMU 5 is contained in the No Further Action Report (October 2006).

Table 4-1. Areas Evaluated for Potential PFAS Releases

Preliminary Assessment for PFAS
Former NASD and VNTR, Vieques, Puerto Rico

Area	Potential PFAS Source Area? (Yes/No)	Rationale
VNTR SWMU 20: Former Helicopter Maintenance Area	Yes	SWMU 20 (Figure 4-10) was used as a helicopter maintenance area and is located directly south of the Camp Garcia Helicopter pad, and is still being investigated in the Feasibility Study stage. A former building at the site was used as a helicopter maintenance shop and a large hangar (removed between 1981 and 1983 as determined by aerial photographs) with no known or recorded fire suppression system, fire, or firefighting activities. Area was reportedly active from 1959 to 1964 (helicopter maintenance and hangar until 1975) (NAVFAC, 2003), but there is no record or interviewee knowledge that AFFF was used, stored, or spilled at this location, however, due to its proximity to the airfield, SWMU 20 has been added to the recommended list.
NASD Helicopter Pad near MOV Compound	Unlikely ¹	This is a former helicopter pad near the public works area within the NASD. Based on historical records (PMC, 2000), interviews, and site reconnaissance, no crashes, fires, or fire fighting training occurred and no fire suppression system was installed, tested, used, or found, and it is not likely that PFAS-containing materials would have been associated with the activities at this site. This site has not been investigated prior this PFAS investigation.
VNTR Camp Garcia Runway	Yes	This is a historical airfield (Figure 4-10) that was used for military training operations within the VNTR that was closed around 1978. Based on historical records (NAVFAC, 2003), interviews, and site reconnaissance, no crashes, fires, or fire fighting occurred at the site, and no fire suppression system was installed, tested, used or found, and it is not likely that PFAS-containing materials would have been associated with the activities at this site. However, due to the time overlap between when AFFF was introduced to the NAVY and began use, and when the airfield closed, there is the possibility AFFF was utilized. This site has not been investigated prior this PFAS investigation.
VNTR Helicopter Pad at OP 1	Unlikely ¹	This is a former helicopter pad located at OP-1 within the VNTR. Based on historical records (NAVFAC, 2003), interviews, and site reconnaissance, no crashes, fires, or fire fighting training occurred and no fire suppression system was installed, tested, used or found, and it is not likely that PFAS-containing materials would have been associated with the activities at this site. This site has not been investigated prior this PFAS investigation.
Wastewater Treatment Plants and Associated Infrastructure		
NASD AOC B: Former Wastewater Treatment Plant	Yes	Records indicate this was the former wastewater treatment plant (WWTP) used as the primary treatment system for municipal (domestic) discharge from the main operations area of the former NASD. The WWTP operated from 1983 until 2000 and consisted of an aeration tank and separation tank for biological treatment, followed by discharge to four lagoons that had no discharge point (PMC, 2000). While it is recognized media at the site were not sampled for PFAS-related constituents, surface soil and subsurface soil samples were analyzed for VOCs, SVOCs, pesticides, herbicides, PCBs, inorganics, and explosives including perchlorate. The results indicated that it is unlikely a CERCLA-related release of these chemicals occurred at the site or, if a CERCLA-related release of these chemicals did occur, it did not result in contamination of soil or groundwater at concentrations posing an unacceptable risk to human or ecological receptors, leaching concern for groundwater, or MCL exceedance. However, PFAS chemicals were not part of historical investigations. A summary of historical investigations for AOC B is contained in the No Further Action Report (October 2006). Figure 4-2.
VNTR SWMU 10 and VNTR AOC G: Former Sewage Treatment Lagoons and Chlorination Building	Yes	SWMU 10 is the former Camp Garcia domestic sewage treatment lagoons put into service in the 1950s. The original system consisted of four unlined lagoons, two used as equalization/treatment lagoons and two as polishing lagoons, with effluent chlorinated in a chlorine contact chamber (AOC G) before discharge. In 1974, the lagoons were lined with a 2-foot compacted clay and plastic liner to become a no-discharge system. The lagoons were in use until 2000, when a new no-discharge lagoon was constructed, with clay and plastic liner, immediately northwest from the old lagoons (NAVFAC, 2003). While it is recognized media at the site were not sampled for PFAS-related constituents, surface soil and subsurface soil samples were analyzed for VOCs, SVOCs, pesticides, herbicides, PCBs, inorganics, and explosives including perchlorate. The results indicated that it is unlikely a CERCLA-related release of these chemicals occurred at the site or, if a CERCLA-related release of these chemicals did occur, it did not result in contamination of soil or groundwater at concentrations posing an unacceptable risk to human or ecological receptors, leaching concern for groundwater, or MCL exceedance. However, PFAS chemicals were not part of historical investigations. A summary of historical investigations for SWMU 10 and AOC G are contained in the No Action/No Further Action Document (September 2010). Figure 4-6.
VNTR PI 10	No	Possible leach field for a WWTP or possible sludge-drying lagoons or possible tidal lagoon. Interviewee indicated it was the site of a possible former sewage-drying lagoon. Site was inactive by 1964 (NAVFAC, 2003), prior to routine AFFF use by the Navy and unlikely the destination of PFAS-containing materials, in light of SWMU 10 being the primary Camp Garcia sewage treatment system. A summary of historical investigations for PI 10 is contained in the No Action/No Further Action Decision Document (September 2010).
VNTR PI 11	No	Pump station for seawater, sanitary wastewater outfall, and access roadway. Interviewees and records indicated that this former pump house and adjacent pipeline were used for the former wastewater treatment system and salt water supply system (NAVFAC, 2003). Photo evidence and EBS (NAVFAC, 2003) indicate site was active for only 1 year (1962), prior to routine AFFF use by the Navy and likely unassociated with any potential PFAS-containing material disposal, as described previously. Refer to a General Site Plan in Appendix A . A summary of historical investigations for PI 11 is contained in the No Action Decision Document (January 2009).
Landfills and Waste Disposal Areas		
NASD SWMU 6: Former Mangrove Disposal Site	Yes	The site is approximately 0.6 acre and was used between about 1965 and 1980 for disposal of trash that included cans of lubricants, oils, solvents, paints, rubble, wood, tires, and scrap metal, some of which appeared to have been burned. The site was estimated to have contained approximately 800 cubic yards of debris, including approximately 6,400 lbs. of potentially hazardous material (PMC, 2000); the debris was the focus of a 2009 non-time-critical removal action (NTCRA; Shaw, 2010). Although there is no history of firefighting, firefighting training, or use or disposal of AFFF or other PFAS-containing materials at the site, because an interviewee indicated AFFF was stored at the former NASD, and because of the timeframe of waste disposal at the site, the potential for disposal of empty drums of AFFF and other PFAS-containing materials at the site exists. A summary of historical investigations for SWMU 6 is contained in the No Action ROD (July 2018). Figure 4-7.

Table 4-1. Areas Evaluated for Potential PFAS Releases

*Preliminary Assessment for PFAS
Former NASD and VNTR, Vieques, Puerto Rico*

Area	Potential PFAS Source Area? (Yes/No)	Rationale
NASD SWMU 7: Former Quebrada Disposal Site	Yes	The site is approximately 10 acres and was used during the 1960s and 1970s for disposal of debris such as tires, sheet metal, empty containers (e.g., drums, cans, and bottles), used batteries, and construction rubble (PMC, 2000). The site was estimated to have contained approximately 1,500 cubic yards of debris; the debris was the focus of a 2009 NTCRA (Shaw, 2010). Although there is no history of firefighting, firefighting training, or use or disposal of AFFF or other PFAS-containing materials at the site, because an interviewee indicated AFFF was stored at the former NASD and because of the timeframe of waste disposal at the site, the potential for disposal of empty drums of AFFF and other PFAS-containing materials at the site exists. A summary of historical investigations for SWMU 7 is contained in the No Further Action ROD (September 2011). Figure 4-8.
VNTR SWMU 1: Former Camp Garcia Municipal Solid Waste Management Unit (Landfill)	Yes	Site was used as the landfill for municipal waste generated at Camp Garcia and the VNTR from 1954 through 1978 (NAVFAC, 2003). Reported use of the landfill was restricted to municipal waste, and excavated test pits confirmed the debris were consistent with the reports, with the exception of a few munitions-related items; however, because AFFF was reportedly present at the base and other PFAS-containing materials may have been used, and because of the timeframe during which the landfill was operational, the potential for disposal of empty drums of AFFF and containers of other PFAS-containing materials at the site exists. ROD signed in 2011 but later remedial action was performed removing vegetation across entire landfill and removal of all surface debris. A geophysical survey was then completed in April 2014 to refine the boundaries. A summary of historical investigations for SWMU 1 is contained in the ROD Explanation of Significant Differences (June 2016). Currently actively monitoring groundwater and land use controls are implemented. Figure 4-9.
NASD AOC J	Unlikely ¹	The site is approximately 1 acre and was used for disposal of construction-related debris from the mid-1960s to 1973 (PMC, 2000); the debris (primarily scrap metal from construction equipment, broken glass, metallic and non-metallic materials, one empty drum, a 105-mm shell casing, empty ammunition boxes, and wood) was the object of a 2009 NTCRA (Shaw, 2010). No history of firefighting, firefighting training, or use or disposal of AFFF or other PFAS-containing materials at the site. Based on historical records, interviews, and site reconnaissance, it is not likely that PFAS-containing materials, including AFFF, would have been associated with the activities at this site, especially because it was a disposal site associated with construction-related debris. Debris removed during a removal action and a summary of historical investigations for AOC J is contained in the a No Further Action ROD (September 2011).
NASD AOC R	No	The site was used as a construction staging area and public works operational area from approximately 1965 to 1971 (PMC, 2000). Several small debris piles were located at the site; the debris (railroad ties, metal pipes and other debris, wooden power poles, tires, corrugated roofing sheet material, and inert munitions-related items) was removed during a 2009 NTCRA (Shaw, 2010). No history of firefighting, firefighting training, or use or disposal of AFFF or other PFAS-containing materials at the site. Based on historical records, interviews, and site reconnaissance, it is not likely that PFAS-containing materials, including AFFF, would have been associated with the activities at this site, especially because the debris was primarily construction-related. A summary of historical investigations for AOC R is contained in the No Further Action ROD (September 2011).
VNTR SWMU 4	No	Building 303 within the Camp Garcia compound area contained small waste accumulation areas (less than a few square feet) that were in operation from the 1960s to approximately 2000. It was a spent battery accumulation area, catch basin for hydraulic oil, cleaning/degreasing basin, storage area for waste rags, absorbent material, and grease inside Building 303 (NAVFAC, 2003). Based on historical records, interviews, and site reconnaissance, there is no documentation or observation of storage or release of PFAS-containing materials and it is not likely that PFAS-containing materials would have been associated with the activities at this site. A summary of historical investigations for SWMU 4 is contained in the No Action/No Further Action Decision Document (September 2010).
VNTR SWMU 12	No	The site was used as a solid waste staging area for domestic solid wastes (galley or barracks waste) prior to transport for disposal. No waste was stored or disposed at this site; the staging units included wooden boxes and trailers, metal dumpsters, and metal cans (NAVFAC, 2003). Based on historical records, interviews, and site reconnaissance, it is not likely that PFAS-containing materials would have been associated with the activities at this site and no disposal took place at this site. A summary of historical investigations for SWMU 12 is contained in the No Action Decision Document (January 2009).
VNTR PAOC X	No	During a site visit, an automobile body (car), tires, and construction debris, and abandoned truck, two deteriorated empty drums, cable spools, metal pallets, an engine, a concrete slab, and related scrap metal were observed in an ephemeral stream bed west of Camp Garcia (NAVFAC, 2003), which were subsequently removed in 2009. Based on the site reconnaissance and housekeeping activity, it is not likely that PFAS-containing materials would have been associated with the activities at this site. A summary of historical investigations for PAOC X is contained in the No Action/No Further Action Decision Document (September 2010).
VNTR PI 14	No	The site was identified as a possible miscellaneous debris disposal area in the mid-1970s. An interviewee identified the possibility of the site having been used for scrap metal, ammunition boxes, shell casings, and miscellaneous debris disposal (NAVFAC, 2003). However, a site visit performed in 2009 identified only a few slap flares, several pounds of metal banding, and several spools of communications wire and no evidence of debris burial (CH2M, 2010). Based on interviews and site reconnaissance, it is not likely that PFAS-containing materials would have been associated with the activities at this site. A summary of historical investigations for PI 14 is contained in the No Action Decision Document (December 2010).
Specialty Paint, Cleaner, or Pesticide Storage and Disposal Area:		
NASD SWMU 10	No	Storage location for small quantities (less than 1 gallon) of paints, solvents, and thinners within Building 4001 from approximately 1971 to 1990 (PMC, 2000). This site is unlikely to represent a PFAS source area because PFAS-containing anti-fouling paints were not developed until the late-1980s and 1990s and because low/no VOC paint formulations have only been in use since the 1990s and used primarily in green and sustainable construction projects (Finnie and Williams, 2010). Based on the above information, it is not likely PFAS-containing materials were disposed of or released at these sites. A summary of historical investigations for SWMU 10 is contained in the No Action/No Further Action Decision Document (September 2010).

Table 4-1. Areas Evaluated for Potential PFAS Releases

Preliminary Assessment for PFAS

Former NASD and VNTR, Vieques, Puerto Rico

Area	Potential PFAS Source Area? (Yes/No)	Rationale
VNTR PAOC L	No	Records indicate the site was a former paint and transformer storage shed (approximately 11 feet x 13 feet), but no interviewee knowledge or records of releases at the site (NAVFAC, 2003). Additionally, no evidence of disposal or release was observed during site visits in 2000, 2006, and 2009 and soil data suggested only pesticide use/release immediately adjacent to the building, which was removed during the ESI (CH2M, 2010). Based on the above information, it not likely that PFAS-containing materials were disposed of or released at the site. A summary of historical investigations for PAOC L is contained in the No Action/No Further Action Decision Document (September 2010).
VNTR SWMU 6/7	No	Records indicate the co-located sites were a concrete pad and caged area at Camp Garcia used to stage waste oil in 55-gallon drums and paint in small containers from 1978 until 1995 (NAVFAC, 2003). While there are no records or historical knowledge of releases at these sites, small areas of oil-stained soil as a result of vehicle maintenance were observed. Soil data collected at the sites and analyzed for VOCs, SVOCs, herbicides, pesticides, PCBs, explosives, and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2010a). No staining was attributed to releases of paint, likely because the area was used to accumulate paint in small containers. Based on the above information, it is not likely PFAS-containing materials were disposed of or released at these sites. A summary of historical investigations for SWMU 6/7 are contained in the No Action/No Further Action Decision Document (September 2010).
Chromium Plating Shops		
N/A		No record or interviewee knowledge of chromium plating shops on the former NASD or former VNTR.
Car Washes and Auto Hobby Shops		
NASD SWMU 14	Unlikely ¹	The site is a former vehicle wash rack in the Public Works Area of the former NASD. The site was used from the late 1970s until the end of 2000 primarily for cleaning Navy vehicles; the area was curbed and runoff was directed through an oil/water separator. Facility personnel stated degreasing solvents were occasionally used in the area, but sampling data indicate only minor releases to soil (CH2M, 2003). Based on the above information, it not likely that a significant release of PFAS-containing materials, if any, occurred at the site. Further, there is no evidence that fire trucks were washed or serviced in this area while evidence was found that they were washed and serviced elsewhere. It is not common or standard protocol for records to document what does not occur at sites/areas. The absence of information stating fire trucks were washed or maintained at the referenced sites is a line of evidence that those activities did not occur there. Conversely, information was obtained stating where fire trucks were cleaned and maintained, and those areas are recommended for investigation during an SI. A summary of historical investigations for SWMU 14 is contained in the No Further Action Report (October 2006).
VNTR PI 8	Unlikely ¹	Interviewees and records indicated that this was the former motor pool maintenance area located south of the main road. Reported activities at this site included a motor pool maintenance area, car wash, oil drum storage and disposal area, drum storage area for asphalt emulsions, and potentially an area for storage of hazardous materials and petroleum products (NAVFAC, 2003). However, site reconnaissance, historical aerial photograph review, personnel interviews, and historical records review identified no specific car wash location. Soil data collected at the site and analyzed for VOCs, SVOCs, herbicides, pesticides, PCBs, TPH, and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2010a). Further, there are no records of firefighting or firefighting training at the site. Based on the above information, it not likely that PFAS-containing materials were disposed of or released to this site. Further, there is no evidence that fire trucks were washed or serviced in this area while evidence was found that they were washed and serviced elsewhere. It is not common or standard protocol for records to document what does not occur at sites/areas. The absence of information stating fire trucks were washed or maintained at the referenced sites is a line of evidence that those activities did not occur there. Conversely, information was obtained stating where fire trucks were cleaned and maintained, and those areas are recommended for investigation during an SI. A summary of historical investigations for PI 8 is contained in the No Action/No Further Action Decision Document (September 2010).
VNTR PAOC J	Unlikely ¹	One former employee from Naval Station Roosevelt Roads identified the site as a former vehicle maintenance area (NAVFAC, 2003). However, no other corroborating interviewees or records (including historical aerial photographs) were found were found. Soil data collected at the site and analyzed for VOCs, SVOCs, pesticides, PCBs, and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2009). Based on the above information, it not likely that PFAS-containing materials were present or released at the site. Further, there is no evidence that fire trucks were washed or serviced in this area while evidence was found that they were washed and serviced elsewhere. It is not common or standard protocol for records to document what does not occur at sites/areas. The absence of information stating fire trucks were washed or maintained at the referenced sites is a line of evidence that those activities did not occur there. Conversely, information was obtained stating where fire trucks were cleaned and maintained, and those areas are recommended for investigation during an SI. A summary of historical investigations for PAOC J is contained in the No Action/No Further Action Decision Document (September 2010).
VNTR PAOC K: Former Camp Garcia Wash Rack	Yes	One former employee from Naval Station Roosevelt Roads identified the site as a former wash rack area for Camp Garcia, demolished prior to 1980 (NAVFAC, 2003). Soil data collected at the site and analyzed for VOCs, SVOCs, pesticides, PCBs, and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2009). However, PFAS chemicals were not part of historical investigations. Although no record of washing fire trucks at this wash rack were found, if fire trucks were washed there, it is possible AFFF could have been released during washing. A summary of historical investigations for PAOC K is contained in the No Action/No Further Action Decision Document (September 2010).

Table 4-1. Areas Evaluated for Potential PFAS Releases

Preliminary Assessment for PFAS

Former NASD and VNTR, Vieques, Puerto Rico

Area	Potential PFAS Source Area? (Yes/No)	Rationale
VNTR PAOC T/PAOC U	Unlikely ¹	These sites were a vehicle maintenance area and mechanics shop at Camp Garcia. Stored petroleum products (NAVFAC, 2003). Soil and groundwater data collected at the site and analyzed for VOCs, SVOCs, pesticides, herbicides (soil), PCBs (soil), TPH (soil), and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil or groundwater at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2009b). Based on the above information, it is not likely that PFAS-containing materials were present or released at the site. Further, there is no evidence that fire trucks were washed or serviced in this area while evidence was found that they were washed and serviced elsewhere. It is not common or standard protocol for records to document what does not occur at sites/areas. The absence of information stating fire trucks were washed or maintained at the referenced sites is a line of evidence that those activities did not occur there. Conversely, information was obtained stating where fire trucks were cleaned and maintained, and those areas are recommended for investigation during an SI. A summary of historical investigations for PAOC T and PAOC U are contained in the No Action Decision Document (January 2009).
Ranges		
VNTR UXO 1 - ECA	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. A summary of historical investigations for UXO 1 is contained in the A Record of Decision (November 2015) and remedial action long term monitoring is being conducted annually as of January 2020.
VNTR UXO 2 - LIA Beaches	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an RI/FS report is being developed.
VNTR UXO 3 - LIA Roads	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an Draft Final RI/FS report is being produced.
VNTR UXO 4 - LIA Interior	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. The site is currently undergoing remedial investigation and an NTCRA removal action.
VNTR UXO 5 - SIA Restricted Roads	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an Draft Final RI/FS report is being produced.
VNTR UXO 6 - EMA/SIA Public Roads	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an Draft Final RI/FS report is being produced.
VNTR UXO 7 - EMA/SIA North Beaches	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an RI/FS report is being developed.
VNTR UXO 8 - SIA South Beaches	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an RI/FS report is being developed.
VNTR UXO 9 - SIA Exterior	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an RI/FS report is being developed.
VNTR UXO 10 - SIA Interior	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an RI/FS report is being developed.
VNTR UXO 11 - EMA Public Roads	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an Draft Final RI/FS report is being produced.
VNTR UXO 12 - EMA Interior	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 a Record of Decision has been submitted for regulatory review.
VNTR UXO 13 - EMA West	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an Draft Final RI/FS report is being produced.
VNTR UXO 14 - EMA South	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 a Record of Decision has been submitted for regulatory review.
VNTR UXO 15 - Puerto Ferro	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. As of January 2020 an Draft Final RI/FS report is being produced.
VNTR UXO 16 - Underwater Areas	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. The site is currently undergoing remedial investigation and an NTCRA removal action.
VNTR UXO 17 - PAOC EE	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. A Feasibility Study Addendum is being prepared for the site as of January 2020.
VNTR UXO 18 - Cayo La Chiva	No	No records or interviewee knowledge of firefighting, fire training, or use of AFFF or other potential PFAS-containing materials at the site. A summary of historical investigations for UXO 18 is contained in the Record of Decision (August 2018) and remedial action long term monitoring is being conducted annually as of January 2020..
Other		
VNTR PAOC N	No	Former fuel farm and filling station demolished in 1992 (NAVFAC, 2003). Based on historical records, interviews, and site reconnaissance, there is no record or interviewee knowledge of a fire suppression system at the fuel farm, or that fuel releases, firefighting, or firefighting training occurred, or that AFFF was used, stored, or spilled at this location. A summary of historical investigations for PAOC N is contained in the No Action/No Further Action Decision Document (September 2010).

Table 4-1. Areas Evaluated for Potential PFAS Releases

Preliminary Assessment for PFAS

Former NASD and VNTR, Vieques, Puerto Rico

Area	Potential PFAS Source Area? (Yes/No)	Rationale
VNTR SWMU 2 and PAOC S	No	Fuels off-loading site (and associated pipeline) that became operational in 1953 and was removed from operation between 1978 and 1979 (NAVFAC, 2003). Based on historical records, interviews, and site reconnaissance, there is no record or interviewee knowledge of a fire suppression system at the fuel farm, or that fuel releases, firefighting, or firefighting training occurred, or that AFFF was used, stored, or spilled at this location. A summary of historical investigations for SWMU 2 and PAOC S are contained in the No Action/No Further Action Decision Document (September 2010).

Notes:

Appendix C (Records Review) does not indicate any fires, fire training, or other use of AFFF or other PFAS containing material. No sites were indicated nor identified as containing such material.

Questionnaires documenting interviews are available in Appendix D.

¹ Information compiled during the Preliminary Assessment indicates a AFFF/PFAS release in this area was unlikely (see associated rationale). However, based on the tiered characterization approach concurred upon by the Navy and regulatory agencies, following evaluation of data collected from the “tier 1” areas (i.e., those with “Yes” entries in this table), the agencies will reconvene to discuss whether conclusions drawn for other sites remain valid or whether any additional characterization is warranted, including whether any additional sites/areas should be considered as a potential PFAS sources.

Sources:

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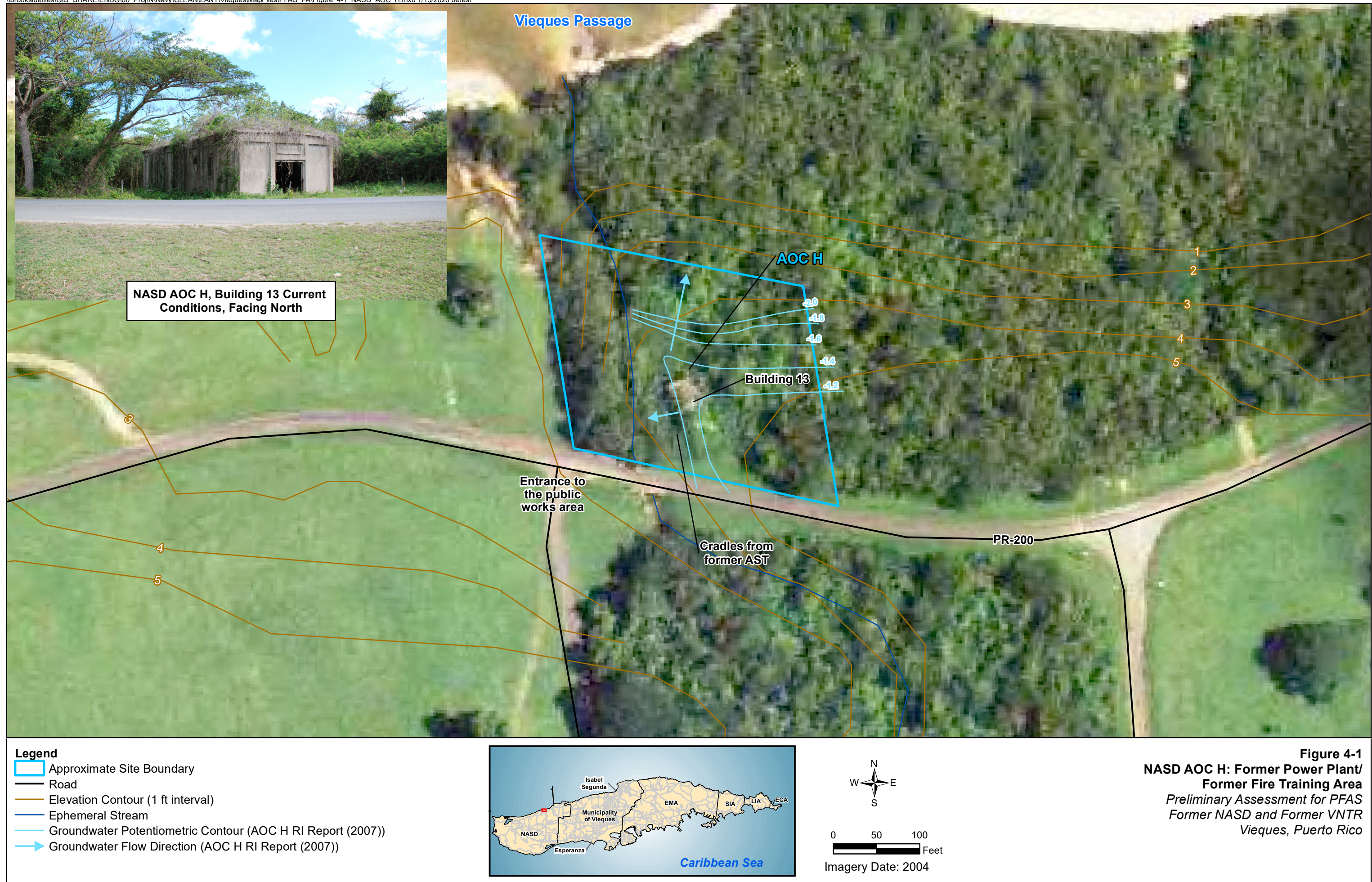
NAVFAC. 2018. Record of Decision, Solid Waste Management Unit 6, Former Mangrove Disposal Site, Atlantic Fleet Weapons Training Area - Vieques, Former Naval Ammunition Support Detachment, Vieques, Puerto Rico. July.

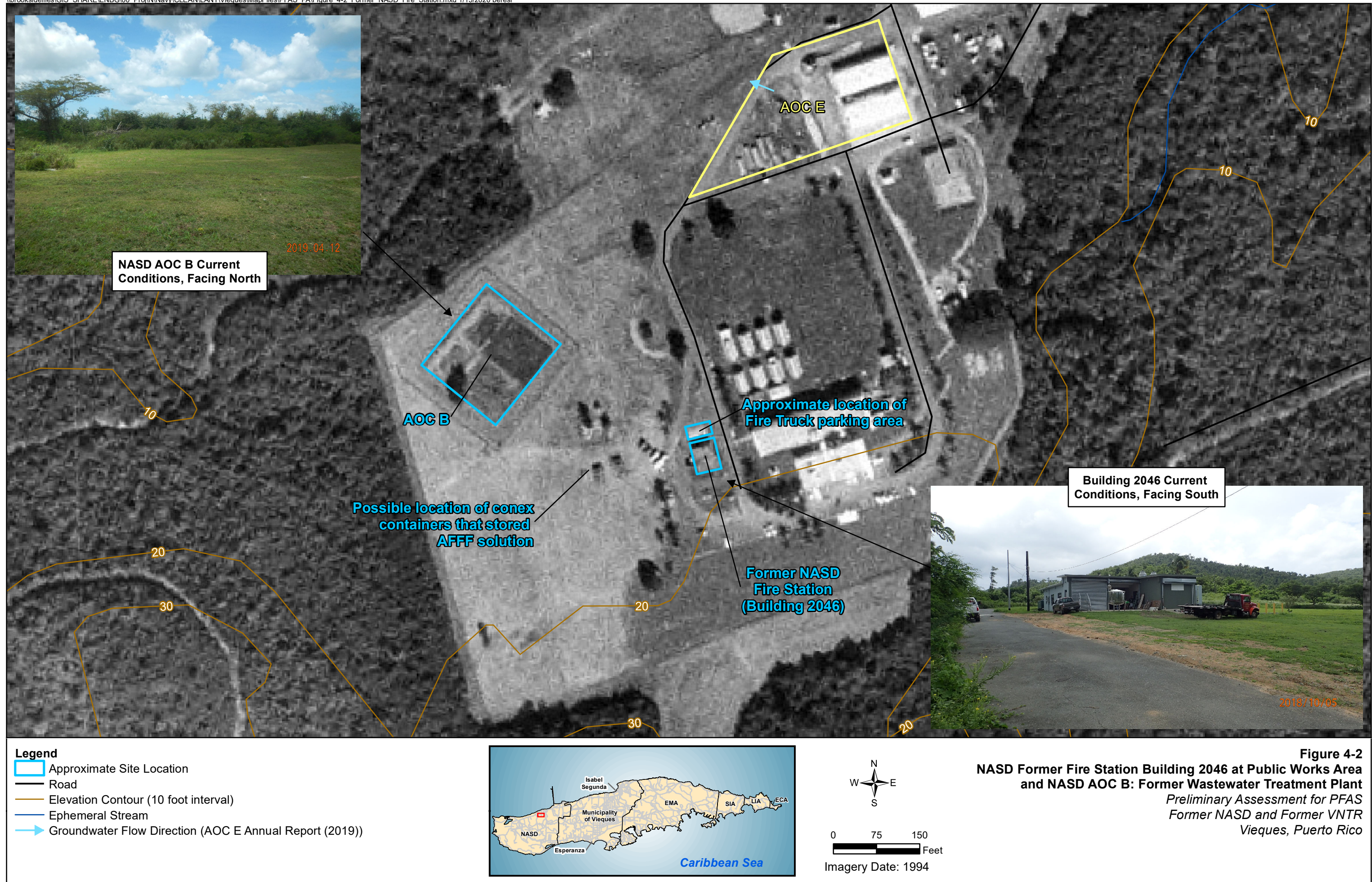
NAVFAC. 2018. Record of Decision UXO 18, Cayo La Chiva, Atlantic Fleet Weapons Training Area-Vieques, Former Vieques Naval Training Range, Vieques, Puerto Rico. August.

PMC. 2000. *Environmental Baseline Survey, Naval Ammunition Support Detachment Vieques, Vieques Island, Puerto Rico.* October 17.

PREQB, 2007. Commonwealth of Puerto Rico, Office of the Governor, Item No. R-07-2-9, Reference to: Public Hearing on No Further Action Report for Nine Sites at Former U.S. Naval Ammunition Support Detachment, Resolution and Notification, February 28.

Shaw. 2010. *Completion Report, Removal Actions SWMU 6, SWMU 7, AOC J and AOC R, Former Naval Ammunition Support Detachment, Vieques, Puerto Rico.* March.










NASD Motor Pool

AOC E

Motor Pool Area Current Conditions, Facing North

Legend

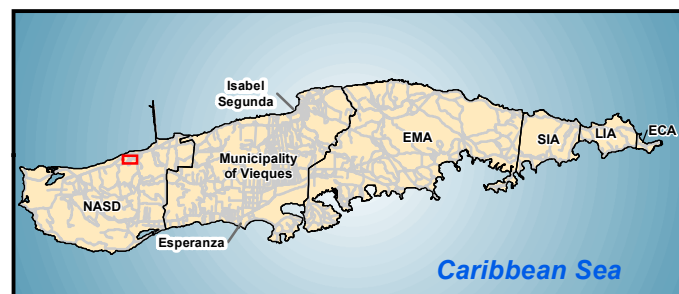
-  Approximate Site Location
 Road
 Elevation Contour (1 and 5 foot interval)
 Ephemeral Stream
 Groundwater Flow Direction (AOC E Annual Report (2019))

— Road

— Elevation Contour (1 and 5 foot interval)

— Ephemeral Stream

→ Groundwater Flow Direction (AOC E Annual Report (2019))



EMA



SIA

ECA

ECA

Caribbean Sea



S

S

0 75 150

Feet

Imagery Date: 1994

Figure 4-3
Potential Former NASD Motor Pool Area
Preliminary Assessment for PFAS
Former NASD and Former VNTR
Vieques, Puerto Rico

Potential Former NASD Motor Pool Area

Preliminary Assessment for PFAS

Former NASD and Former VNTR

Vieques, Puerto Rico

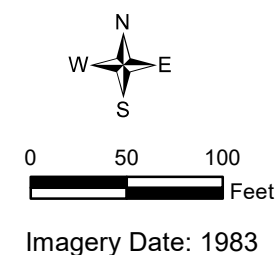
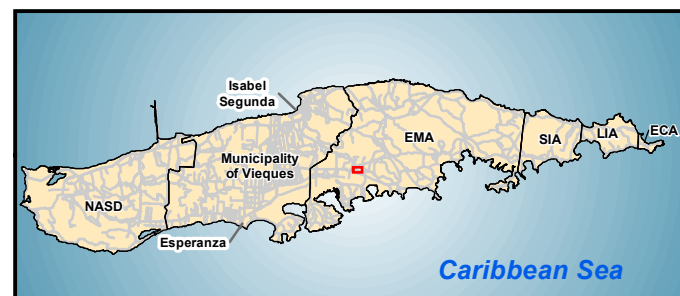
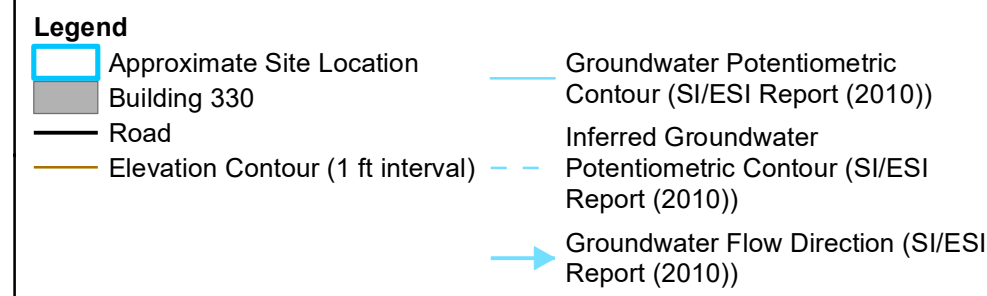
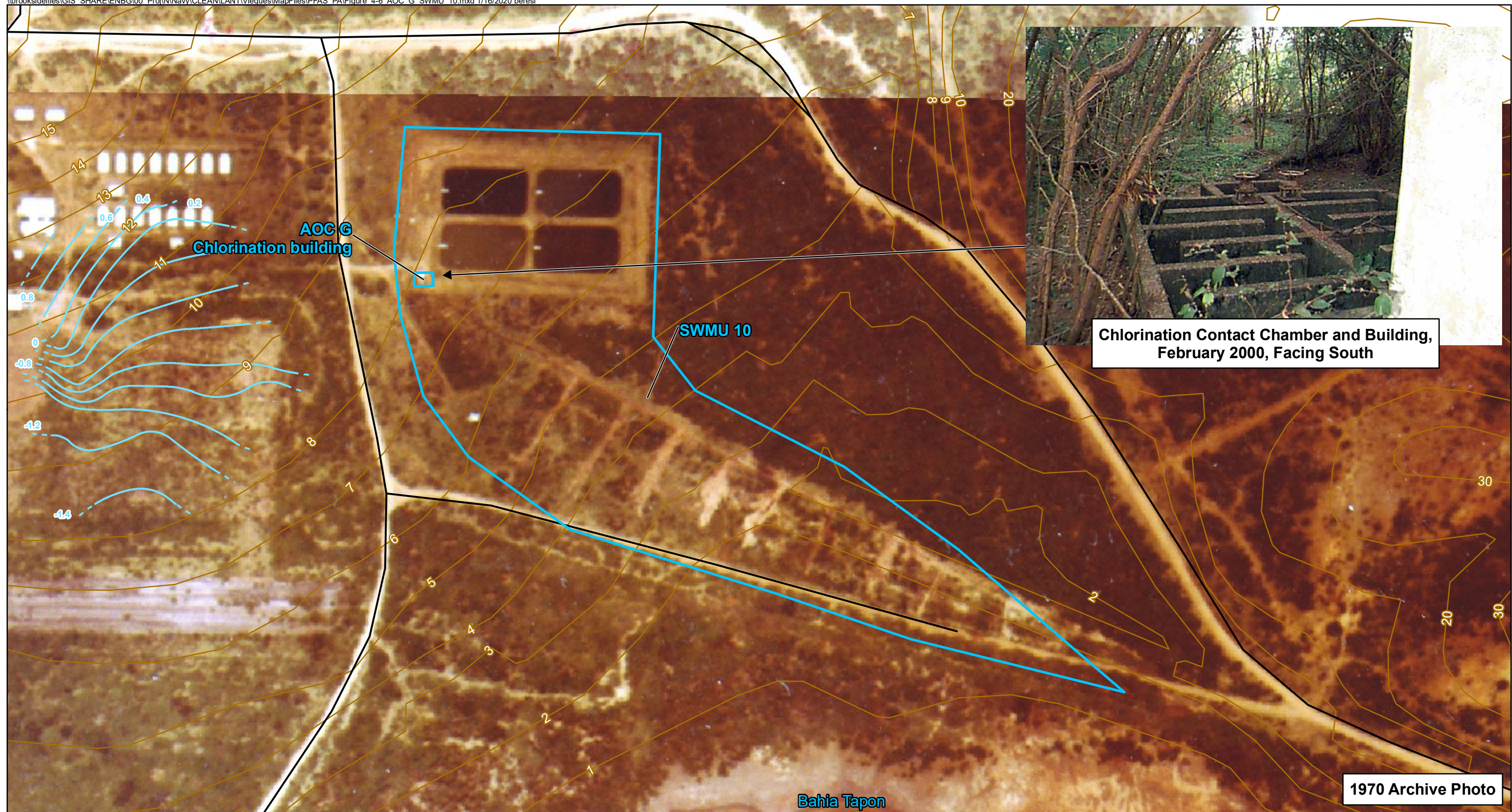


Figure 4-5
Potential Former VNTR Motor Pool Area (including Building 340)
and Former Fire Department Building 330
Preliminary Assessment for PFAS
Former NASD and Former VNTR
Vieques, Puerto Rico



- Legend**
- Approximate Site Location
 - Road
 - Elevation Contour (1 ft interval)
 - Groundwater Potentiometric Contour (SWMU 20 RI Report (2016))
 - Inferred Groundwater Potentiometric Contour (SWMU 20 RI Report (2016))

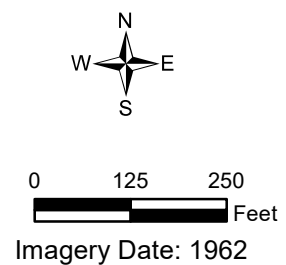


Figure 4-6
VNTR SWMU 10 and VNTR AOC G: Former Sewage Treatment Lagoons and Chlorination Building
Preliminary Assessment for PFAS
Former NASD and Former VNTR
Vieques, Puerto Rico



- Legend**
- Approximate Site Location
 - Road
 - Elevation Contour (1 ft interval)
 - Potentiometric Contour (SWMU 6 RI Report (2007))
 - Inferred Potentiometric Contour (SWMU 6 RI Report (2007))
 - Groundwater Flow Direction (SWMU 6 RI Report (2007))

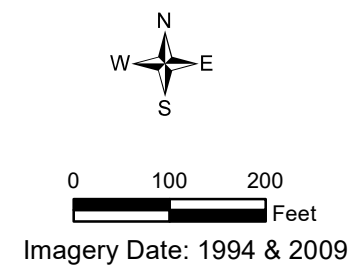
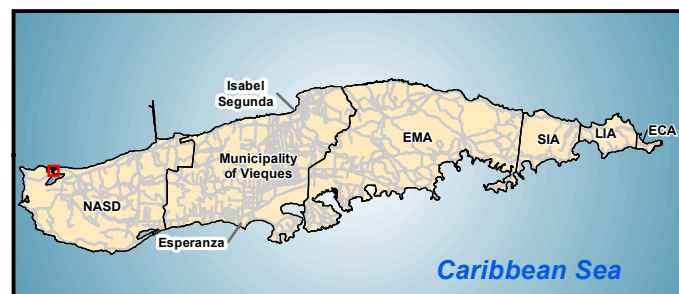
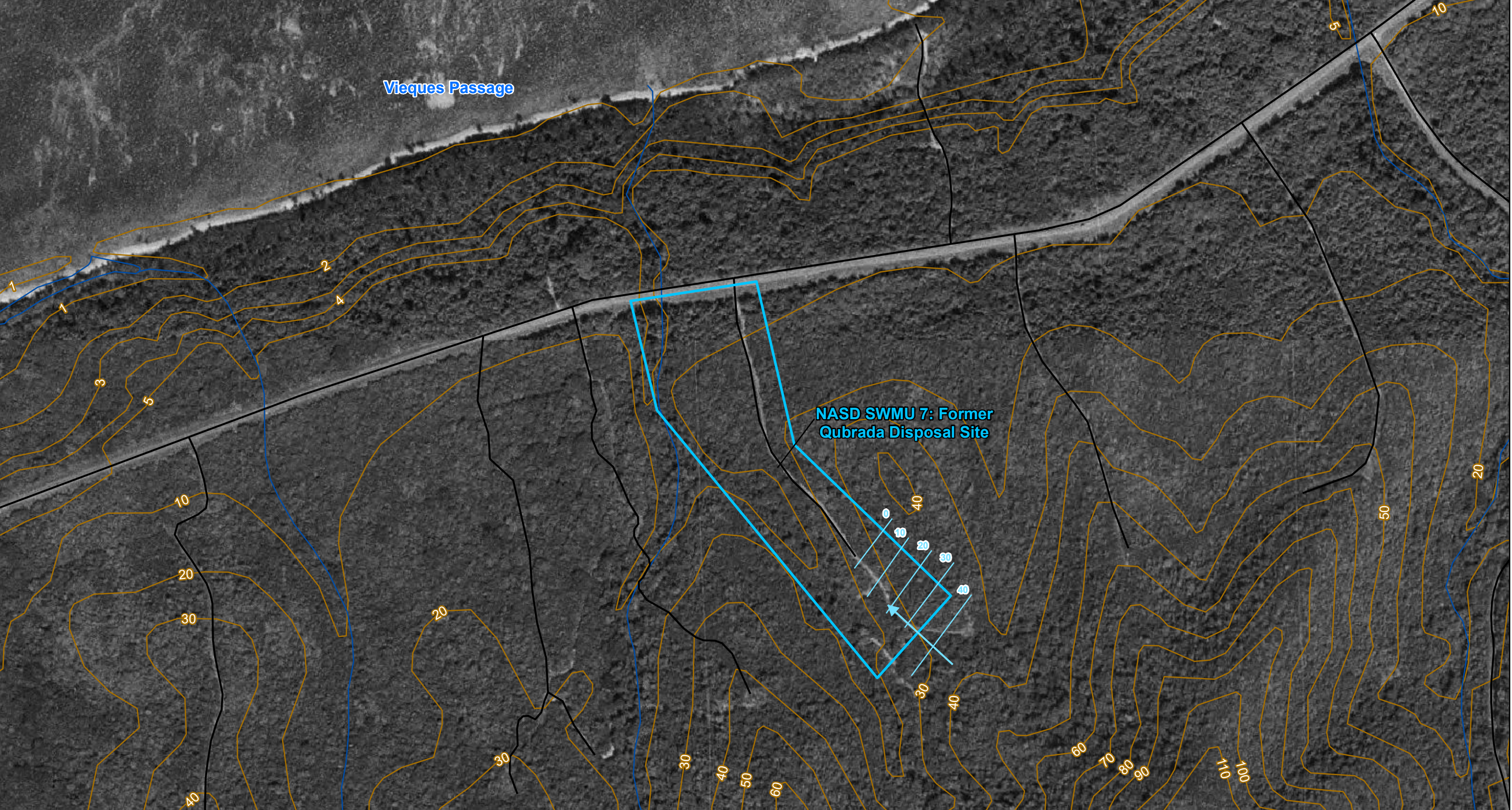


Figure 4-7
NASD SWMU 6: Former Mangrove Disposal Site
Preliminary Assessment for PFAS
Former NASD and Former VNTR
Vieques, Puerto Rico



- Legend**
- Approximate Site Location
 - Road
 - Elevation Contour (1, 5 & 10 foot interval)
 - Ephemeral Stream
 - Potentiometric Groundwater Contour (SWMU 7 RI Report (2008))
 - Groundwater Flow Direction (SWMU 7 RI Report (2008))

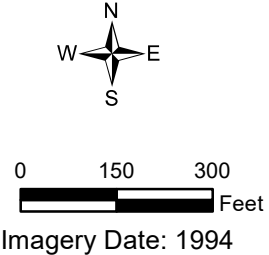
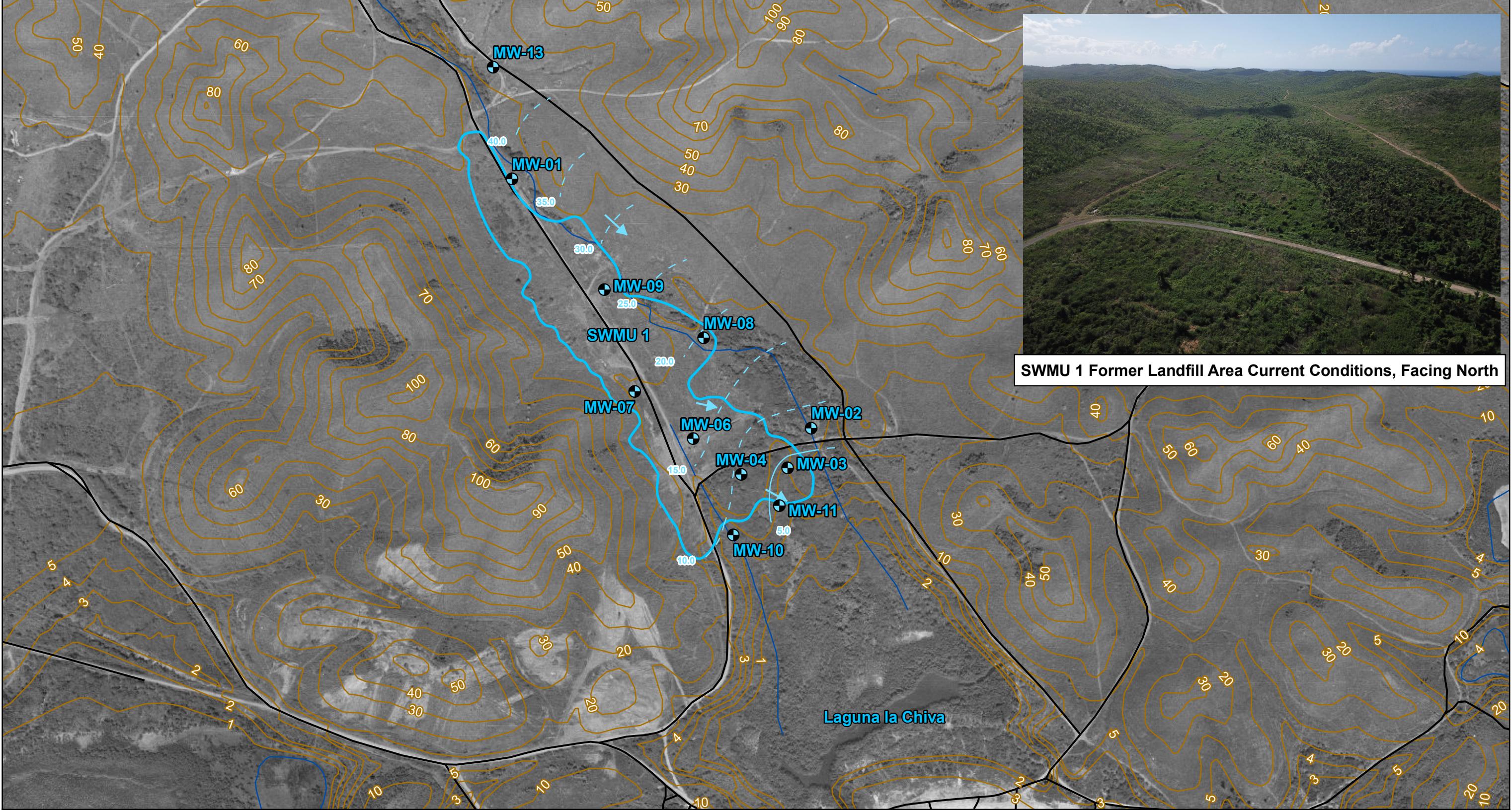


Figure 4-8
NASD SWMU 7: Former
Quebrada Disposal Site
Preliminary Assessment for PFAS
Former NASD and Former VNTR
Vieques, Puerto Rico



SWMU 1 Former Landfill Area Current Conditions, Facing North

Legend

- Approximate Site Location
- Road
- Elevation Contour (1 and 10 foot interval)
- Ephemeral Stream
- Monitoring Well
- Potentiometric Groundwater Contour (SMWU 1 LTM Annual Report (2019))
- Inferred Potentiometric Groundwater Contour (SMWU 1 LTM Annual Report (2019))
- Groundwater Flow Direction (SMWU 1 LTM Annual Report (2019))



North arrow pointing North (N), South (S), East (E), and West (W).

Scale bar: 0, 350, 700 Feet

Imagery Date: 1964

Figure 4-9
VNTR SWMU 1: Former Camp Garcia Municipal Solid Waste Management Unit (Landfill)
Preliminary Assessment for PFAS
Former NASD and Former VNTR
Vieques, Puerto Rico

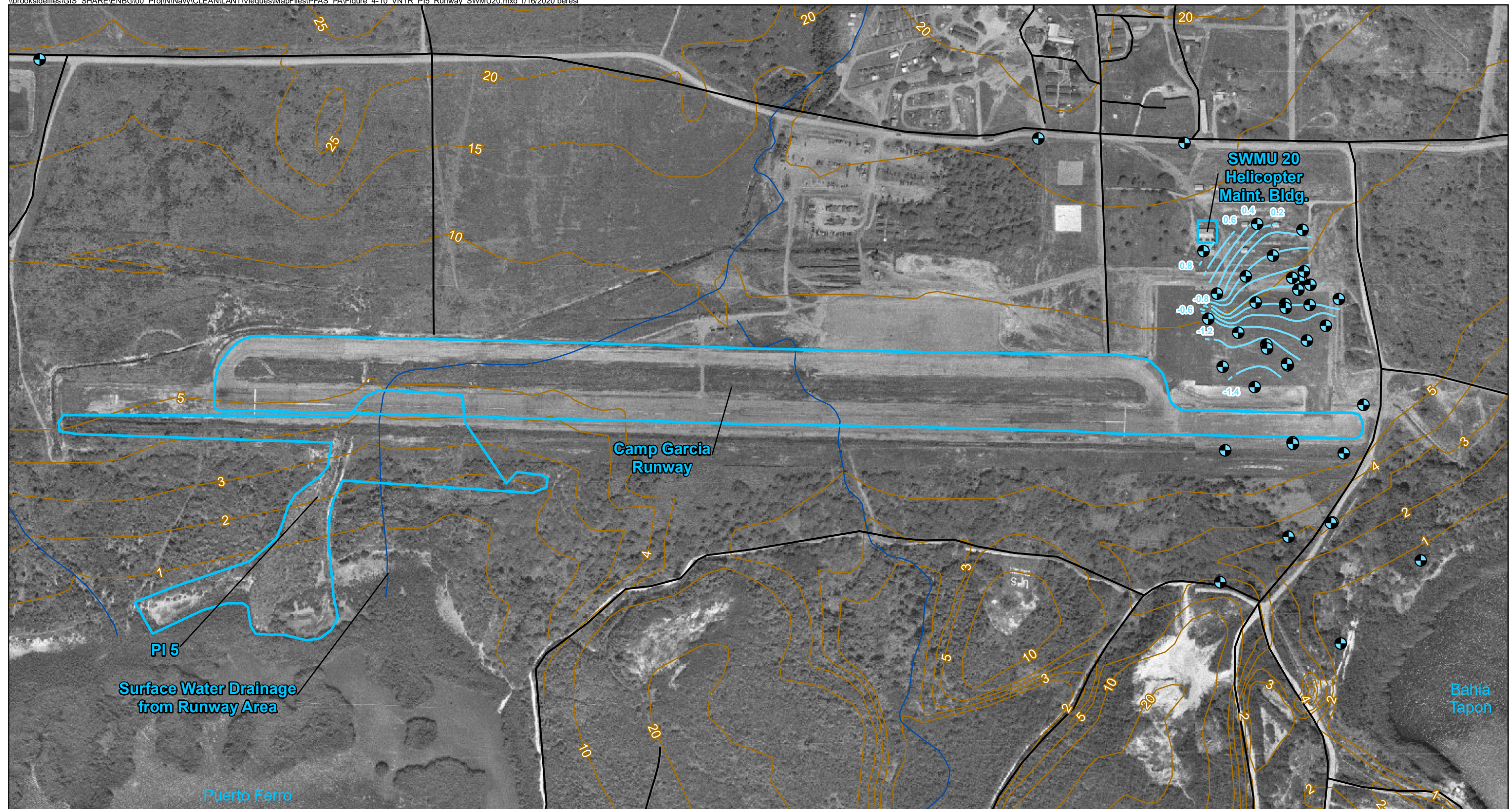
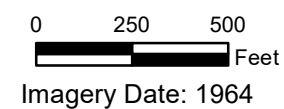
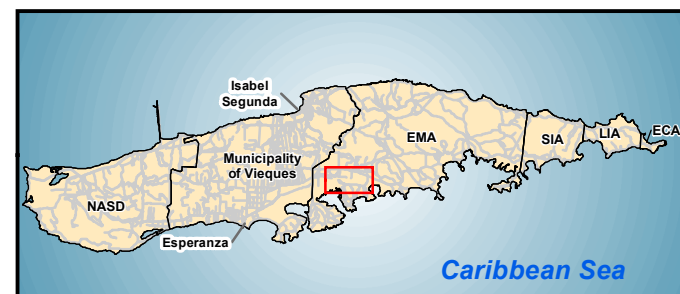
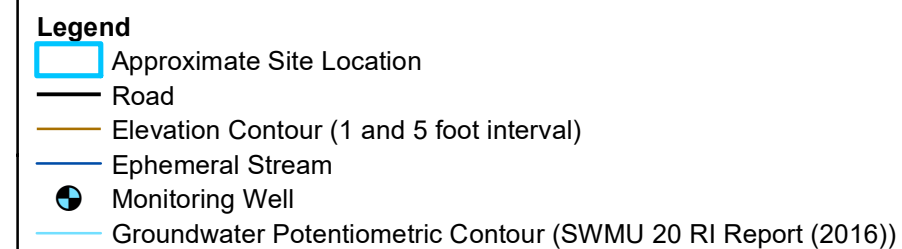


Figure 4-10
Camp Garcia Runway, PI 5 Surface Water Drainage Area from Camp Garcia Runway, and SWMU 20 Former Helicopter Maintenance Area
Preliminary Assessment for PFAS
Former NASD and Former VNTR
Vieques, Puerto Rico



Summary and Conclusions

This PA evaluated the potential for PFAS to be present at the Vieques former NASD and/or former VNTR through historical records review, former personnel interviews, and site reconnaissance. **Table 4-1** identifies potential PFAS source/release areas as well as all other areas evaluated that were determined not to be potential PFAS source/release areas and, therefore, not warranting further investigation. Of the 56 sites and areas evaluated, 14 were identified as possible AFFF or other PFAS-containing material source/release areas. Although no definitive evidence of actual AFFF/PFAS disposal or release has been found, an interviewee recollection (i.e., suggesting fire trucks where AFFF was stored were regularly flushed) the types of historic services/features identified, and the timeframe of operation relative to Navy-wide AFFF and other PFAS-containing materials use indicate certain areas should be further evaluated for potential presence of PFAS in environmental media. These sites/areas are listed in **Table 5-1** together with the primary rationale for including them in further evaluation via an SI. The SI will focus on potential releases of PFAS and as such samples collected during the SI will be analyzed for PFAS only to determine if there has been a release of these chemicals to the environment. The details of the SI will be included in an SI SAP that includes the rationale for investigation, conceptual site model of potential release and exposure, investigation approach, and data use, including risk screening. During preparation of the PFAS SI SAP, an attempt will be made to contact additional former employees stationed in those potential for PFAS areas where little information is known in an attempt to find more details about AFFF activities conducted during the mid-1960s to late-1990s at the Atlantic Fleet Weapons Training Area. In addition, an attempt will be made to contact the former employees interviewed during the Preliminary Assessment to address the questions posed by EPA during review of the Draft Preliminary Assessment Report.

Groundwater is not used as a source of public drinking water on the island and there are no known private wells used for drinking water purposes. Groundwater withdrawal on Vieques for public potable use (formerly conducted via 14 public water supply wells located in the alluvial coastal plain near Esperanza and potentially 6 additional wells in the northwestern portion of Vieques) was discontinued in 1978. Since that time, potable water for the island population has been supplied via a pipeline from the Rio Blanco filtration plant in eastern Puerto Rico. However, if PFAS are detected in groundwater at the SI stage, then efforts to confirm the absence of private drinking water wells will be made within a 4-mile radius of the detected contamination, per EPA PA/SI guidance. The SI will evaluate if there is a release of PFAS to the environment that may pose a threat to human health and environment. If PFAS are detected during the PA, the SI will include a human health risk screening for groundwater, soil, surface water, and/or sediment (as applicable based on media detections). Additionally, if formal, regulatory-based ESVs become available for PFAS compounds, the SI will include an ecological risk screening for surface soil, surface water, and/or sediment (as applicable based on media detections).

Table 5-1. Areas Identified as Potential PFAS Source Areas

Preliminary Assessment for PFAS

Former NASD and VNTR, Vieques, Puerto Rico

Area Assessed	Rationale
NASD AOC H: Former Power Plant/Former Fire Training Area	<ul style="list-style-type: none"> Based on information obtained from an interviewee, AFFF was utilized on fire trucks during at least part of the time the former power plant was used for fire training. The site was actively used as a fire training facility (1960s – 1980s) during the time AFFF could have been onsite (i.e., about 1970 forward). Reportedly, diesel fuel was poured over rubber tires inside the building, ignited to simulate structural fires, and extinguished during training operations.
NASD Former Fire Station Building 2046 at the Public Works Area	<ul style="list-style-type: none"> Interview indicates AFFF may have been stored adjacent to Building 2046 and that 50-gallons of AFFF was stored in each of two fire trucks located onsite. Storage of the AFFF was reported to be in Conex containers less than 100 feet to the southwest of the main building AFFF was added to the fire trucks on the ramp in front of the station; fire trucks containing AFFF were flushed once a month and were also washed on this ramp. Annual pump tests and monthly cleaning were performed onsite. No maintenance was reportedly performed in the building and no floor drains were observed, but the restrooms were tied directly to the WWTP (AOC B).
Potential Former NASD Motor Pool Area	<ul style="list-style-type: none"> Interview indicates that maintenance was performed at the motor pool on the aforementioned fire trucks that may have contained AFFF.
Potential Former VNTR Motor Pool Area (including Building 340) and Former Fire Department Building 330	<ul style="list-style-type: none"> Interview indicates that fire truck maintenance was performed at the motor pool, the location of which he marked on a map of Camp Garcia. Building 330 is identified on a map as the Fire Department within Camp Garcia; motor pool was immediately adjacent. No historical information has been found regarding the use of Building 340. However, given its close proximity to the former fire department building (Building 330) and that historical imagery shows no structure in the area referred to by the interviewee, it is possible Building 340 was associated with the motor pool.
NASD AOC B: Former Wastewater Treatment Plant	<ul style="list-style-type: none"> Former WWTP used as the primary treatment system for municipal (domestic) sewage discharge from the main operations area of the former NASD from 1983 until 2000. Four lagoons associated with the WWTP were no-discharge lagoons. Although there is no evidence of AFFF or other PFAS-containing materials were disposed of through the treatment system, because no records were found regarding disposal of industrial wastewater at the main operations area, and because of the types of activities that took place in the main operations area, industrial-type wastewater could have been processed through this WWTP.
VNTR SWMU 10 and VNTR AOC G: Former Sewage Treatment Lagoons and Chlorination Building	<ul style="list-style-type: none"> Former Camp Garcia sewage treatment lagoons in use from the 1950s until 2000 (with modification); replacement lagoon constructed immediately adjacent and used after 2000. Although there is no evidence of AFFF or other PFAS-containing materials were disposed of through the treatment system, because no records were found regarding disposal of industrial wastewater at Camp Garcia, and because of the types of activities that took place at Camp Garcia, industrial-type wastewater could have been processed through this WWTP.

Table 5-1. Areas Identified as Potential PFAS Source Areas
Preliminary Assessment for PFAS
Former NASD and VNTR, Vieques, Puerto Rico

Area Assessed	Rationale
NASD SWMU 6: Former Mangrove Disposal Site	<ul style="list-style-type: none"> • Site was used for disposal of trash associated with operations at the former NASD from 1965 to 1980, including cans of lubricants, oils, solvents, and paints, some of which appeared to have been burned. • Based on site use, timeframe of site use, and activities that took place at the former NASD, as described previously, AFFF or other PFAS-containing materials could have been disposed of at this site.
NASD SWMU 7: Former Quebrada Disposal Site	<ul style="list-style-type: none"> • Site was used for disposal of debris associated with operations at the former NASD during the 1960s and 1970s, including empty containers (e.g., drums, cans, bottles). • Based on site use, timeframe of site use, and activities that took place at the former NASD, as described previously, AFFF or other PFAS-containing materials could have been disposed of at this site.
VNTR SWMU 1: Former Camp Garcia Municipal Solid Waste Management Unit (Landfill)	<ul style="list-style-type: none"> • Site was used as a municipal landfill for Camp Garcia from 1954 through 1978 (NAVFAF, 2003). Reported use of the landfill was restrained to municipal waste, and excavated test pits confirmed the debris were consistent with the reports with the exception of a few munitions-related items. • Because AFFF was reportedly present at the base and other PFAS-containing materials may have been used, and because of the timeframe during which the landfill was operational, the potential for disposal of empty drums of AFFF and containers of other PFAS-containing materials at the site exists.
Camp Garcia Runway	<ul style="list-style-type: none"> • Site was an active (at least periodically) runway from 1959 until 1975. No records of crashes, fires, or use of AFFF were identified. • AFFF containing PFAS was developed in the 1960s and was put into routine use in the early 1970s following a November 1969 MILSPEC issuance. Although there are no known records of AFFF use or demonstration at the Camp Garcia Runway, the runway was reportedly still in periodic use during a time when AFFF containing PFAS was reportedly in use by the Navy.
PI 5: Surface Water Drainage Area from Camp Garcia Runway	<ul style="list-style-type: none"> • This site was the drainage feature on the south (downgradient) side of the Camp Garcia Runway and includes drainage ditches leading from the airfield to Puerto Ferro. Its relevant operational history would mirror that of the former Camp Garcia Runway. • The potential for AFFF/PFAS release to PI 5 is based on the potential described for the former Camp Garcia Runway.
SWMU 20: Former Helicopter Maintenance Area	<ul style="list-style-type: none"> • Site was used as a helicopter maintenance area/hangar from 1959 to 1975 and included barracks, mess hall, trenched areas, disturbed areas, and bermed areas for fuel bladders. • No records were found that indicated a fire suppression system was present in the hangar or that AFFF was stored or used there. Nonetheless, hangars commonly have fire suppression systems and AFFF may have been present at the base for at least a portion of the time the helicopter maintenance area/hangar was operational.

Table 5-1. Areas Identified as Potential PFAS Source Areas

Preliminary Assessment for PFAS

Former NASD and VNTR, Vieques, Puerto Rico

Area Assessed	Rationale
VNTR PAOC K: Former Camp Garcia Wash Rack	<ul style="list-style-type: none">• The site is a former vehicle wash rack that was located at Camp Garcia, not far from the location of the former VNTR motor pool and fire department building.• Although no record of washing fire trucks at this wash rack were found, if fire trucks were washed there, it is possible AFFF could have been released during washing.

SECTION 6

References³

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³ A CD has been created that includes all reference documents listed in this report and distributed to regulatory leads.

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Appendix A

Site and Building Locations

Appendix A

Pages from the NASD Environmental Baseline Survey, Appendix B

Table B-1. List of Structures
NASD MOV Compound Map

Program Management Company (PMC). 2000. *Environmental Baseline Survey, Naval Ammunition Support Detachment Vieques, Vieques Island, Puerto Rico*. October 17.

EBS Report, Appendix B, Table B-1

Table | List of Structures at NASD Vieques

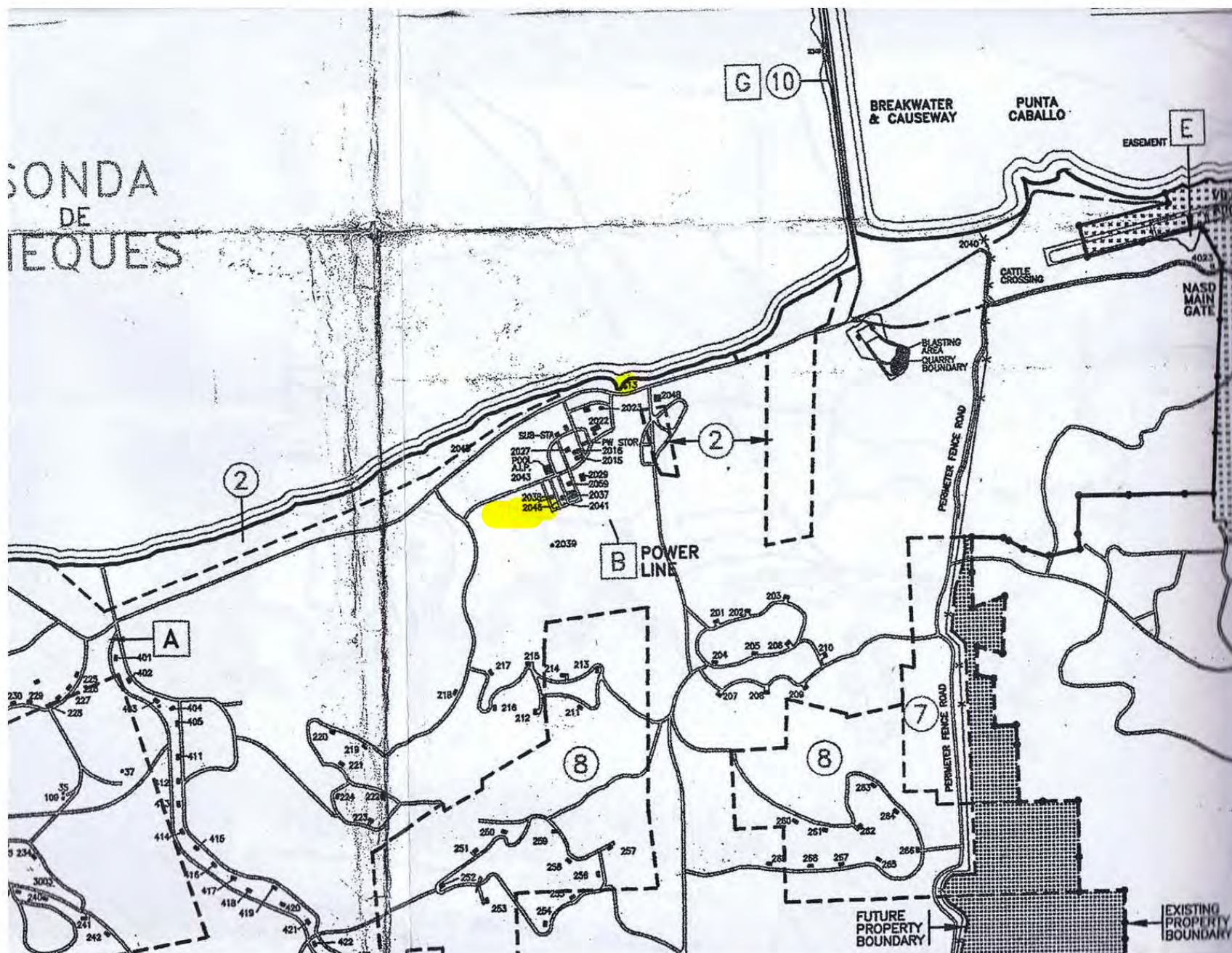
BUILDING NO.	BUILDING DESCRIPTION	YEAR CONSTRUCTED	OUTSIDE DIMENSIONS (feet)
13	PW MAINTENANCE STORAGE	1946	77X27
401	INERT STOREHOUSE	1969	200X49
402	INERT STOREHOUSE	1942	200X49
403	INERT STOREHOUSE	1942	200X49
404	INERT STOREHOUSE	1942	200X49
405	INERT STOREHOUSE	1942	200X49
2015	AUTO VEH SHOP	1966	101X40
2019	SW/SUB BLDG/SHELTER	1966	38X8
2022	PW SHOP	1966	57X47
2023	PW SHOP	1966	20X11
2029	WATER TREATMENT FAC BLDG	1966	10X10
2037	QUARTERDECK/BARRACKS	1969	20,000 sf
2045	ENLISTED DINING FACILITY	1977	70X49
2046	FIRE STATION	1972	
2051	PW MAINTENANCE STORAGE	1971	100X40
2059	RECREATION CENTER	1967	33X21
2060	RECREATION CENTER	1969	15X12
2066	AUTO VEHICLE SHOP	1966	101X40
2173	PW MAINTENANCE STORAGE	1982	16X12
2184	GARBAGE HOUSE	1984	10X6
4001	PAINT/RELAT OPS	1982	10X15
4005	OP HAZARD STORAGE	1984	8X8
4010	OP HAZARD STORAGE	1985	8X8
4011	OP HAZARD STORAGE	1970	8X8
4021	PW MAINTENANCE STORAGE	1994	100X40
4022	GATE/SENTRY HOUSE	1995	10X10
4023	GATE/SENTRY HOUSE	1995	12X10
N314	WATER DIST BLDG	1961	12X12
201	HIGH EXPLOSIVE MAGAZINE	1942	80X25
202	HIGH EXPLOSIVE MAGAZINE	1942	80X25
203	HIGH EXPLOSIVE MAGAZINE	1942	80X25
204	HIGH EXPLOSIVE MAGAZINE	1942	80X25
205	HIGH EXPLOSIVE MAGAZINE	1942	80X25
206	HIGH EXPLOSIVE MAGAZINE	1942	80X25
207	HIGH EXPLOSIVE MAGAZINE	1942	80X25
208	HIGH EXPLOSIVE MAGAZINE	1942	80X25
209	HIGH EXPLOSIVE MAGAZINE	1942	80X25
210	HIGH EXPLOSIVE MAGAZINE	1942	80X25
211	HIGH EXPLOSIVE MAGAZINE	1942	80X25
212	HIGH EXPLOSIVE MAGAZINE	1942	80X25
213	HIGH EXPLOSIVE MAGAZINE	1942	80X25
214	HIGH EXPLOSIVE MAGAZINE	1942	80X25
215	HIGH EXPLOSIVE MAGAZINE	1942	80X25
216	HIGH EXPLOSIVE MAGAZINE	1942	80X25
217	HIGH EXPLOSIVE MAGAZINE	1942	80X25
218	HIGH EXPLOSIVE MAGAZINE	1942	80X25
219	HIGH EXPLOSIVE MAGAZINE	1942	80X25
220	HIGH EXPLOSIVE MAGAZINE	1942	80X25

Table 1 *List of Structures at NASD Vieques (cont)*

BUILDING NO.	BUILDING DESCRIPTION	YEAR CONSTRUCTED	OUTSIDE DIMENSIONS (feet)
221	HIGH EXPLOSIVE MAGAZINE	1942	80X25
222	HIGH EXPLOSIVE MAGAZINE	1942	80X25
223	HIGH EXPLOSIVE MAGAZINE	1942	80X25
224	HIGH EXPLOSIVE MAGAZINE	1942	80X25
225	FUSE AND DET MAGAZINE	1942	20X25
226	FUSE AND DET MAGAZINE	1942	20X25
227	FUSE AND DET MAGAZINE	1942	20X25
228	FUSE AND DET MAGAZINE	1942	20X25
229	FUSE AND DET MAGAZINE	1942	20X25
230	FUSE AND DET MAGAZINE	1942	20X25
231	FUSE AND DET MAGAZINE	1942	20X25
232	FUSE AND DET MAGAZINE	1942	20X25
233	FUSE AND DET MAGAZINE	1942	20X25
234	HIGH EXPLOSIVE MAGAZINE	1942	80X25
235	HIGH EXPLOSIVE MAGAZINE	1942	80X25
236	HIGH EXPLOSIVE MAGAZINE	1942	80X25
237	HIGH EXPLOSIVE MAGAZINE	1942	80X25
238	HIGH EXPLOSIVE MAGAZINE	1942	80X25
239	HIGH EXPLOSIVE MAGAZINE	1942	80X25
240	HIGH EXPLOSIVE MAGAZINE	1942	80X25
241	HIGH EXPLOSIVE MAGAZINE	1942	80X25
242	HIGH EXPLOSIVE MAGAZINE	1942	80X25
243	HIGH EXPLOSIVE MAGAZINE	1942	80X25
244	HIGH EXPLOSIVE MAGAZINE	1942	80X25
245	HIGH EXPLOSIVE MAGAZINE	1942	80X25
246	HIGH EXPLOSIVE MAGAZINE	1942	80X25
247	HIGH EXPLOSIVE MAGAZINE	1942	80X25
248	HIGH EXPLOSIVE MAGAZINE	1942	80X25
249	HIGH EXPLOSIVE MAGAZINE	1942	80X25
250	HIGH EXPLOSIVE MAGAZINE	1942	80X25
251	FUSE AND DET MAGAZINE	1942	80X25
252	FUSE AND DET MAGAZINE	1942	80X25
253	HIGH EXPLOSIVE MAGAZINE	1942	80X25
254	HIGH EXPLOSIVE MAGAZINE	1942	80X25
255	HIGH EXPLOSIVE MAGAZINE	1942	80X25
256	HIGH EXPLOSIVE MAGAZINE	1942	80X25
257	HIGH EXPLOSIVE MAGAZINE	1942	80X25
258	HIGH EXPLOSIVE MAGAZINE	1942	80X25
259	HIGH EXPLOSIVE MAGAZINE	1942	80X25
260	HIGH EXPLOSIVE MAGAZINE	1942	80X25
261	HIGH EXPLOSIVE MAGAZINE	1942	80X25
262	HIGH EXPLOSIVE MAGAZINE	1942	80X25
263	HIGH EXPLOSIVE MAGAZINE	1942	80X25
264	HIGH EXPLOSIVE MAGAZINE	1942	80X25
265	HIGH EXPLOSIVE MAGAZINE	1942	80X25
266	HIGH EXPLOSIVE MAGAZINE	1942	80X25
267	HIGH EXPLOSIVE MAGAZINE	1942	80X25
268	HIGH EXPLOSIVE MAGAZINE	1942	80X25

Table | List of Structures at NASD Vieques (cont)

BUILDING NO.	BUILDING DESCRIPTION	YEAR CONSTRUCTED	OUTSIDE DIMENSIONS (feet)
269	HIGH EXPLOSIVE MAGAZINE	1942	80X25
301	SMOKELESS /P/P/M	1942	80X75
302	SMOKELESS /P/P/M	1942	80X75
303	HIGH EXPLOSIVE MAGAZINE	1942	80X75
304	SMOKELESS /P/P/M	1942	80X75
305	SMOKELESS /P/P/M	1942	80X75
306	SMOKELESS /P/P/M	1942	80X75
307	SMOKELESS /P/P/M	1942	80X75
308	SMOKELESS /P/P/M	1942	80X75
309	SMOKELESS /P/P/M	1942	80X75
310	SMOKELESS /P/P/M	1942	80X75
311	SMOKELESS /P/P/M	1942	80X75
312	SMOKELESS /P/P/M	1942	80X75
313	SMOKELESS /P/P/M	1942	80X75
411	SMOKELESS /P/P/M	1942	101X50
412	SMOKELESS /P/P/M	1942	101X50
413	SMOKELESS /P/P/M	1942	101X50
414	SMOKELESS /P/P/M	1942	101X50
415	SMALL ARMS /PYRO MAG	1942	101X50
416	SMOKELESS /P/P/M	1942	101X50
417	SMOKELESS /P/P/M	1942	101X50
418	SMOKELESS /P/P/M	1942	101X50
419	SMOKELESS /P/P/M	1942	101X50
420	HIGH EXPLOSIVE MAGAZINE	1942	101X50
421	HIGH EXPLOSIVE MAGAZINE	1942	101X50
422	HIGH EXPLOSIVE MAGAZINE	1942	101X50
423	HIGH EXPLOSIVE MAGAZINE	1942	101X50
424	HIGH EXPLOSIVE MAGAZINE	1942	101X50
425	HIGH EXPLOSIVE MAGAZINE	1942	101X50
2017	FILLING STATION	1966	
2018	AMMUNITION PIER	1966	651X40
2027	GREASE RACK	1966	47X9
2039	STORAGE TANK/GD POT	1967	
2048	HELO LANDING PAD	1944	
2063	GREASE RACK	1983	69X10
4003	VEHICLE WASH PLATFORM	1985	
4004	VEHICLE REFUELING STATION	1984	
4009	VEHICLE REFUELING STA	1978	
2028	SEPTIC TANK/DN FIELD	1966	
2038	SEWAGE TREATMENT PLANT	1969	
2058	SEPTIC TANK/DN FIELD	1971	
4008	STAND BY GENERATOR PLANT	1980	
4014	AIR CONDITIONER	1984	



Appendix A

Historic Site Maps from the VNTR Environmental Baseline Survey, Appendix G

General Site Plan

Roosevelt Roads Naval Station Complex (October 1969)

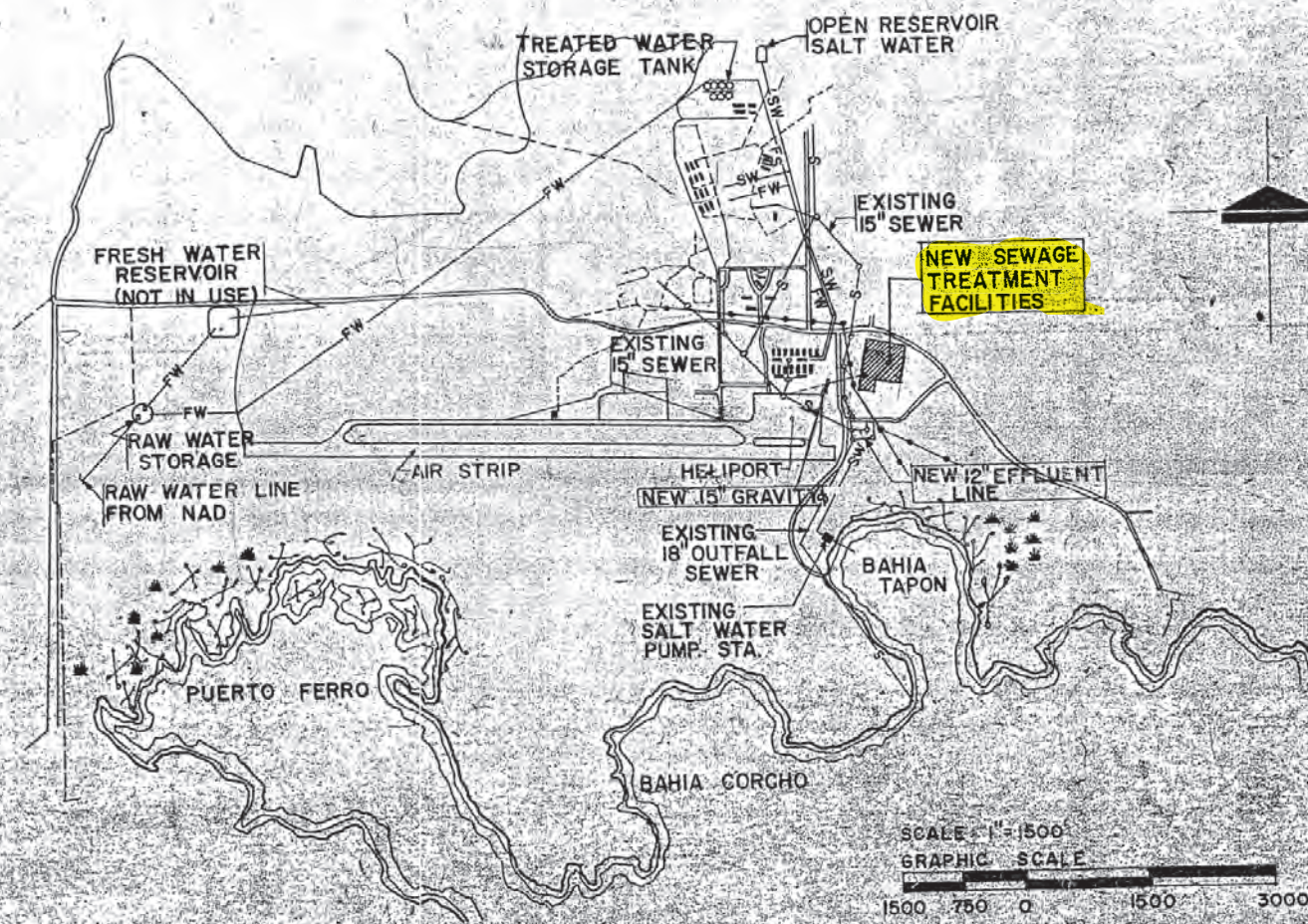
Master Shore Station Development Plan (August 1952)

Master Property Map of Vieques (August 1948)

Camp Garcia (October 1972)

Naval Facilities Engineering Command (NAVFAC). 2003. *Environmental Baseline Survey, Vieques Naval Training Range Vieques island, Puerto Rico*. April 1.

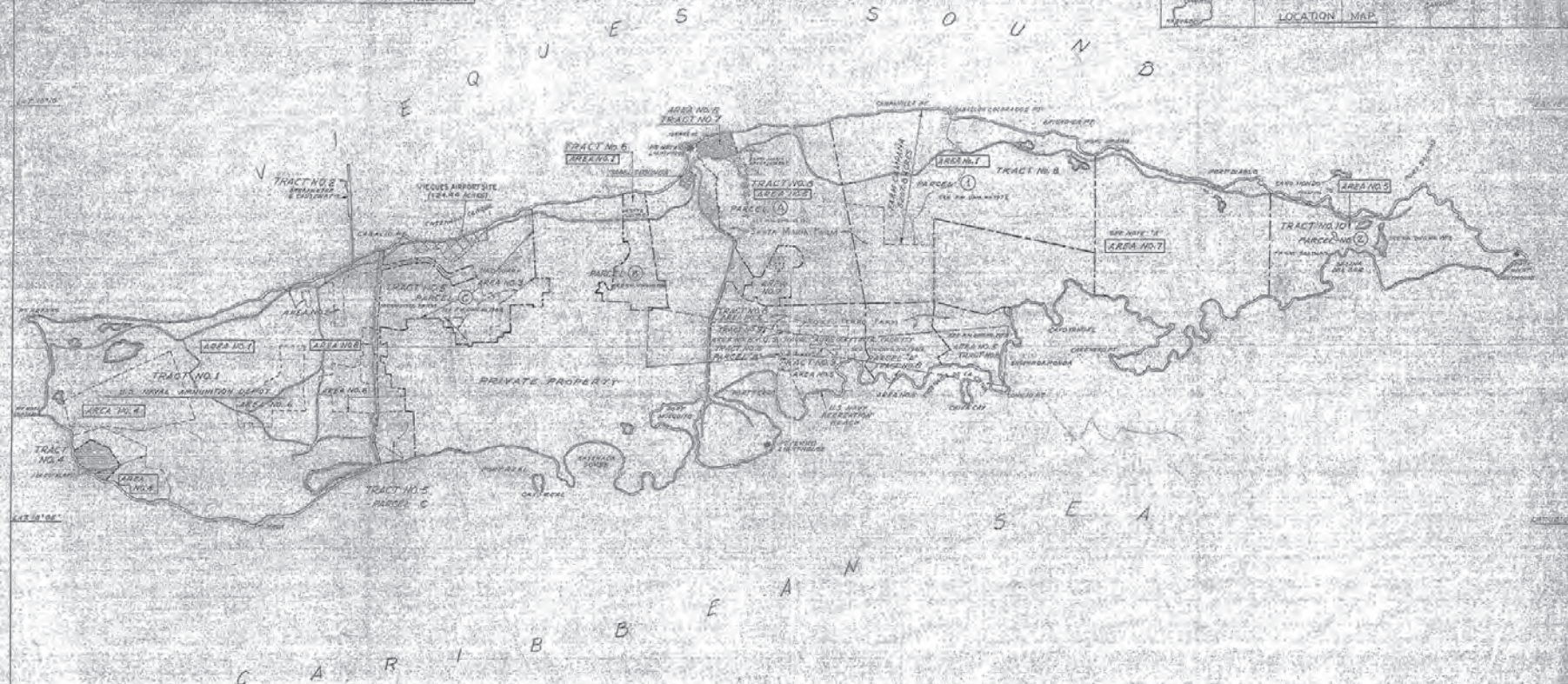
GENERAL SITE PLAN



ACREAGE SCHEDULE		
1. U.S. NAVY LAND		
U.S. NAVAL AMMUNITION DEPOT & BUNKER (SEE STRIP BETWEEN 1 & 2)	11.64	ACRES
U.S. NAVAL AMMUNITION DEPOT QUARRY & SPOT OF WAT	43.53	
U.S. NAVAL AMMUNITION DEPOT WATERSIDE GARDEN	43.53	
U.S. NAVAL AMMUNITION DEPOT POWER HOUSE SITE	2.08	
U.S. NAVAL AMMUNITION DEPOT POWER HOUSE SITE	2.08	
U.S. NAVY AIRCRAFT REPAIR SHED (PART OF TRACT 1)	2,487.40	
U.S. NAVY AIRCRAFT REPAIR SHED (PART OF TRACT 1)	359.31	
2. U.S. NAVY LAND AREA NOS 1-6 & AREA NOS 1-7	747.89	
3. U.S. NAVY LAND		
PARCEL NO. (1)	1,076.34	
PARCEL NO. (2)	2,123.07	
PARCEL NO. (3)	2,922.57	
PARCEL NO. (4)	518.07	
PARCEL NO. (5)	1,053.12	
TOTAL COMPUTER ACREAGE	8,030.40	ACRES
ORIGINAL U.S. NAVY ACQUISITION	8,030.40	
NET DUE TO ADJUTANT GENERAL'S OFFICE	45.50	ACRES

SUMMARY OF ACQUISITIONS						
AREA	DATE	NO. OF PARCELS	ACRES	APPROXIMATE DATE OF ACQUISITION	REMARKS	
1	10-17-41	4	700.08	10-17-41	10-17-41	
2	1-8-42	10	700.08	1-8-42	1-8-42	
3	2-20-42	85	1,000.00	2-20-42	2-20-42	
4	3-27-42	16	1,244.00	3-27-42	3-27-42	
5	5-9-42	2	705.46	5-9-42	5-9-42	
6	6-30-42	48	499.44	6-30-42	6-30-42	
7	7-9-44	12	842.15	7-9-44	7-9-44	
8	3-24-42	7	140.12	3-24-42	3-24-42	

ACREAGE SCHEDULE		
TRACT NO.	DESCRIPTION	ACREAGE
1	U.S. NAVAL AMMUNITION DEPOT (SEE STRIP BETWEEN 1 & 2)	11.64
2	U.S. NAVAL AMMUNITION DEPOT QUARRY & SPOT OF WAT	43.53
3	U.S. NAVAL AMMUNITION DEPOT WATERSIDE GARDEN	43.53
4	U.S. NAVAL AMMUNITION DEPOT POWER HOUSE SITE	2.08
5	U.S. NAVAL AMMUNITION DEPOT POWER HOUSE SITE	2.08
6	U.S. NAVY AIRCRAFT REPAIR SHED (PART OF TRACT 1)	2,487.40
7	U.S. NAVY AIRCRAFT REPAIR SHED (PART OF TRACT 1)	359.31
8	U.S. NAVY LAND AREA NOS 1-6 & AREA NOS 1-7	747.89
9	U.S. NAVY LAND	
10	U.S. NAVY LAND	
11	U.S. NAVY LAND	
12	U.S. NAVY LAND	
13	U.S. NAVY LAND	
14	U.S. NAVY LAND	
15	U.S. NAVY LAND	
16	U.S. NAVY LAND	
17	U.S. NAVY LAND	
18	U.S. NAVY LAND	
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28	U.S. NAVY LAND	
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38	U.S. NAVY LAND	
39	U.S. NAVY LAND	
40	U.S. NAVY LAND	
41	U.S. NAVY LAND	
42	U.S. NAVY LAND	
43	U.S. NAVY LAND	
44	U.S. NAVY LAND	
45	U.S. NAVY LAND	
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70	U.S. NAVY LAND	
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81	U.S. NAVY LAND	
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95	U.S. NAVY LAND	
96	U.S. NAVY LAND	
97	U.S. NAVY LAND	
98	U.S. NAVY LAND	
99	U.S. NAVY LAND	
100	U.S. NAVY LAND	



NOTE:
THIS IS A COPIED MAP FROM
A COPY OF PW-DWG-101-100

DEPARTMENT OF THE NAVY		U.S. NAVAL STATION, ROOSEVELT RDS.	
TITLE		PROPERTY MAP OF VIEQUES PR	
DATE		1952	
APPROVED		FOR THE COMMANDER	
FOR THE COMMANDER		FOR THE COMMANDER	



Appendix B
Listed Plant and Animal Species in the
Former NASD and Former VNTR

Listed Plant and Animal Species in the Former NASD and Former VNTR

Appendix B summarizes the federal and Puerto Rico listed terrestrial plant and animal species and aquatic animal species that are known or potentially occurring within the Former NASD and Former VNTR, or in surrounding coastal waters, and therefore may occur at PFAS AOCs having suitable habitat. **Table 1** shows that there is federal protection for 38 species including three bird, seven reptile, five marine mammal, four fish, seven marine invertebrate, and 12 plant species.

- Vahl's boxwood (*Buxus vahlii*) is a rare plant species in the boxwood family. It is typically a shrub or small tree that can reach 15 feet in height. This plant typically grows in semi-evergreen forests and remnants of dry forests on limestone substrates at elevations between 80 and 650 feet where it is typically limited to ravines and ledges. It is endemic to Puerto Rico and St. Croix in the United States Virgin Islands, where it is known from no more than four occurrences.
- Thomas' lidflower (*Calyptanthus thomasi*), endemic to the island of Puerto Rico, is an evergreen shrub or small tree which can reach 30 feet in height. This species occurs in rocky, shady, moist, and dense semi-evergreen forests at altitudes between 300 and 800 feet. On Vieques, it is currently known to occur on Monte Pirata.
- *Catesbaea melanocarpa* is a flowering plant in the coffee family. This spiny shrub is native to the Caribbean islands of Puerto Rico, St. Croix in the United States Virgin Islands, Antigua, Barbuda, and one island in Guadeloupe. This plant occurs in subtropical dry forests and remnants of dry forests (especially on limestone) which are relatively dry compared to other habitat types on the islands, receiving up to 40 inches of rain yearly.
- Puerto Rican senna (*Chamaecrista glandulosa* var. *mirabilis*) is an erect shrub that can reach up to 3 feet in height. It is scattered along the southern shore of the Tortuguero Lagoon in Puerto Rico and is also found at one location in Dorado and one in Vega Alta. This species is found in sandy areas adjacent to mangroves, and has previously been found associated with mangroves in the southwest portion of former Navy lands in Vieques. Puerto Rican senna is also found in sandy soils that are extremely acidic with low nutrients and are excessively drained with rapid percolation in the upper soils.
- Puerto Rican manjack (*Varronia rupicola*) is a small woody shrub that can reach up to 16 feet in height and grows within the subtropical dry forest zone situated over a limestone substrate. Previously thought to be endemic to Puerto Rico, the Puerto Rican manjack is known from small subpopulations in Puerto Rico and Anegada, British Virgin Islands. In Puerto Rico, approximately 226 individuals are known from three localities including Peñuelas, Guánica Commonwealth Forest, and the Vieques National Wildlife Refuge.
- Woodbury's stopper (*Eugenia woodburyana*) is endemic to southwestern Puerto Rico, and is a small evergreen tree that grows up to 20 feet in height. Woodbury's stopper is found within the subtropical dry forest, commonly with succulent or coriaceous species and species with thorns and spines. Woodbury's stopper grows in the hills of the oldest geologic formation in Puerto Rico, the Sierra Bermeja, located on private and public land within the Laguna Cartagena National Wildlife Refuge. The soils in the Sierra Bermeja are described as Guayama cherty clay loam that covers the steep slopes of the Sierra Bermeja. This species is also found in the Guánica State Forest of Puerto Rico, located in semi-evergreen forests at the bottom of mesic canyons.
- Beautiful goetzea (*Goetzea elegans*), which is endemic to the island of Puerto Rico, is a rare shrub or small shrubby tree that can grow to 30 feet in height and is characterized by trumpet-shaped orange-yellow flowers. It is found in forested areas within 150 feet of streams in alluvial soils, along quebradas or seasonal

water courses, in gallery forests, in semi-evergreen, limestone forests of the subtropical moist forest zone, and the foothills and karst limestone hills of northern Puerto Rico at elevations below 650 feet.

- *Leptocereus grantianus* is endemic to the island of Culebra. It is a spineless, sub-erect cactus that can grow up to 6.5 feet in height with a diameter of up to 1.2 to 2 inches. *Leptocereus grantianus* occurs in the subtropical dry forest, in dry coastal forests, and along coastal cliffs.
- Cana gorda girdlepod (*Mitracarpus polycladus*) is a small shrub that grows to 18 inches in height and is branched near the base. It inhabits rocky outcrops with crevices and soil pockets within coastal dwarf forest, coastal shrub forest, cactus scrub forest, and coastal scrub on sandy soil. This species is found in open dry limestone forest with exposed rocky plateau.
- Wheeler's peperomia (*Peperomia wheeleri*), which is endemic to the island of Culebra, is an evergreen herb that grows to 3.5 feet in height. This herbaceous species prefers semi-evergreen forests with an herbaceous layer and tree canopy. In Culebra, the Wheeler's peperomia is found within the semi-evergreen forest at elevations of 650 feet and is restricted to the large granodiorite boulders and shady rocky forest of Monte Resaca and Flamenco.
- Cobana negra (*Stahlia monosperma*) is an evergreen tree that reaches 25 to 50 feet in height and 1 to 1.5 feet in diameter. It is endemic to Puerto Rico and Hispaniola. Cobana negra inhabits brackish, seasonally-flooded wetlands with a mangrove component, the edge of salt flats or shallow lagoons, and remnants of mangrove forests and salt flats. This species is limited to slightly elevated microsites not occupied by mangroves.
- St. Thomas pricklyash (*Zanthoxylum thomsonianum*) is a small tree or tall shrub that grows to 20 feet in height and 4 inches in diameter. It is endemic to Puerto Rico and two of the United States Virgin Islands. St. Thomas pricklyash occurs in semi-deciduous forests with an evergreen component, including shaded rocky (volcanic) forests and dense pristine limestone forests. This habitat type is composed of canopy species with little groundcover.
- Green sea turtles (*Chelonia mydas*) are generally found in relatively shallow waters inside reefs, bays, and inlets, and are attracted to lagoons and shoals with an abundance of marine grass and algae. The Atlantic subpopulation nests on various islands in the Caribbean, typically on sloped, open beaches with minimal disturbance. Hatchlings and juveniles are primarily carnivorous while adults are strictly herbivorous, feeding primarily on sea grass and algae.
- Leatherback sea turtles (*Dermochelys coriacea*) spend most of their time in the open ocean but also forage in coastal waters, feeding exclusively on jellyfish and other soft-bodied marine animals. Females nest on tropical and subtropical beaches and tend to avoid beaches protected by coral reefs.
- Hawksbill sea turtles (*Eretmochelys imbricata*) are widely distributed throughout the Caribbean and western Atlantic Ocean. Adults spend most of their time in shallow waters except when migrating. The hawksbill feeds primarily on sponges and other invertebrates. Hawksbills usually nest high up on the beach underneath, or in, the beach and dune vegetation on both calm and turbulent beaches. They commonly nest on pocket beaches that have little or no sand.
- Loggerhead sea turtles (*Caretta caretta*) nest on ocean beaches, generally preferring high-energy, steeply sloped, and relatively narrow beaches. Adult loggerheads are generalist carnivores that forage on near-shore benthic invertebrates.
- Kemp's ridley sea turtles (*Lepidochelys kempii*) are distributed throughout the Gulf of Mexico and U.S. Atlantic seaboard, from Florida to New England. Adult turtles primarily occupy muddy or sandy bottoms where prey can be found, which consists mainly of swimming crabs, but may also include fish, jellyfish, and an array of mollusks.

- The Puerto Rican boa (*Epicrates inornatus*) inhabits altered habitats, such as plantations and urban areas, and is widely distributed in Puerto Rico. This species feeds on birds, small mammals, and lizards. This species is typically found in the undisturbed karst areas of northwestern Puerto Rico and frequents rainforests, karst environments, and caves.
- Culebra giant anole (*Anolis roosevelti*) is known to occur in Puerto Rico and the United States and British Virgin Islands, as well as the Culebra National Wildlife Refuge and the Vieques National Wildlife Refuge. The Culebra giant anole occurs in subtropical dry forest with gumbo-limbo, cupey, fig, and thin palm. There is limited information on the Culebra giant anole, but they are thought to be canopy inhabitants that can forage on the ground and sleep on low tree trunks and vine tangles at night.
- The yellow-shouldered blackbird (*Agelaius xanthomus*) prefers coastal subtropical dry forests but is known to frequent mud and salt flats, offshore red mangrove cays, black mangrove forest, lowland pastures (dry coastal forest), suburban areas, and coastal cliffs. The yellow-shouldered blackbird prefers black mangrove forests for nesting, where it does so in loose colonies. The yellow-shouldered blackbird is omnivorous, but primarily eats insects, and is known to eat arachnids, mollusks, and plant matter (fruits, seeds, and nectar).
- The piping plover (*Charadrius melodus*) is listed as threatened throughout its range (except in the Great Lakes watershed where it is listed as endangered), which includes its wintering grounds in the Caribbean. Piping plovers feed on beaches and barrier islands with very sparse vegetation, primarily on intertidal beaches, sand flats, and mud flats. The piping plover feeds primarily on worms, crustaceans, insects, and occasionally bivalve mollusks within the intertidal zone. The piping plover is a rare winter visitor to Puerto Rico, from August through April.
- The roseate tern (*Sterna dougallii dougallii*) occurs as two widely separated breeding populations, of which the federally-threatened Caribbean population occurs in Puerto Rico. The roseate tern feeds by plunge-diving for fish. It is much more marine than other terns; it may infrequently bathe in freshwater but does not feed in freshwater. Sand bars and shoals exposed during low tides are favored habitats for resting and roosting, while nesting primarily occurs on small offshore islands, rocks, cays, and islets.
- The West Indian manatee (*Trichechus manatus*) is a large, herbivorous marine mammal that feeds opportunistically on a wide variety of submerged, floating, and emergent vegetation, although sea grass appears to be a staple of the diet in coastal areas. In Puerto Rico, the manatee is most abundant along the southern and eastern coasts. Manatees often use secluded canals, creeks, embayments, and lagoons, particularly near the mouths of coastal rivers and sloughs, for feeding, resting, and other activities.
- Sperm whales (*Physeter microcephalus*) are the largest of the toothed whales. Males can reach about 52 feet and may weigh as much as 45 tons. Sperm whales are found throughout the world's oceans in deep waters between about 60° N and 60° S latitudes, their distribution dependent upon their food source and suitable conditions for breeding, and varies with the sex and age composition of the group. Sperm whales show a strong preference for deep waters, especially in areas with high seafloor relief. In waters along the U.S. east coast, the overall distribution is centered along the shelf break and over the continental slope at depths of 90 to 1,830 meters. Sperm whales feed primarily on large- and medium-sized squid, but other prey items include other cephalopods, such as octopus, and medium- and large-sized demersal fish, such as rays and sharks.
- Blue whales (*Balaenoptera musculus*) can grow up to about 90 feet and can weigh more than 330,000 pounds. The overall range of blue whales in the North Atlantic extends from the subtropics north to Baffin Bay and the Greenland Sea. The blue whale is considered an occasional visitor in U.S. Atlantic waters which may represent the current southern limit of its feeding range, though strandings have been recorded as far south as the Caribbean and the Gulf of Mexico. The food of blue whales in the North Atlantic has been reported to consist entirely of krill.

- Fin whales (*Balaenoptera physalus*) are the second-largest species of whale, with a maximum length of about 75 feet, and can weigh between 80,000-160,000 pounds. Fin whales are found in deep, offshore waters of all major oceans, primarily in temperate to polar latitudes, and less commonly in the tropics. In the western Atlantic, they winter from the edge of sea ice (near the Gulf of St. Lawrence) south to the Gulf of Mexico and the West Indies. Fin whales in the North Atlantic eat pelagic crustaceans (mainly euphausiids or krill) and schooling fish such as capelin, herring, and sand lance.
- Sei whales (*Balaenoptera borealis*) can reach lengths of about 40-60 feet and weigh 100,000 pounds. They undertake seasonal north-south movements, wintering at relatively low latitudes and summering at relatively higher latitudes. Throughout their range, sei whales occur predominantly in deep water; they are most common over the continental slope, shelf breaks, and deep ocean basins situated between banks. In the North Atlantic, they reportedly feed primarily on calanoid copepods, with a secondary preference for euphausiids.
- The Nassau grouper (*Epinephelus striatus*) is a long-lived, late-maturing perch-like bony fish, which can grow up to 4 feet long and weigh over 50 pounds. It is common on offshore rocky bottoms and coral reefs throughout the Caribbean. They inhabit high-relief coral reefs and rocky bottoms from nearshore to a depth of 100 meters and rest on or near the bottom, with juveniles inhabiting seagrass beds and patch reefs. It is solitary except for when it forms spawning aggregations. The adult Nassau grouper is an opportunistic ambush predator, feeding mainly on fish, shrimps, crabs, lobsters, and octopuses.
- The oceanic whitetip shark (*Carcharhinus longimanus*) can grow up to 11.25 feet in length and weigh over 500 pounds. It is a pelagic species that lives near the surface in warm waters in the open ocean, usually well offshore. In the Western Atlantic, oceanic whitetips occur from Maine to Argentina, including the Caribbean and Gulf of Mexico. Oceanic whitetip sharks are top level predators in open ocean ecosystems feeding mainly on fish and cephalopods, but studies have also reported that they consume sea birds, marine mammals, other sharks and rays, molluscs, and crustaceans.
- The scalloped hammerhead shark (*Sphyrna lewini*) can grow up to 11 feet long and weigh up to 335 pounds. It is a coastal pelagic species that can also be found in ocean waters and occurs over continental and insular shelves and adjacent to deeper water. It has been observed close inshore and even entering estuarine habitats, as well as offshore to depths of 1,680 feet. They can occur as solitary individuals, pairs, or in schools. They feed primarily on a wide variety of fishes such as sardines, herring, anchovies, conger eels, silversides, halfbeaks, mullet, barracuda, Spanish mackerel, jacks, grunts, parrotfish, smaller sharks and rays, and also feed on invertebrates including squid, octopus, shrimp, crabs, and lobsters.
- The giant manta ray (*Manta birostris*) can grow up to 15 feet in length and weigh 5,300 pounds. It is a migratory species found worldwide in tropical, subtropical, and temperate bodies of water. It is commonly found offshore, in oceanic waters, and near productive coastlines. They are slow-growing and have small, highly fragmented populations that are sparsely distributed. Giant manta rays utilize sandy bottom habitat and seagrass beds, as well as shallow reefs, and the ocean surface both inshore and offshore. Manta rays are filter-feeders which prey exclusively on zooplankton.
- Elkhorn coral (*Acropora palmata*) is found in shallow water throughout the Caribbean, typically in 3 to 15 feet of water. It is the largest acroporid coral found in the Atlantic/Caribbean. Branches are up to 20 inches across and range in thickness from 1.6 to 2 inches, with individual colonies growing to 6.5 feet high. Branches are white near the growing edges and brown to tan away from the growing area. Colonies are flattened to near round with frond-like branches that typically radiate outward from a central trunk.
- Staghorn coral (*Acropora cervicornis*) is found in shallow water throughout the Caribbean, typically in 15 to 65 feet of water. Colonies are antler-like with cylindrical branches that are straight or slightly curved. Branches range in diameter from 0.10 to 2 inches, and tissue color ranges from golden yellow to medium brown. The growing tips of staghorn coral tend to be lighter or lack color. Colonies typically exist as isolated branches and small thickets 1.6 to 3 feet across.

- Lobed star coral (*Orbicella annularis*) is found at shallow and intermediate depths from 3 to 60 feet. It occurs in colonies of closely packed, separate lobes or columns, with smooth but irregular surfaces. Large colonies can reach 9 to 12 feet in diameter.
- Mountainous star coral (*Orbicella faveolata*) is found on both the back reef and fore reef slopes of fringing reefs at depths of 32 to 295 feet. It grows in large mounds or sheets (in deeper water), and the surface can be smooth, bumpy, or ridged in generally linear patterns. It can grow very tall or wide (12 to 15 feet).
- Boulder star coral (*Orbicella franksi*) typically grows on fore reefs at depths of up to 100 feet and has large, unevenly-arranged polyps that make the surface of the coral look irregular. Some polyps are pale or lack zooxanthellae. Forms as irregular mounds, crusts, or thick plates, and can grow to 9 to 12 feet across.
- Pillar coral (*Dendrogyra cylindrus*) is typically found in fore reef habitat, at depths of 3 to 60 feet. It forms cylindrical columns on top of thick encrusting bases. The colony may appear “furry” if the tentacles are out, which is typical in the daytime. It can grow to 10 feet across and high.
- Rough cactus coral (*Mycetophyllia ferox*) prefers sheltered and low light environments, either in slightly turbid water or deeper water (16 to 295 feet), along relatively steep slopes. It forms a thin, encrusting plate and has valleys and walls of contrasting colors. It may grow up to 2 feet across.

Table 1. Federally Listed Species Occurring or Potentially Occurring at Vieques

Common Name	Scientific Name	Federal Status	Commonwealth Status	Range and Habitat
Plants				
Vahl's boxwood	<i>Buxus vahlii</i>	Endangered	Endangered	Remnants of dry forest, especially on limestone. Also semi-evergreen seasonal forest on limestone restricted to ledges and ravines.
Thomas' lidflower	<i>Calyptanthus thomasi</i>	Endangered	Endangered, Critical Element	Shaded rocky forest (volcanic), Monte Pirata summit.
No common name	<i>Catesbaea melanocarpa</i>	Endangered	Endangered	Subtropical dry forest, and remnants of dry forest, especially on limestone.
Puerto Rican senna	<i>Chamaecrista glandulosa</i> var. <i>mirabilis</i>	Endangered	Endangered	Sandy areas adjacent to mangroves; previously found associated with mangroves in southwest portion of former Navy lands, Vieques.
Puerto Rican manjack	<i>Varronia rupicola</i>	Threatened	Critical Element	Subtropical dry forest, dry limestone forest.
Woodbury's stopper	<i>Eugenia woodburyana</i>	Endangered	Endangered, Critical Element	Remnants of dry forest. Currently known only from the Sierra Bermeja in the municipalities of Cabo Rojo and Lajas and from the Guanica Commonwealth Forest in Guanica, all in southwestern Puerto Rico, and subtropical dry forest life zone.
Beautiful goetzea	<i>Goetzea elegans</i>	Endangered	Endangered	Forested areas within 150 feet of streams in alluvial soils, along quebradas or seasonal water courses, gallery forests.
No common name	<i>Leptocereus grantianus</i>	Endangered	Critical Element	Endemic to Culebra, subtropical dry forest, dry coastal forest and coastal cliffs.
Cana gorda girdlepod	<i>Mitracarpus polycladus</i>	Endangered	Endangered	Open dry limestone forest with exposed rocky plateau.
Wheeler's peperomia	<i>Peperomia wheeleri</i>	Endangered	Endangered	Shaded rocky forest (volcanic).
Cobana negra	<i>Stahlia monosperma</i>	Threatened	Vulnerable	Edge of salt flats in brackish, seasonally flooded wetlands, remnants of mangrove forests and salt flats.
St. Thomas pricklyash	<i>Zanthoxylum thomasianum</i>	Endangered	Endangered	Shaded rocky forest (volcanic) and dense pristine limestone forest.

Table 1. Federally Listed Species Occurring or Potentially Occurring at Vieques

Common Name	Scientific Name	Federal Status	Commonwealth Status	Range and Habitat
Reptiles				
Green sea turtle	<i>Chelonia mydas</i>	Threatened	Endangered, Critical Element	Typically inhabits fairly shallow water; nests on sloped open beaches with minimal disturbance.
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	Endangered, Critical Element	Most often found in the open ocean; nests on beaches backed with vegetation, sloped sufficiently, and close to deep and generally rough seas.
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered	Endangered, Critical Element	Rocky areas, reefs, lagoons, and narrow creeks; typically nests on beaches with vegetated areas.
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened	Vulnerable, Critical Element	Often feeds in coral reefs and hard bottom habitats; nests on open beaches or along narrow bays.
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered	--	Distributed throughout the Gulf of Mexico and U.S. Atlantic seaboard, from Florida to New England. Occupy muddy or sandy bottoms, foraging on swimming crabs, fish, jellyfish, and mollusks.
Puerto Rican boa	<i>Epicrates inornatus</i>	Endangered	Vulnerable, Critical Element	Forested volcanic and limestone (karst) hills, up to 1,150 meters in elevation.
Culebra giant anole	<i>Anolis roosevelti</i>	Endangered	Critically Endangered, Critical Element	Vieques in forested areas.
Birds				
Yellow-shouldered blackbird	<i>Agelaius xanthomus</i>	Endangered	Endangered, Critical Element	Coastal forest, mangroves.
Piping plover	<i>Charadrius melodus</i>	Endangered	Critically Endangered, Critical Element	Mud and salt flats, sandy beaches.
Roseate tern	<i>Sterna dougallii dougallii</i>	Threatened	Vulnerable, Critical Element	Coastal waters, bays, and estuaries; nests on sandy beaches, open bare ground, and grassy areas and under tumbled boulders primarily on islands.

Table 1. Federally Listed Species Occurring or Potentially Occurring at Vieques

Common Name	Scientific Name	Federal Status	Commonwealth Status	Range and Habitat
Mammals				
West Indian manatee	<i>Trichechus manatus</i>	Endangered	Endangered, Critical Element	Marine, estuarine, and freshwater habitats, especially calm coastal waters with seagrass beds, river outlets.
Sperm whale	<i>Physeter macrocephalus</i>	Endangered	--	Deep water passages between the islands and along continental slopes.
Blue whale	<i>Balaenoptera musculus</i>	Endangered	--	Found worldwide, from sub-polar to sub-tropical latitudes, typically in coastal waters but generally more offshore than other whales.
Fin whale	<i>Balaenoptera physalus</i>	Endangered	--	Found in deep, offshore waters of all major oceans, primarily in temperate to polar latitudes. They are less common in the tropics.
Sei whale	<i>Balaenoptera borealis</i>	Endangered	--	Found in subtropical, temperate, and subpolar waters around the world, in deeper waters far from the coastline.
Fish				
Nassau grouper	<i>Epinephelus striatus</i>	Threatened	--	Adults found in offshore rocky bottoms and coral reefs throughout the Caribbean; juveniles inhabit seagrass beds and patch reefs.
Ocean whitetip shark	<i>Carcharhinus longimanus</i>	Threatened	--	Found worldwide in warm tropical and subtropical waters. A pelagic species that lives near the surface in the open ocean.
Scalloped hammerhead shark	<i>Sphyrna lewini</i>	Threatened	--	A circumglobal coastal pelagic species, also found in ocean waters and over continental and insular shelves and adjacent to deeper water.
Giant manta ray	<i>Manta birostris</i>	Threatened	--	Found worldwide in tropical, subtropical, and temperate waters. Commonly found offshore, in oceanic waters and near productive coastlines.

Table 1. Federally Listed Species Occurring or Potentially Occurring at Vieques

Common Name	Scientific Name	Federal Status	Commonwealth Status	Range and Habitat
<i>Invertebrates</i>				
Elkhorn coral	<i>Acropora palmata</i>	Threatened	Endangered, Critical Element	Elkhorn coral can be found in shallow water throughout the Caribbean.
Staghorn coral	<i>Acropora cervicornis</i>	Threatened	Endangered, Critical Element	Staghorn coral can be found in relatively shallow water (typically 15 to 65 feet) throughout the Caribbean.
Lobed star coral	<i>Orbicella annularis</i>	Threatened	--	Found at shallow and intermediate depths, from 3 to 60 feet.
Mountainous star coral	<i>Orbicella faveolata</i>	Threatened	--	Found on both the back reef and fore reef slopes of fringing reefs at depths of 32 to 295 feet.
Boulder star coral	<i>Orbicella franksi</i>	Threatened	--	Typically grows on fore reefs at depths of up to 100 feet.
Pillar coral	<i>Dendrogyra cylindrus</i>	Threatened	--	Typically found in fore reef habitat, at depths of 3 to 60 feet.
Rough cactus coral	<i>Mycetophyllia ferox</i>	Threatened	--	Prefers sheltered and low light environments, either in slightly turbid water or deeper water (16 to 295 feet), along relatively steep slopes.

Appendix C

Summary of Records Reviewed

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
10/9/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG127, Box 705	Records of the U.S. Marine Corps Command Chronologies	National Archives Textual Files	Marine Corps command chronologies for 1967, 1971, 1972, 1973, 1974, and 1975. Chronologies document a wide variety of activities including community involvement, military training operations, airfield operations. A fire and rescue demonstration was performed by the crash crew at the Garcia airfield on February 21, 1967. A firefighting and rescue techniques presentation was presented to approximately 30 civilian volunteers of the Caribbean Civil Defense Agency on December 15, 1967. The command chronologies for 1972, 1973, 1974, and 1975 document the number of fixed wing and rotary wing aircraft operating out of the Camp Garcia airfield within each year. In September 1971, the Marine Corps received two 530B fire trucks, and disposed of two existing trucks of the same type. In October 1972, the Marine Corps received two fire truck MB5 tankers, and disposed of two existing trucks of the same type.
10/9/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG38, Box 519	Records of the Office of the Chief of Naval Operations	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/9/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG38, Box 41	Records of the Office of the Chief of Naval Operations. Mine Warfare Section. Studies, Report, and Other Records.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/9/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG38, Box 17	Records of the Office of the Chief of Naval Operations. Mine Warfare Section. Studies, Report, and Other Records.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 595	Bureau of Ordnance, General Correspondence, Confidential 1944.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 1244	Bureau of Ordnance, General Correspondence, Restricted 1944.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 18	Bureau of Ordnance, Office of Administration, General Subject Files 1945.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 1209	Bureau of Ordnance, Office of Administration, Construction and Procurement Subject Files 1945.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 1546	Bureau of Ordnance, Office of Administration, General Subject Files 1945.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 390	Bureau of Ordnance, Office of Administration, General Subject Files 1946.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 215	Bureau of Ordnance, General Correspondence, Unclassified and Confidential 1948-1959.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 653	Bureau of Ordnance, General Correspondence, Unclassified and Confidential 1944-1959.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 3	Bureau of Ordnance, Office of Administration, Construction and Procurement Subject Files, 1946.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 1220	Bureau of Ordnance, Office of Administration, Construction and Procurement Subject Files, 1945.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG74, Box 21	Bureau of Ordnance, Office of Administration, General Subject Files 1944.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 117	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 110	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 169	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 439	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 440	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 441	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 474	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 629	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 644	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 710	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 724	Bureau of Naval Personnel, Administrative and Management Division, General Correspondence 1946-1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 971	Bureau of Naval Personnel, General Correspondence 1941-1945.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 1018	Bureau of Naval Personnel, General Correspondence 1941-1945.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 1025	Bureau of Naval Personnel, General Correspondence 1941-1945.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 1584	Bureau of Naval Personnel, General Correspondence 1941-1945.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 1077	Bureau of Naval Personnel, Administration and Management Division, General Correspondence 1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 818	Bureau of Naval Personnel, Administration and Management Division, General Correspondence 1946-1960. 1955.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 797	Bureau of Naval Personnel, Administration and Management Division, General Correspondence 1946-1960. 1955.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 884	Bureau of Naval Personnel, Administration and Management Division, General Correspondence 1946-1960. 1956.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 895	Bureau of Naval Personnel, Administration and Management Division, General Correspondence 1946-1960. 1956.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 941	Bureau of Naval Personnel, Administration and Management Division, General Correspondence 1946-1960. 1957.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 987	Bureau of Naval Personnel, Administration and Management Division, General Correspondence 1946-1960. 1958.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 1034	Bureau of Naval Personnel, Administration and Management Division, General Correspondence 1946-1960. 1959.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG24, Box 1070	Bureau of Naval Personnel, Administration and Management Division, General Correspondence 1946-1960. 1960.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/10/2018	National Archives II, College Park, Maryland Textual Records, 2nd Floor, RG313, Container 12.	Naval Operating Forces, Commander-in-Chief, Atlantic Fleet (CINCLANT). Secret and Top Secret General Administration Files. 1941-1949.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Maps/Photos, 3rd Floor, RG71, 363-9.1.	Maps for Fleet Operating Base Roosevelt Roads, Vieques, Puerto Rico.	National Archives Maps/Photos	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Maps/Photos, 3rd Floor, AMS Maps E032.	331/11/11/19 – Aerial Photos Vieques 1949.	National Archives Maps/Photos	Reviewed – Nothing relevant to firefighting operations on Vieques

Appendix C
Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
10/11/2018	National Archives II, College Park, Maryland Maps/Photos, 3rd Floor, AMS Maps E835-A.	331/11/12/2 – Topographic maps for select areas of Vieques 1949.	National Archives Maps/Photos	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Maps/Photos, 3rd Floor, RG181	Shore Establishment Facility Drawings, Puerto Rico, Roosevelt Roads.	National Archives Maps/Photos	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Maps/Photos, 3rd Floor, RG181	Shore Establishment Facility Drawings, Puerto Rico, Vieques.	National Archives Maps/Photos	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Textual records, 2nd Floor, RG337, 6 boxes	Operation PORTREX Training Operations File 1949-1950.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Textual records, 2nd Floor, RG71, Box 1106	Bureau of Yards and Docks. Naval Property Case Files, 1941-1958. Puerto Rico.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Textual records, 2nd Floor, RG71, Box 1107	Bureau of Yards and Docks. Naval Property Case Files, 1941-1958. Puerto Rico.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Textual records, 2nd Floor, RG71, Box 1108	Bureau of Yards and Docks. Naval Property Case Files, 1941-1958. Puerto Rico.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Textual records, 2nd Floor, RG71, Box 1109	Bureau of Yards and Docks. Naval Property Case Files, 1941-1958. Puerto Rico.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
10/11/2018	National Archives II, College Park, Maryland Textual records, 2nd Floor, RG71, Box 1110	Bureau of Yards and Docks. Naval Property Case Files, 1941-1958. Puerto Rico.	National Archives Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 1523	Command File, Post 1 Jan 1946. Shore Establishment. Roosevelt Roads.	Textual Files	Naval Command Histories/Annual Reviews for 1952, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1968, 1969, 1970, 1971, 1973. Chronologies document a wide variety of activities including community involvement, military training operations, airfield operations. On June 6, 1965, Structural Fire Company #3 was established at the Vieques Island Ammunition complex, consisting of six structural firefighters equipped with one 500 gallon per minute brush truck and augmented by a military fire brigade.
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 113	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 114	Records of the Assistant Secretary of the Navy (I&E) 1961-2003	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 115	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 116	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 117	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 118	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 119	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 120	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 121	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 122	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/13/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 123	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/14/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 124	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
11/14/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard Box 125	Records of the Assistant Secretary of the Navy (I&E) 1961-2003.	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/14/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard	Post 1974 Command File Shore Est., Roosevelt Roads, Navy Legal Services Office Detachment, Roosevelt Roads Naval Station	Textual Files	Roosevelt Roads Annual Reviews for 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, and 1987. Nothing relevant to firefighting operations on Vieques.
11/14/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard	Roosevelt Roads PR: Roosevelt Roads Naval Reserve Center and Rosomont...[illegible]	Textual Files	Roosevelt Roads Annual Reviews for 1990, 1991, 1992, 1995, 1996, and 1997. The 1997 command chronology notes that 11 civilian members of the fire department were present at Vieques NASD.
11/15/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard	Post 1974 Command File Shore Establishment. Atlantic Fleet Training Unit. Atlantic Fleet Weapons Training Facility	Textual Files	Atlantic Fleet Weapons Training Facility Command History for 1974, 1975, 1976, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, and 1989. Nothing relevant to firefighting operations on Vieques.
11/15/2018	Naval History and Heritage Command, Building 57, Washington Navy Yard	Post 1990 Command File Shore Establishment. Atlantic Fleet Weapons Training Facility.	Textual Files	Atlantic Fleet Weapons Training Facility Command History for 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, and 2001. Nothing relevant to firefighting operations on Vieques.
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 556, Box 1	CHINFO Vieques	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 556, Box 2	CHINFO Vieques	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 556, Box 3	CHINFO Vieques	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 556, Box 4	CHINFO Vieques	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 556, Box 5	CHINFO Vieques	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 556, Box 6	CHINFO Vieques	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 556, Box 7	CHINFO Vieques	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 556, Box 8	CHINFO Vieques	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 556, Box 9	CHINFO Vieques	Textual Files	Reviewed – Nothing relevant to firefighting operations on Vieques
11/15/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard AR 180, Box 288	Aviation Commands, 1941-1952, Roosevelt Roads 1949.	Textual Files	Roosevelt Roads Air Station historical report for period ending June 1949 and includes annual maneuvers in the Vieques area. Nothing relevant to firefighting operations on Vieques.

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Summary of Records Reviewed

Review Date/Time	Data Source	Document Title	Nature of Document/File	Notes
11/16/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard Box 170	Shore Commands – Active. Roosevelt Roads, COMFAIRCARIB 1968-1992.	Textual Files	COMNAVACTSCARIB/COMFAIRCARIB command histories for 1968, 1972, 1977, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, and 1992 including lists of significant events and key exercises. Nothing relevant to firefighting operations on Vieques
11/16/2018	Naval History and Heritage Command, Building 200, Washington Navy Yard Box 172	Shore Commands – Active. Roosevelt Roads, NS (Naval Station).	Textual Files	Roosevelt Roads Naval Station command histories for 1981, 1982, 1984, 1985, 1986, 1988, and 1989 including lists of significant events and key exercises. Nothing relevant to firefighting operations on Vieques.
10/3/2018	National Archives online database	https://catalog.archives.gov/	National Archives	Reviewed – Nothing relevant to firefighting operations on Vieques, List of search parameters available in Table 5-1 .
10/4/2018	iNFADS OEL Database	FACILITY_QUERY_Vieques	Excel document	Reviewed – Nothing relevant to firefighting operations on Vieques
3/8/2019	Naval Safety Center	Puerto Rico Events - WHAMRS	Excel document	Reviewed – Nothing relevant to firefighting operations on Vieques

Acronyms:

CHINFO	U.S. Navy Chief of Information
CINCLANT	Commander-in-Chief, U.S. Atlantic Fleet
COMFAIRCARIB	Commander, Fleet Air, Caribbean
COMNAVACTSCARIB	Commander Naval Activities, Caribbean
MB5 TANKER	Military fire and crash truck built by Oshkosh

Appendix D

Interview Record

FAS Preliminary Assessment Questionnaire

Fire Chief or Designees

Name:	Jose Ortiz
Title:	Vieques Firefighter (1998 until the Base closed, then then moved to Roosevelt Roads until 2005)
Date of Interview:	January 7, 2019

Note:

If you can recommend additional contacts that you feel may be able to provide additional information, please provide the name and as much contact information as you have. Thank you.

AFFF Purchasing, Handling, and Storage

1. Was perfluorinated AFFF historically or currently used on the base? If so, provide any information regarding where and when.

Yes, 50-gallons of AFFF was stored on each of the two structural fire trucks on Vieques. The fire trucks were used to support operations at the two Vieques helicopter pads, but not at the airfield. The helo pads were located on both sides of the Base - one at Camp Garcia and another at the NAS. The airfield on Vieques was abandoned and only used for emergency landings and practice. The fire trucks were also used on standby to support LCU units (the boats that bring the trucks on the main base). The fire trucks equipped with AFFF were stored at the fire station on the west side of Vieques, right next to the dorms.

2. To the best of your knowledge, where has the AFFF solution been handled (currently and historically) (such as mixed, contained, released for calibration, transferred)?

The AFFF concentrate was stored in 5-gallon containers. The fire trucks were filled with the AFFF concentrate on the ramp in front of the fire station, either by dumping it into the tank on the top of the tank or by using an induction pump to fill the truck.

3. Where is AFFF and AFFF equipment stored on base (currently and historically), and in what approximate quantities? (Please show locations on map provided or describe locations).

No AFFF currently stored on Base, as the installation is closed. The 5-gallon AFFF concentrate containers were stored in a Conex less than 100 feet from the right side of the fire station, as you look at the bays.

- a. Please describe procedures for how AFFF equipment is cleaned/decontaminated.

The structural fire trucks were flushed once a month, but no foam was used. Pump tests were also performed once a year, but no foam was used.

- b. To the best of your knowledge, where has the equipment currently or formerly been maintained?

The fire trucks were maintained at the motor pools - one at Camp Garcia and the other on the west end of the island. (Mr. Ortiz circled the former motor pool locations on an aerial photograph.)

Firefighting Training Areas

1. As part historical or current operational training, are any current or historical Firefighting Training Areas (FTAs) present on the facility? If yes, please show the location/s of the FTAs on the map provided.

There were no fire training pits on Vieques.

2. To the best of your knowledge, what are/were the years of operation for each FTA you identified in your answer to Question #1 above?

Not applicable.

3. How many FTAs are currently active? Inactive (historical in nature)? To the extent possible, please specify which are active versus historical.

Not applicable.

4. To the best of your knowledge, were fuels/flammables other than "typical" (such as JP-5, #2 Fuel Oil) used at the FTAs? If yes, what was used?

Not applicable.

5. For inactive FTAs, to the best of your knowledge, when was the last time that fire training using AFFF was conducted at each one?

Not applicable.

6. When AFFF was used during a fire training exercise, to the best of your knowledge, was the AFFF used contained and disposed, and if so, how was the AFFF cleaned up and disposed?

Not applicable.

7. To the best of your knowledge, are current and historical FTAs lined? If so, with anything other than concrete?

Not applicable.

Hangars and Buildings

1. To the best of your knowledge, which areas (such as hangars, buildings, fuel or hazardous waste storage areas) historically had or currently have automated and/or manually-activated AFFF fire suppression systems?

There were no buildings on Vieques with AFFF fire suppression systems.

2. To the best of your knowledge, please describe the procedure on how the suppression systems are supplied with AFFF (that is, is system contained within the building, or are there separate buildings that serve to mix AFFF to supply one or more hangers with suppression systems).

Not applicable.

3. Please describe the fire suppression system layout/activation process and if available, provide system plans or drawings.

Not applicable.

4. When the fire suppression system engages/or engaged, what is the current, and if different, historical response process for addressing AFFF used (that is, was AFFF cleaned up after being used and how)?
Not applicable.
5. To the best of your knowledge, have there been inadvertent releases of AFFF from hangar fire suppression systems (such as equipment failure)? If so, please provide additional details (such as when, in which hangars/buildings, could the release be quantified, was the release removed or cleaned up)?
Not applicable.
6. To the best of your, knowledge, who was responsible for current or historical routine maintenance of the AFFF system/s? To the best of your knowledge, were maintenance records kept, and if so where are they located?
Not applicable.
7. To the best of your knowledge, for any historical activation (accidental, testing, or in response to an emergency) of AFFF systems within hangars and/or buildings, provide any information regarding the fate of the release (that is, did releases occur near drainage swales; were they washed to a pervious surface; did they occur on poorly maintained pervious surfaces [cracked concrete, porous asphalt]; were they directed to a storm drain, trench drain, oil/water separator [OWS], wastewater treatment plant).
Not applicable.

Trucks and Trailers

1. Provide a list of current and historical parking/storage areas for AFFF equipment.
Fire trucks containing AFFF were stored at the fire station on the west end of Vieques.
2. To the best of your knowledge, were the trucks currently and historically tested for spray patterns to make sure equipment is working properly? If so, how often and where are/were these spray tests performed?
Spray testing was not conducted with foam.
3. To the best of your knowledge, what is the procedure on how trucks and trailers are/were supplied with AFFF?
The pumper trucks were refilled with 5-gallon AFFF concentrate containers on the ramp in front of the fire station.
 - a. Where does/did this resupply occur?
It is possible that some AFFF was inadvertently released on the ramp in front of the fire station.
 - b. Is/was there secondary containment in this area?
No.
 - c. What happens to the empty AFFF containers?
They were rinsed out and taken home by the firefighters to be used for water storage.

4. To the best of your knowledge, what is the procedure for how these vehicles are/were cleaned, and where is/was vehicle cleaning performed (currently as well as historically)?

Vehicles were washed on the ramp in front of the fire station.

Records, Spill logs, Historical Information

1. To the best of your knowledge, are there any current or historical data/documents/records associated with AFFF that we may review/copy (such as reports/work plans, historical or operational records, incident reports, crash data, inspection reports, AFFF spill logs, documentation of AFFF releases, photo interpretation)?

No.

2. Do you have recollection or records of AFFF being used in response to the following:

- a. Fuel releases to prevent fires

No knowledge of AFFF use during a response at Vieques.

- b. Emergency response sites (such as plane, helicopter, or vehicle crash sites and fires)

No.

- c. Emergency runway landings where foam might have been used as a precaution

No.

- d. Other (such as air show demonstrations, AFFF "salutes")

No.

3. If yes to #2, please provide any information you have regarding how and if the releases were addressed and how any released material (including foam and contaminated soil) was disposed?

Not applicable.

4. In the potential absence of written records or incomplete written records, can you provide anecdotal/ verbal information and locations of spills or other emergency response incidents where AFFF was used that haven't already been previously discussed?

It is possible that some AFFF was inadvertently released on the ramp in front of the fire station.

5. What are the current and historical storage location(s) of the wreckage from emergency response incidents (if wreckage is stored outside)?

Not applicable as AFFF wasn't used for responses.

Location Information

If not already covered in previous questions, please provide any information on releases of AFFF that may have been diverted to or could have impacted the following items/areas:

1. Stormwater conveyances/outfalls that drain runways, taxiways, and aprons

No known releases of AFFF at this or any of the locations in this section.

2. Stormwater management system (such as drainage swales, outfalls, retention/detention basins)
No.
3. Industrial or sanitary wastewater treatment system (such as storm drain, sanitary sewer, OWS, building and plumbing drains)
No.
4. Water supply wells (such as potable, agricultural, industrial)
No.
5. Large-scale disposal (such as landfilling, land application of WWTP sludge, washing, dumping)
No.
6. Other
No.

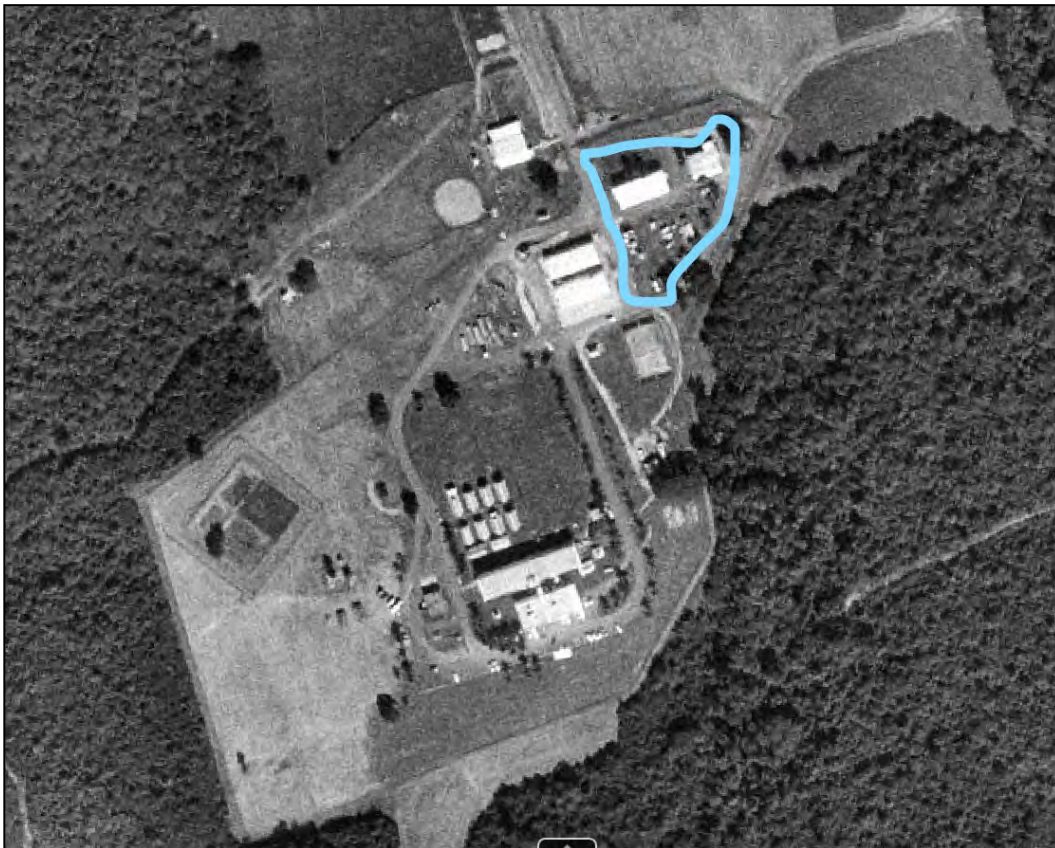
General Information

1. Is there anyone else or other base organization personnel that you would recommend we interview? Name, organization, position, phone number, e-mail.
Angel Carambot, John Ashford, Mark Berkermeir (now at Govens [SIC] [Dobbins] AFB) - no contact information available for any of these individuals.
2. Are there any other tenants/tenant organizations that currently (or historically) use/used AFFF?
No.

Interview conducted by Renee Hunt, CH2M HILL.



Interviewee circled motor pool area within VNTR.



Interviewee circled motor pool area within NASD.

PFAS Preliminary Assessment Questionnaire

Vieques, Puerto Rico

Name:	Kazimieras Prapuolenis
Title:	Assistant Fire Chief MCAS Cherry Point
Date of Interview:	June 1, 2018

Notes:

Please answer the questions based on your direct knowledge of actual activities and not information about standard protocol or supposition of what may have happened. If it is unsure or unknown, please state unknown.

If you can recommend additional contacts that you feel may be able to provide additional information, please provide the name and as much contact information as you have. Thank you.

Firefighting Training Areas

1. On west Vieques there is a building referred to as the Former Power Plant (Building 13), approximately located across the street from the Public Works Area. It was reported that between the 1960s and the 1980s, it was used for fire training operations where diesel fuel was poured over rubber tires inside the building, ignited to simulate structural fires, and extinguished during training operations. Do you have any recollection of AFFF being used at this site?

Mr. Prapuolenis was stationed with the United States Marine Corps at Camp Garcia in 1974 and 1975. He had no information regarding Navy operations in the western portion of Vieques.
2. As part of historical operational training, were any other Firefighting Training Areas (FTAs) present on the facility? If yes, please show the location/s of the FTAs on the map provided.

No knowledge of FTAs on Vieques.
3. To the best of your knowledge, what were the years of operation for each FTA you identified in your answer to Question #2 above?

Not applicable.
4. To the best of your knowledge, were fuels/flammables other than "typical" (such as JP-5, #2 Fuel Oil) used at the FTAs? If yes, what was used?

Not applicable.
5. When AFFF was used during a fire training exercise, to the best of your knowledge, was the AFFF used contained and disposed, and if so, how was the AFFF cleaned up and disposed?

Not applicable.
6. To the best of your knowledge, were historical FTAs lined? If so, with anything other than concrete?

Not applicable.

AFFF Purchasing, Handling, and Storage

1. Where was AFFF and AFFF equipment stored on base, and in what approximate quantities? Was AFFF stored at the former Fire Station? (Please show locations on map provided.)

The Marines never used AFFF on Vieques. The Marine Corps fire trucks were equipped with blood meal foam, and were never converted for use with AFFF. The Marine Corps presence on Vieques ended in 1975. Mr. Prapuolenis had no knowledge of Navy operations and potential AFFF use on Vieques.

- a. Please describe procedures for how AFFF equipment was cleaned/decontaminated.

Not applicable.

- b. To the best of your knowledge, where was the equipment maintained?

Not applicable.

2. Was AFFF stored and handled on the base? If so, provide any information regarding where, when, and what type.

No knowledge of AFFF storage or handling.

- a. If yes, where was AFFF solution handled (such as mixed, contained, released for calibration, transferred)?

Not applicable.

Hangars and Buildings

1. To the best of your knowledge, which areas (such as hangars, buildings, fuel or hazardous waste storage areas) historically had automated and/or manually-activated AFFF fire suppression systems?

Mr. Prapuolenis had no knowledge of AFFF use in any hangars or buildings.

2. There is an area on the eastern side of the runway, which had a Helicopter Maintenance Building. Do you recall any AFFF being used there?

No.

3. The runway itself had a lot of aircraft training. Do you recall an AFFF being used on the runway?

No.

4. There is a helicopter pad located adjacent to OP-1. Do you recall any AFFF being used at that pad?

No.

5. To the best of your knowledge, please describe the procedure on how the suppression systems were supplied with AFFF (that is, is system contained within the building, or are there separate buildings that serve to mix AFFF to supply one or more hangers with suppression systems).

Not applicable.

6. Please describe the fire suppression system layout/activation process and if available, provide system plans or drawings.
Not applicable.
7. When the fire suppression system engages/or engaged, what is the historical response process for addressing AFFF used (that is, was AFFF cleaned up after being used and how)?
Not applicable.
8. To the best of your knowledge, have there been inadvertent releases of AFFF from hangar fire suppression systems (such as equipment failure)? If so, please provide additional details (such as when, in which hangars/buildings, could the release be quantified, was the release removed or cleaned up)?
Not applicable.
9. To the best of your, knowledge, who was responsible for historical routine maintenance of the AFFF system/s? To the best of your knowledge, were maintenance records kept, and if so where are they located?
Not applicable.
10. To the best of your knowledge, for any historical activation (accidental, testing, or in response to an emergency) of AFFF systems within hangars and/or buildings, provide any information regarding the fate of the release (that is, did releases occur near drainage swales; were they washed to a pervious surface; did they occur on poorly maintained pervious surfaces [cracked concrete, porous asphalt]; were they directed to a storm drain, trench drain, oil/water separator [OWS], wastewater treatment plant).
Not applicable.

Trucks and Trailers

1. Provide a list of historical parking/storage areas for AFFF equipment.
Not applicable.
2. To the best of your knowledge, were the trucks tested for spray patterns to make sure equipment is working properly? If so, how often and where are/were these spray tests performed?
Not applicable.
3. To the best of your knowledge, what is the procedure on how trucks and trailers were supplied with AFFF?
 - a. Where did this resupply occur?
Not applicable.
 - b. Was there secondary containment in this area?
Not applicable.
 - c. What happened to the empty AFFF containers?
Not applicable.

4. To the best of your knowledge, what was the procedure for how these vehicles are/were cleaned, and where was vehicle cleaning performed (historically)?

Not applicable.

Records, Spill logs, Historical Information

1. To the best of your knowledge, are there any historical data/documents/records associated with AFFF that we may review/copy (such as reports/work plans, historical or operational records, incident reports, crash data, inspection reports, AFFF spill logs, documentation of AFFF releases, photo interpretation)?

No.

2. Do you have recollection or records of AFFF being used in response to any of the following:

- a. Fuel releases to prevent fires

No.

- b. Emergency response sites (such as plane, helicopter, or vehicle crash sites and fires)

No.

- c. Emergency runway landings where foam might have been used as a precaution

No.

- d. Other (such as air show demonstrations, AFFF "salutes")

No.

3. What are the historical storage location(s) of the wreckage from emergency response incidents (if wreckage is stored outside)?

Mr. Prapuolenis had no knowledge of wreckage storage locations on Vieques.

4. If yes to #2, please provide any information you have regarding how and if the releases were addressed and how any released material (including foam and contaminated soil) was disposed?

Not applicable.

5. In the potential absence of written records or incomplete written records, can you provide anecdotal/verbal information and locations of spills or other emergency response incidents where AFFF was used (such as hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, wastewater treatment plants, landfills/disposal areas, and AFFF ponds/lagoons)?

No.

General Information

1. Is there anyone else or other base organization personnel that you would recommend we interview? Name, organization, position, phone number, e-mail.

No.

2. Are there any other organizations that historically use AFFF?

Mr. Prapuolenis was not aware of any entities on Vieques that used AFFF.

Interview conducted by Renee Hunt, CH2M HILL.

Interview Log

1. Cerbulo Concepcion – Naval Activity Puerto Rico (NAPR) crash crew. Previous phone interviews for NAPR by Pedro Ruiz and then Renee Hunt in March 2017. Crash crew from 1982-2004.
2. Chefren Rodriguez – Civilian Assistant Fire Chief at the Base and Crash Crew Fire Stations. Previous phone interview by Bryan Burkingstock in April 2017 for NAPR. NAPR fire personnel from 1971-1999.
3. Jose Hernandez – NAPR crash crew. Previous phone interview for NAPR by Bryan Burkingstock in March 2017. Crash crew at facility from 1984-2004.
4. Jose Ortiz – Former Vieques Firefighter that now lives in Florida. Has not been previously interviewed.
5. Madeline Rivera-Ruiz – Vieques NAVFAC contact.
6. Adalberto Molina – Water Operations Manager for the former Naval Station Roosevelt Roads (NSRR). Has not been previously interviewed.

December 17, 2018

0941 – Called Cerbulo Concepcion – left a message with my call back information.

0949 – Called Chefren Rodriguez – left a message with my call back information.

1027 – Called Jose Hernandez – phone rang and rang, never went to voicemail.

1032 – Called Jose Ortiz – left a message with my call back information.

January 7, 2019

1515 – Called Jose Ortiz – conducted a partial interview. He was called away – will continue later.

1552 – Called Cerbulo Concepcion – directly to voicemail, left a message.

1638 – Finished up Jose Ortiz interview. Need to send him maps of Camp Garcia and the NASD so he can pinpoint the location of the motor pools. Also need to ask about off-base fire response events.

January 8, 2019

0912 – Email sent to Jose Ortiz with attached aerial photographs for Camp Garcia and NASD.

1107 – Called Chefren Rodriguez – Chefren not home but left my name and number for him to call me back.

1111 – Called Jose Hernandez – phone rang and rang, never went to voicemail.

1113 – called Cerbulo Concepcion – left a message.

January 15, 2019

0747 – Jose Ortiz emailed back the two aerial photographs of Camp Garcia and NASD and circled the motor pool areas.

February 25, 2019

1039 – Called Jose Hernandez – phone rang and never went to voicemail.

1042 – Called Chefren Rodriquez – His wife answered the phone and indicated that Mr. Rodriquez is not interested in being interviewed. Based on this response, no additional calls will be made to Mr. Rodriquez.

1145 – Called Cerbulo Concepcion – left a message.

1320 – Called Madeline Rivera – left a message.

Date of call is unknown but it occurred prior to August 2010, which was the date of the final SI/ESI report.

Call between Navy and the Water Program Manager, NAPR Environmental Division, Discussed VNTR SWMU 10 and VNTR AOC G to determine the final disposition of effluent material produced at VNTR SWMU 10 and VNTR AOC G¹.

April 03, 2019

Email provided by Vieques NAVFAC contact Madeline Rivera-Ruiz and stated the following:

“I contacted the former Water Operations Manager for the former NSRR Base Operations Contractor (Adalberto Molina) and he stated that the solids were pumped out of the settling tank and transported to the drying beds at NSRR for final processing and disposal at the landfill.”

¹ CH2M HILL, Inc. 2010. *Site Inspection/Expanded Site Inspection Report, 7 Consent Order Sites and 16 PI/PAOC Sites, Former Vieques Naval Training Range, Vieques, Puerto Rico*. August.

Appendix E

Photographic Documentation

NASD AOC H: Former Power Plant/
Former Fire Training Area



NASD AOC H Building 13 looking northeast (4/2008)



NASD AOC H southwest corner of building facing west-northwest (4/12/2019)



NASD AOC H path to ephemeral stream facing west (4/12/2019)



NASD AOC H path to ephemeral stream facing west (4/12/2019)



NASD AOC H ephemeral stream facing north (4/12/2019)



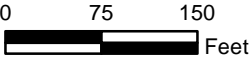
NASD AOC H building facing north (4/12/2019)



NASD AOC H ephemeral stream facing building east-southeast (4/12/2019)



Legend
Approximate Site Location

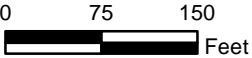


Imagery Date: 1936

Historic Imagery
AOC H
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location

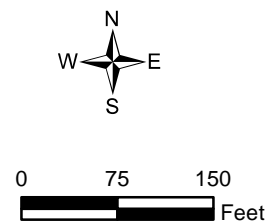


Imagery Date: 1967

Historic Imagery
AOC H
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location

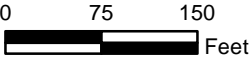


Imagery Date: 1985

Historic Imagery
AOC H
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



Imagery Date: 1994

Historic Imagery
AOC H
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



0 75 150
Feet

Imagery Date: 1999

Historic Imagery
AOC H
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



0 75 150
Feet

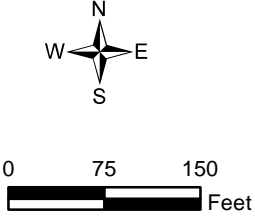
Imagery Date: 2004

Historic Imagery
AOC H
Former Vieques Naval Training Range
Vieques, Puerto Rico



NASD AOC H: Former Power Plant /
Former Fire Training Area

Legend
Approximate Site Location

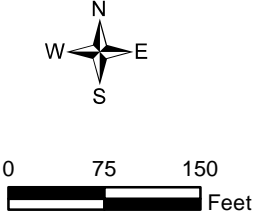


Imagery Date: 2007

Historic Imagery
AOC H
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



Imagery Date: 2009

Historic Imagery
AOC H
Former Vieques Naval Training Range
Vieques, Puerto Rico

NASD Former Fire Station Building 2046
at the Public Works Area



NASD former fire station facing east (10/5/2018)



NASD former fire station facing northeast (10/5/2018)



NASD former fire station facing north (10/5/2018)



NASD former fire station facing northwest (10/5/2018)



NASD former fire station facing southeast (10/5/2018)



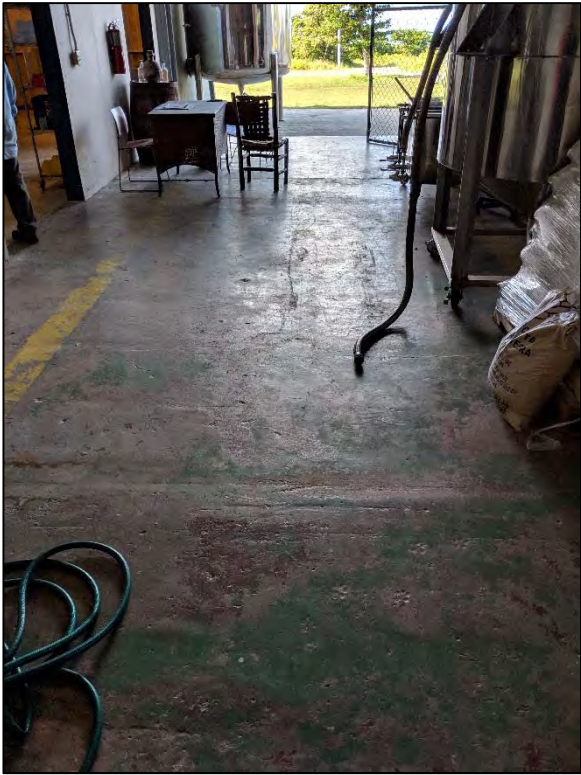
NASD former fire station facing south (10/5/2018)



NASD former fire station facing south-southwest (10/5/2018)



NASD former fire station facing west-northwest (10/5/2018)



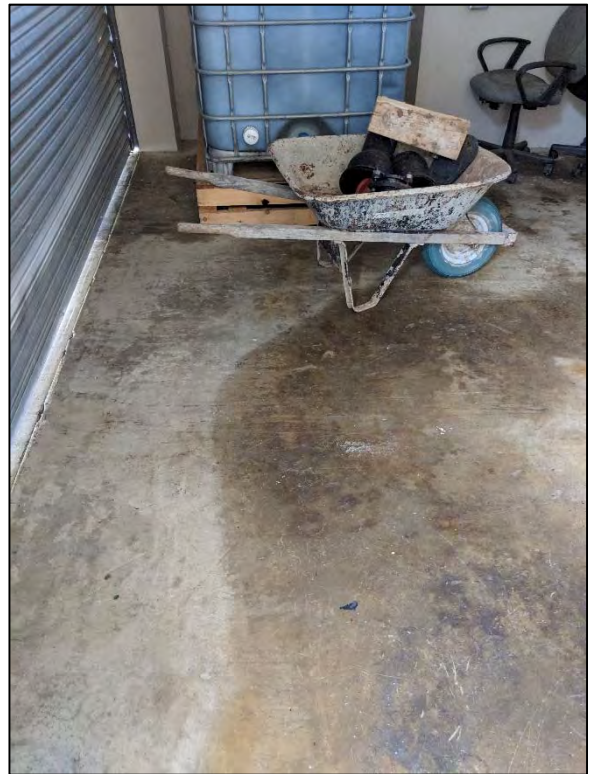
NASD former fire station (12/5/2018)



NASD former fire station (12/5/2018)



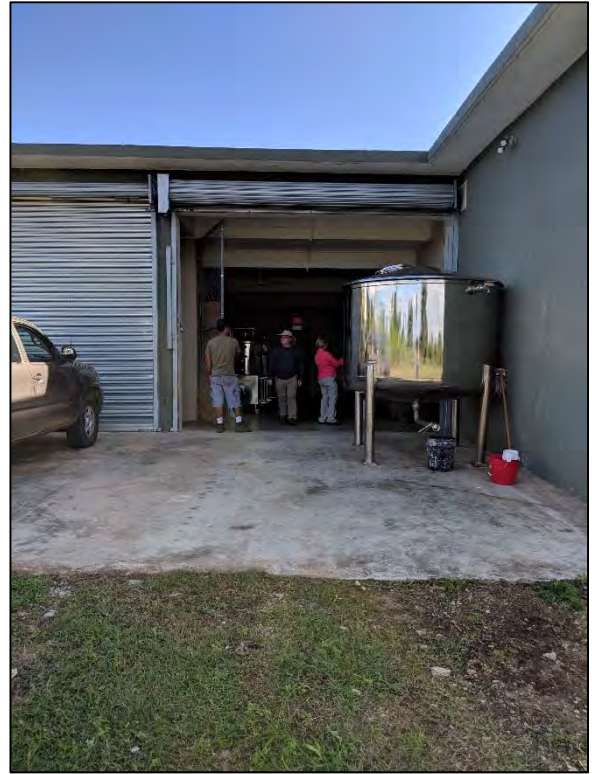
NASD former fire station (12/5/2018)



NASD former fire station (12/5/2018)



NASD former fire station (12/5/2018)



NASD former fire station (12/5/2018)

Potential Former NASD Motor Pool Area



Potential former NASD motor pool area facing north (4/12/2019)



Potential former NASD motor pool area facing south-southwest (4/12/2019)



Potential former NASD motor pool area facing north-northeast (4/12/2019)



Potential former NASD motor pool area facing north-northwest (4/12/2019)



Potential former NASD motor pool area facing north (4/12/2019)



Potential former NASD motor pool area facing south-southeast (4/12/2019)

NASD AOC B: Former Wastewater
Treatment Plant



NASD AOC B facing west-northwest (4/12/2019)



NASD AOC B facing north (4/12/2019)



NASD AOC B facing south (4/12/2019)



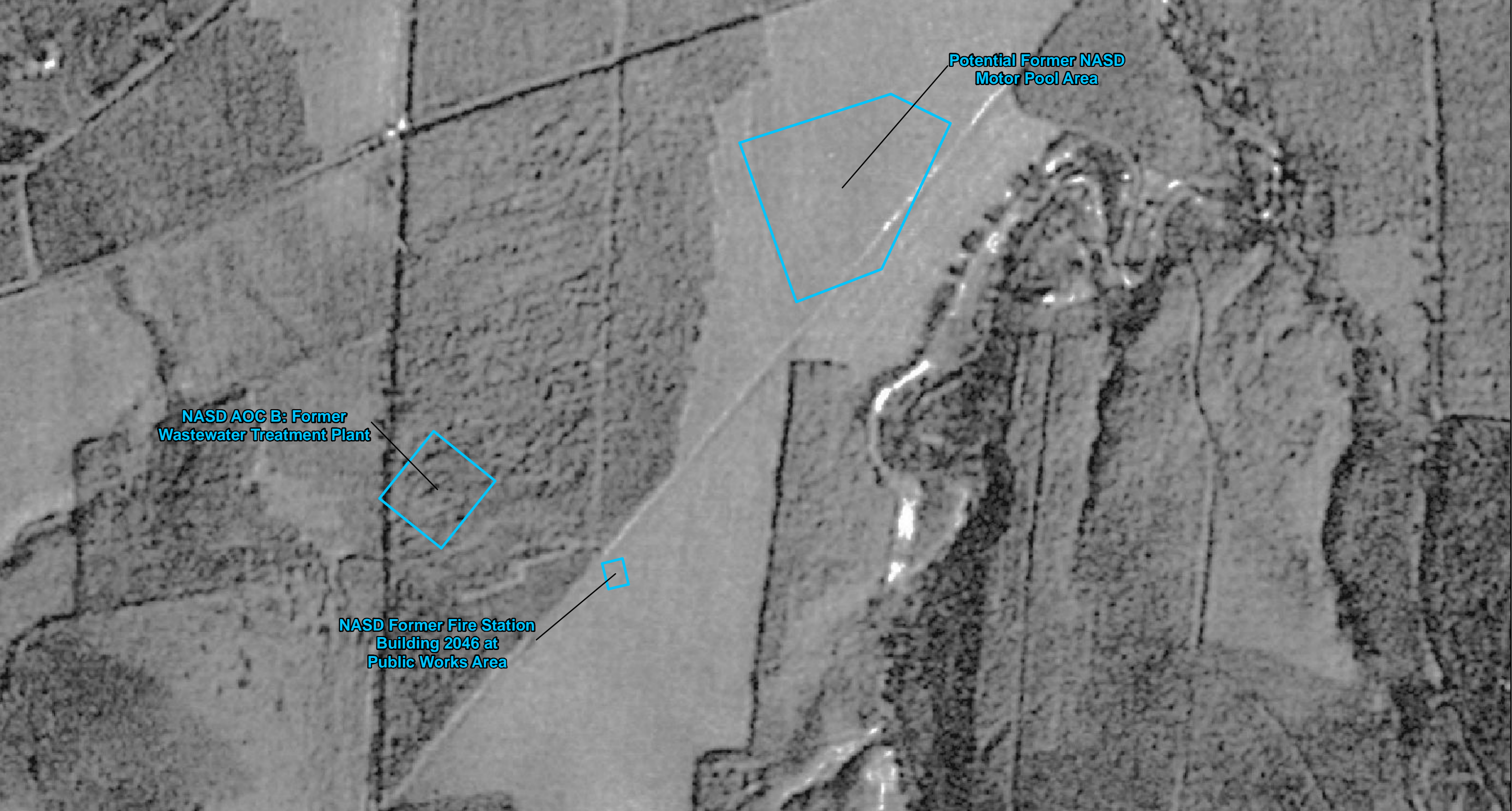
NASD AOC B facing south (4/12/2019)



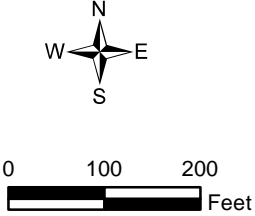
Concrete vault at the AOC B location facing north (4/12/2019)



Inside the concrete vault at the AOC B location (4/12/2019)



Legend
Approximate Site Location

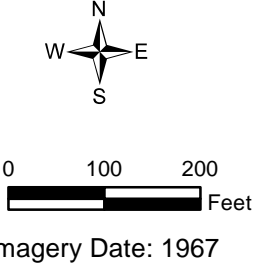


Imagery Date: 1936

Historic Imagery
NASD Public Works Area
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



Historic Imagery
NASD Public Works Area
Former Vieques Naval Training Range
Vieques, Puerto Rico



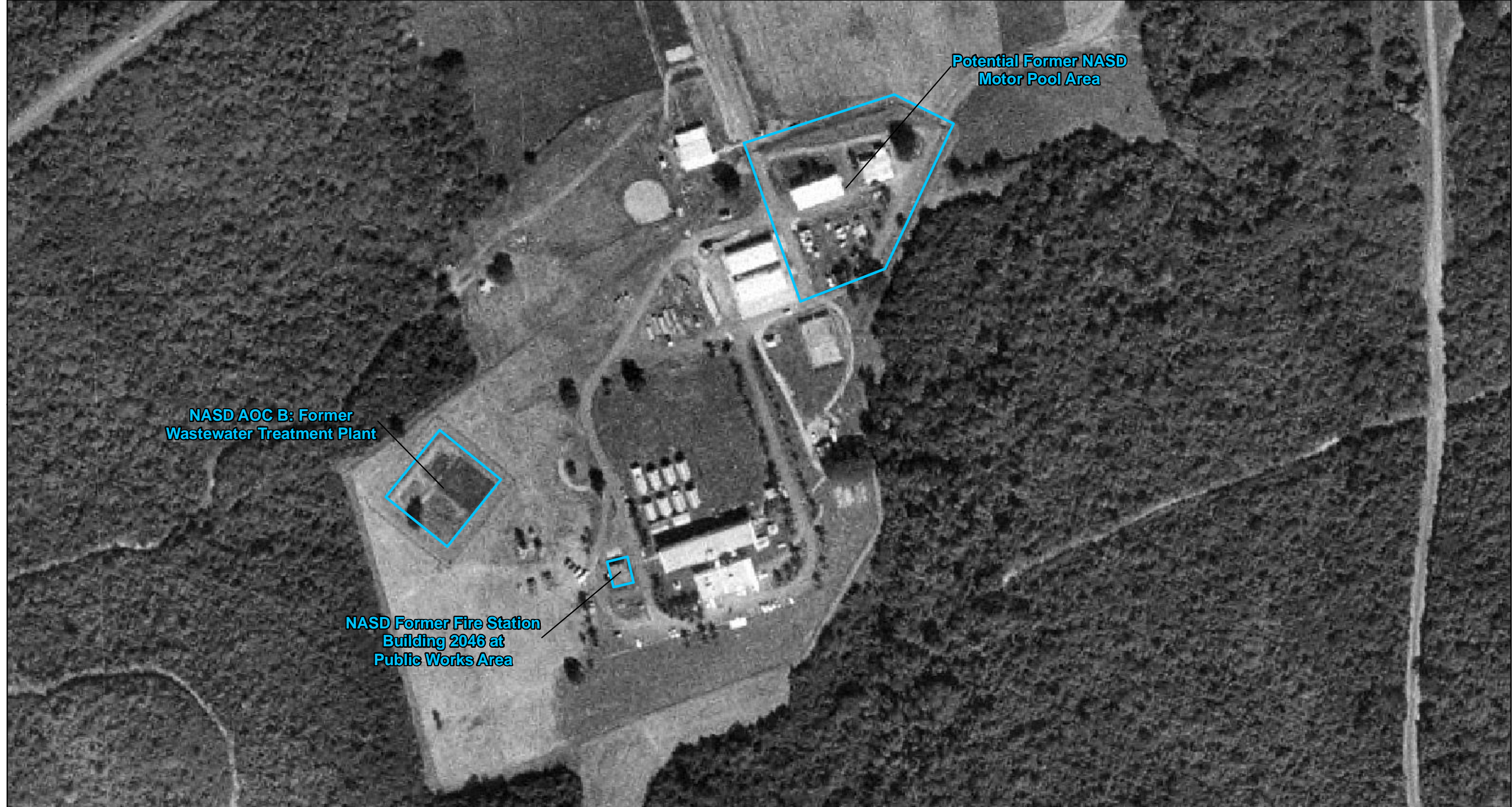
Legend
Approximate Site Location




0 100 200
Feet


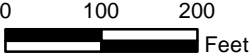
Imagery Date: 1985

Historic Imagery
NASD Public Works Area
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend

 Approximate Site Location



Imagery Date: 1994

Historic Imagery
NASD Public Works Area
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



0 100 200
Feet

Imagery Date: 1994

Historic Imagery
NASD Public Works Area
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend

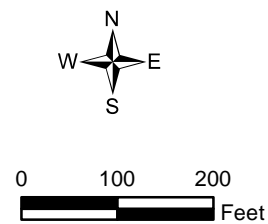
Approximate Site Location

Imagery Date: 2004

Historic Imagery
NASD Public Works Area
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



Imagery Date: 2007

Historic Imagery
NASD Public Works Area
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend

Approximate Site Location

Imagery Date: 2009

Historic Imagery
NASD Public Works Area
Former Vieques Naval Training Range
Vieques, Puerto Rico

Potential Former VNTR Motor Pool Area
(including Building 340) and Former Fire
Department Building 330 and PAOC K: Former
Camp Garcia Wash Rack



Potential former VNTR motor pool and former fire department building 330 area facing east (5/6/2019)



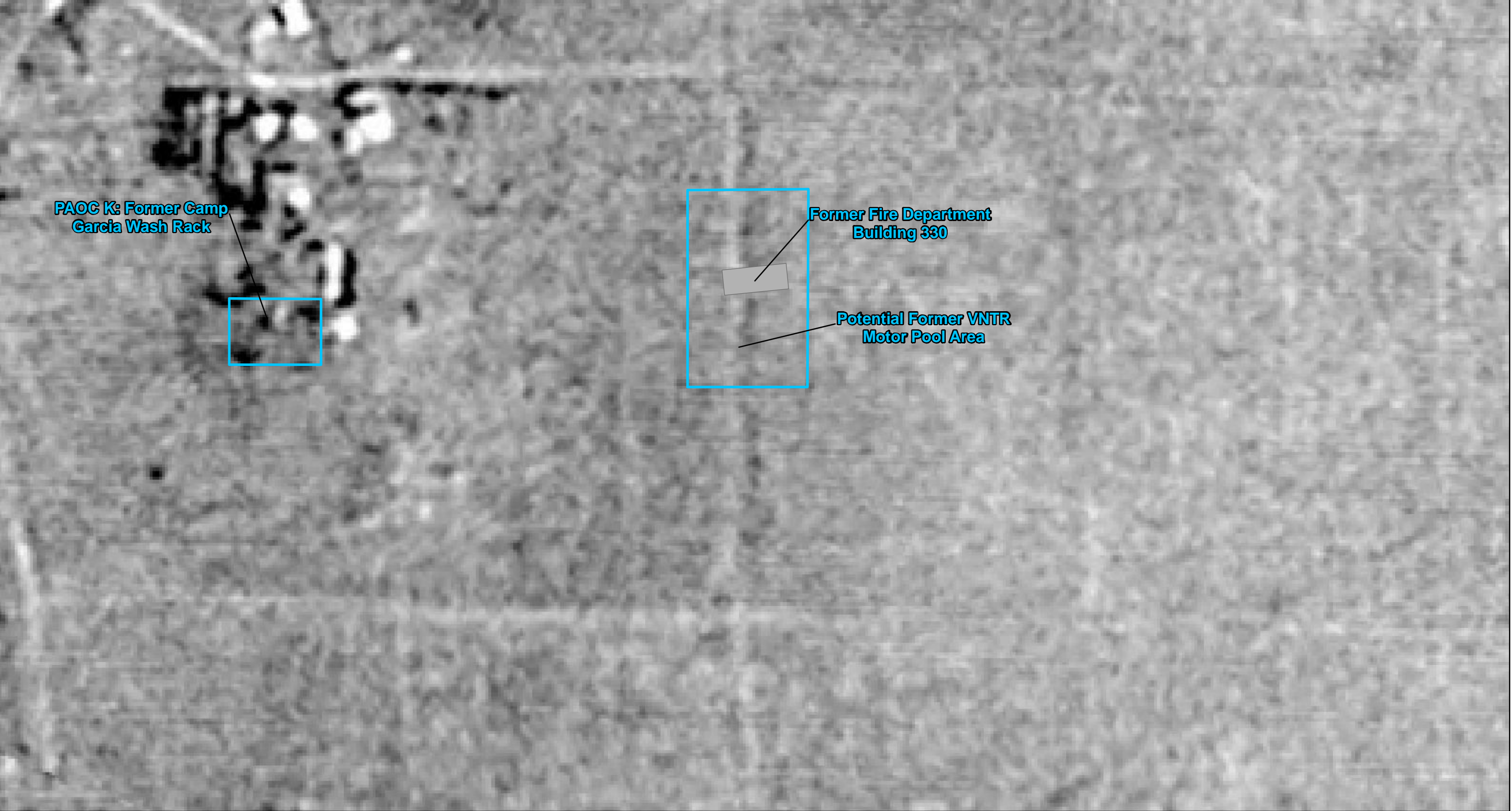
Potential former VNTR motor pool and former fire department building 330 area facing northeast (5/6/2019)




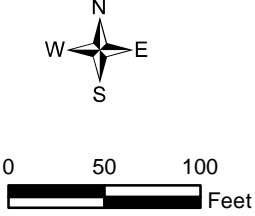
Potential former VNTR motor pool and former fire department building 330 area facing southeast (5/6/2019)



Potential former VNTR motor pool and former fire department building 330 area facing west (5/6/2019)



Legend
 Approximate Site Location

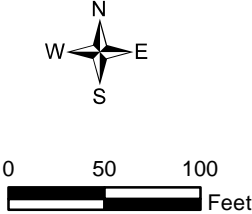


Imagery Date: 1936

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

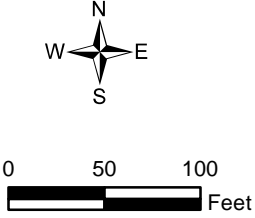


Imagery Date: 1959

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

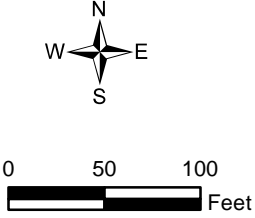


Imagery Date: 1962

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

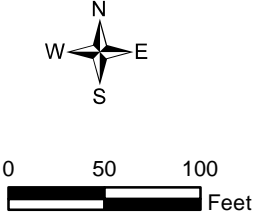


Imagery Date: 1964

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

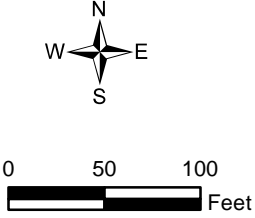


Imagery Date: 1970

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

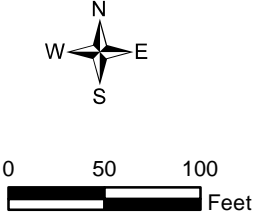


Imagery Date: 1983

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

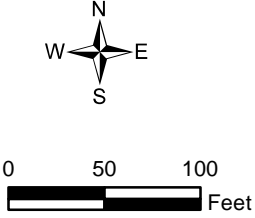


Imagery Date: 1985

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

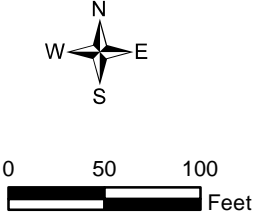


Imagery Date: 1994

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

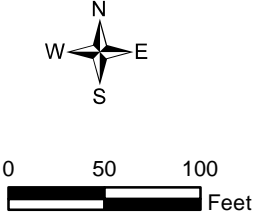


Imagery Date: 2000

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

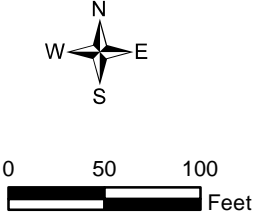


Imagery Date: 2005

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location



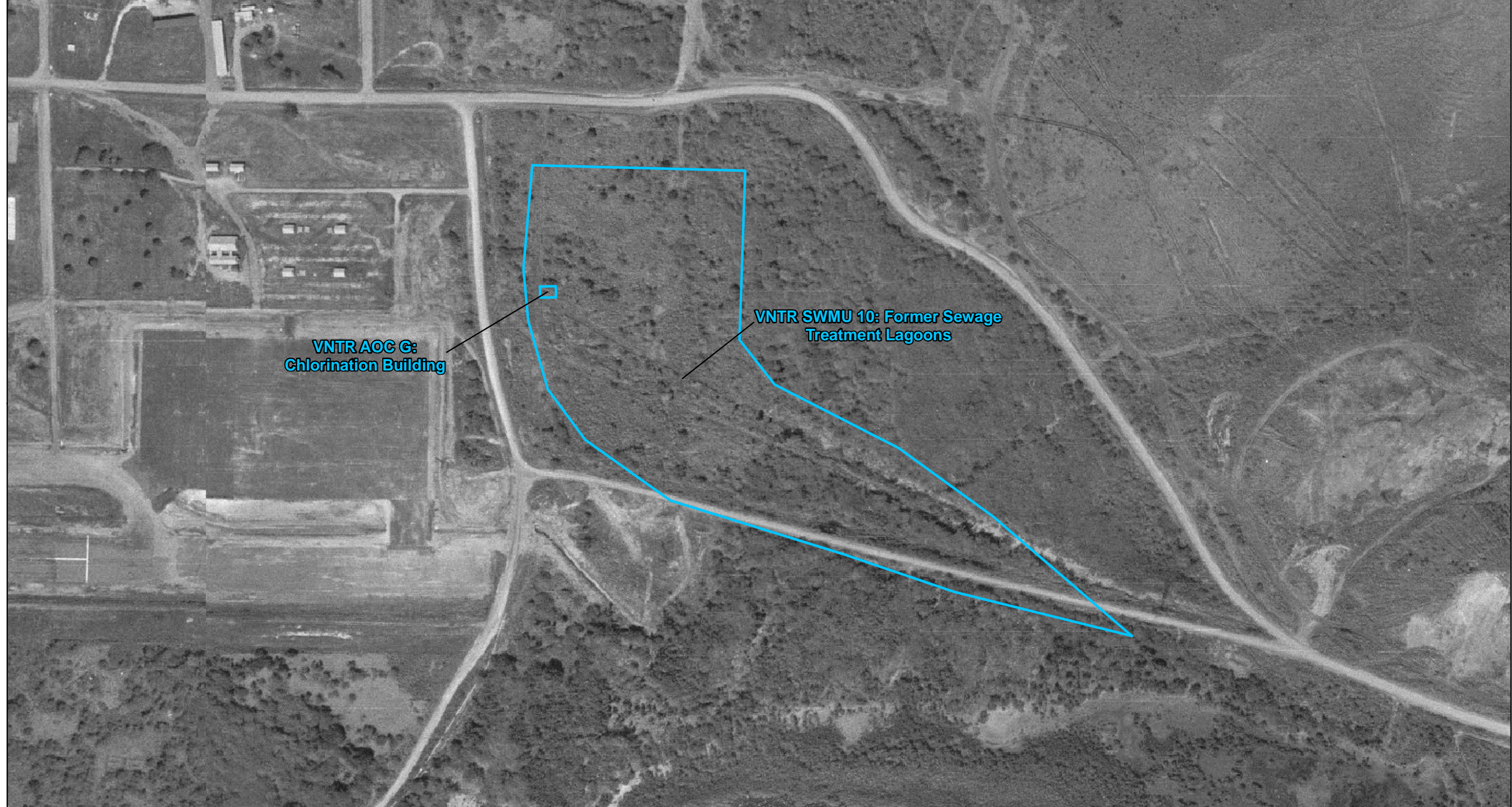
Imagery Date: 2007

Historic Imagery
*Former VNTR Motor Pool and
Former Fire Department
Former Vieques Naval Training Range
Vieques, Puerto Rico*

VNTR SWMU 10 and VNTR AOC G:
Former Sewage Treatment Lagoons and
Chlorination Building



VNTR AOC G chlorination building looking east (1/26/2009)



Legend

Approximate Site Location

Imagery Date: 1964

Historic Imagery
VNTR SWMU 10 and VNTR AOC G
Former Vieques Naval Training Range
Vieques, Puerto Rico



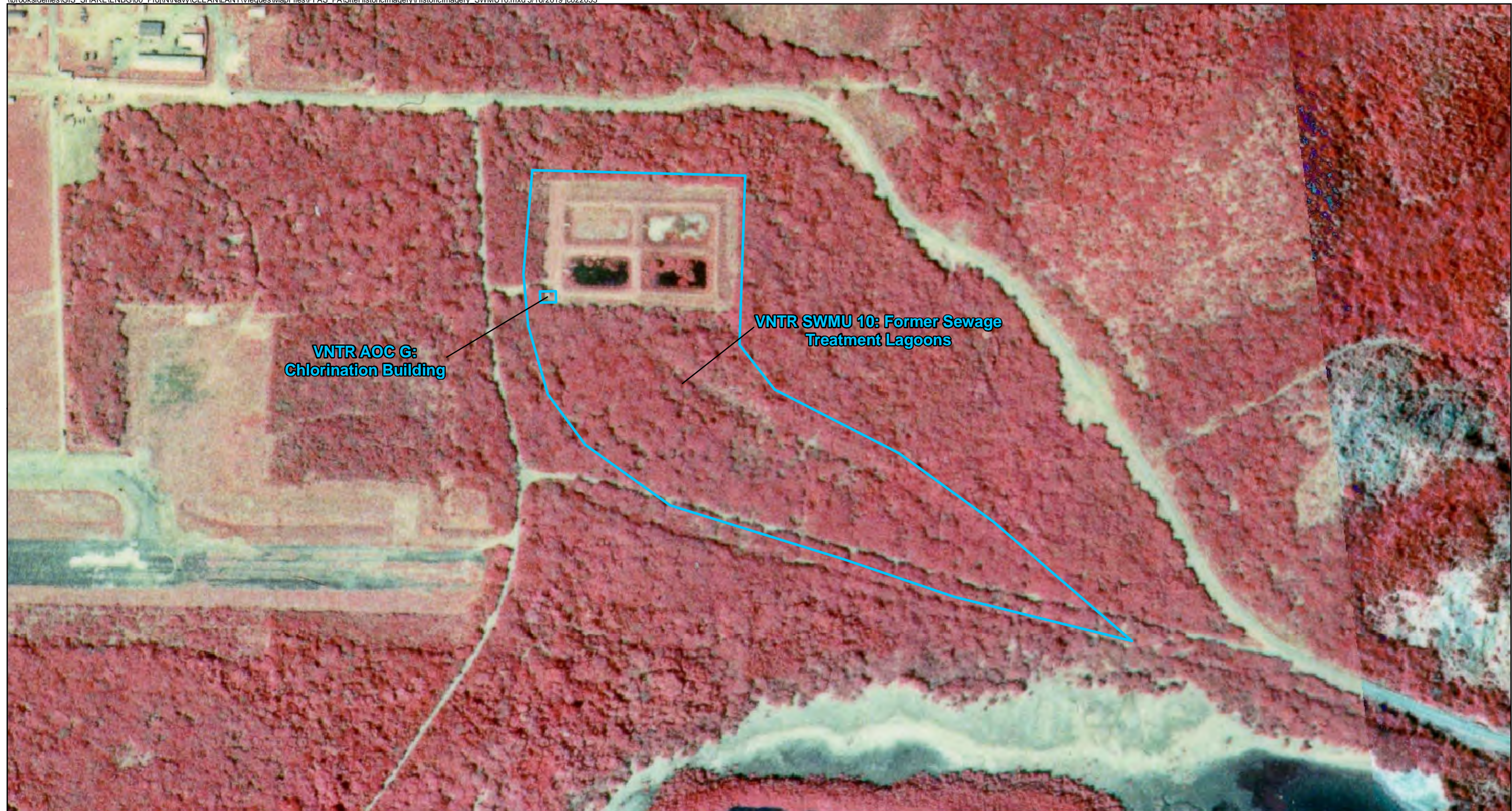
Legend
Approximate Site Location



0 150 300
Feet

Imagery Date: 1970

Historic Imagery
VNTR SWMU 10 and VNTR AOC G
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



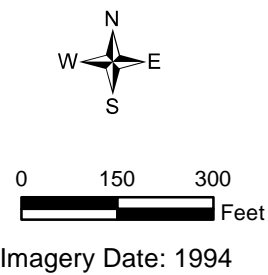
0 150 300
Feet

Imagery Date: 1985

Historic Imagery
VNTR SWMU 10 and VNTR AOC G
Former Vieques Naval Training Range
Vieques, Puerto Rico



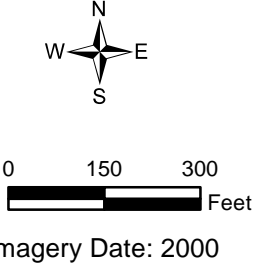
Legend
Approximate Site Location



Historic Imagery
VNTR SWMU 10 and VNTR AOC G
Former Vieques Naval Training Range
Vieques, Puerto Rico



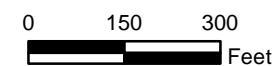
Legend
[Blue Outline] Approximate Site Location



Historic Imagery
VNTR SWMU 10 and VNTR AOC G
Former Vieques Naval Training Range
Vieques, Puerto Rico

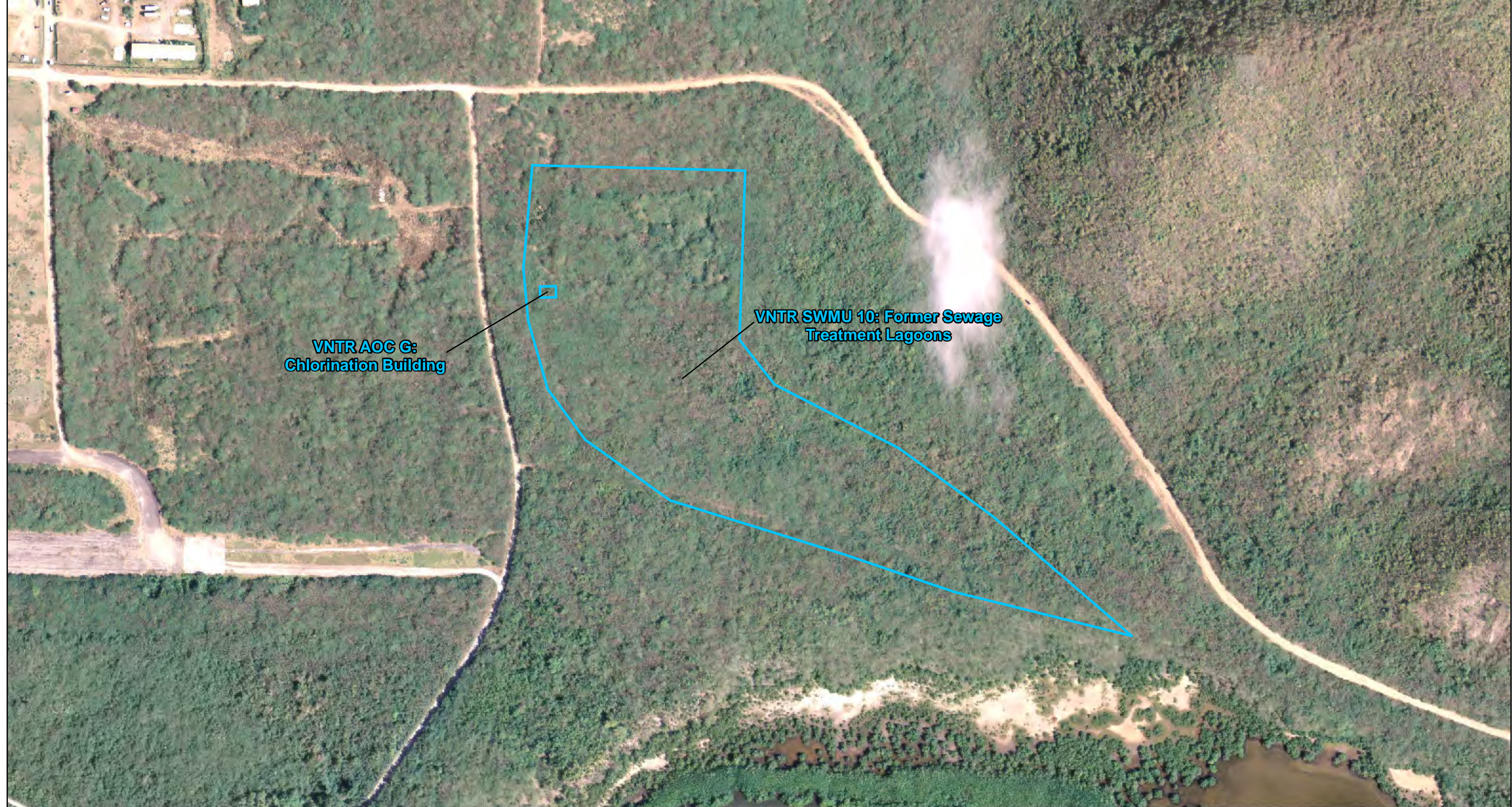


Legend
Approximate Site Location

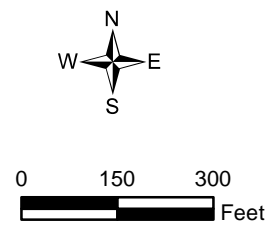


Imagery Date: 2004

Historic Imagery
VNTR SWMU 10 and VNTR AOC G
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



Imagery Date: 2007

Historic Imagery
VNTR SWMU 10 and VNTR AOC G
Former Vieques Naval Training Range
Vieques, Puerto Rico

NASD SWMU 6: Former Mangrove Disposal Site



NASD SWMU 6 mangroves and deteriorated waste pile. As of 2010, all debris as seen in the following photographs have been removed. (1/26/2009)



SWMU 6 typical debris pile (2/4/2009)



SWMU 6 clearing vegetation (2/4/2009)



Scraping of debris and soil from the surface of SWMU 6 (2/13/2009)



Looking toward the north at SWMU 6 following excavation (2/19/2009)



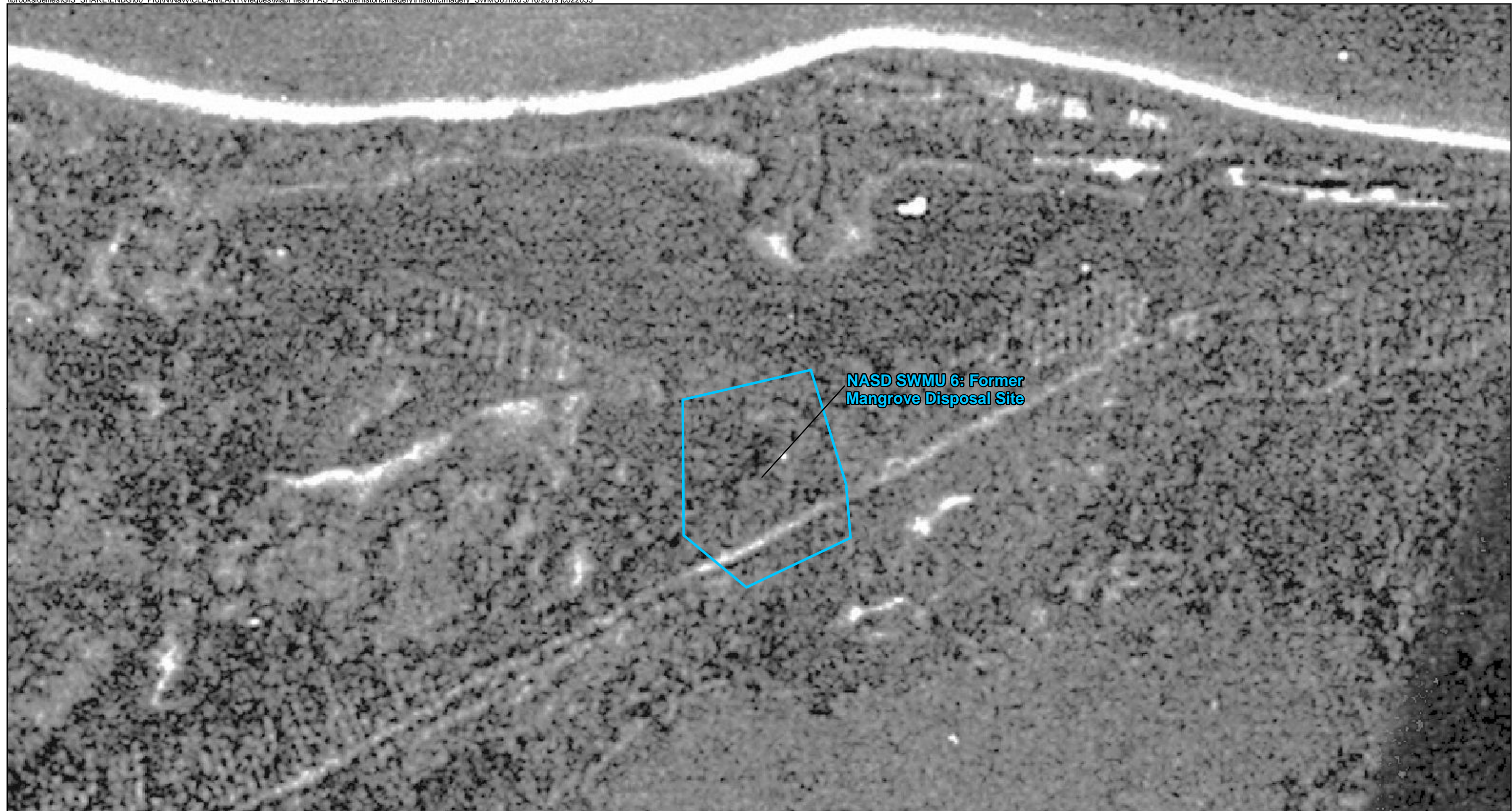
Looking toward the west at the site following excavation. Excavated soil is staged on plastic sheeting and surrounded by hay bales. (4/3/2009)



Looking toward the northwest at SWMU 6 following excavation activities. The stockpile, on the right side of the photograph, remained to be disposed of as of 2009, all debris removed as of 2010 (6/18/2009)



NASD SWMU 6, all debris removed, and remediation completed in 2009. Fence removed in January 2018. (11/2016)



NASD SWMU 6: Former
Mangrove Disposal Site

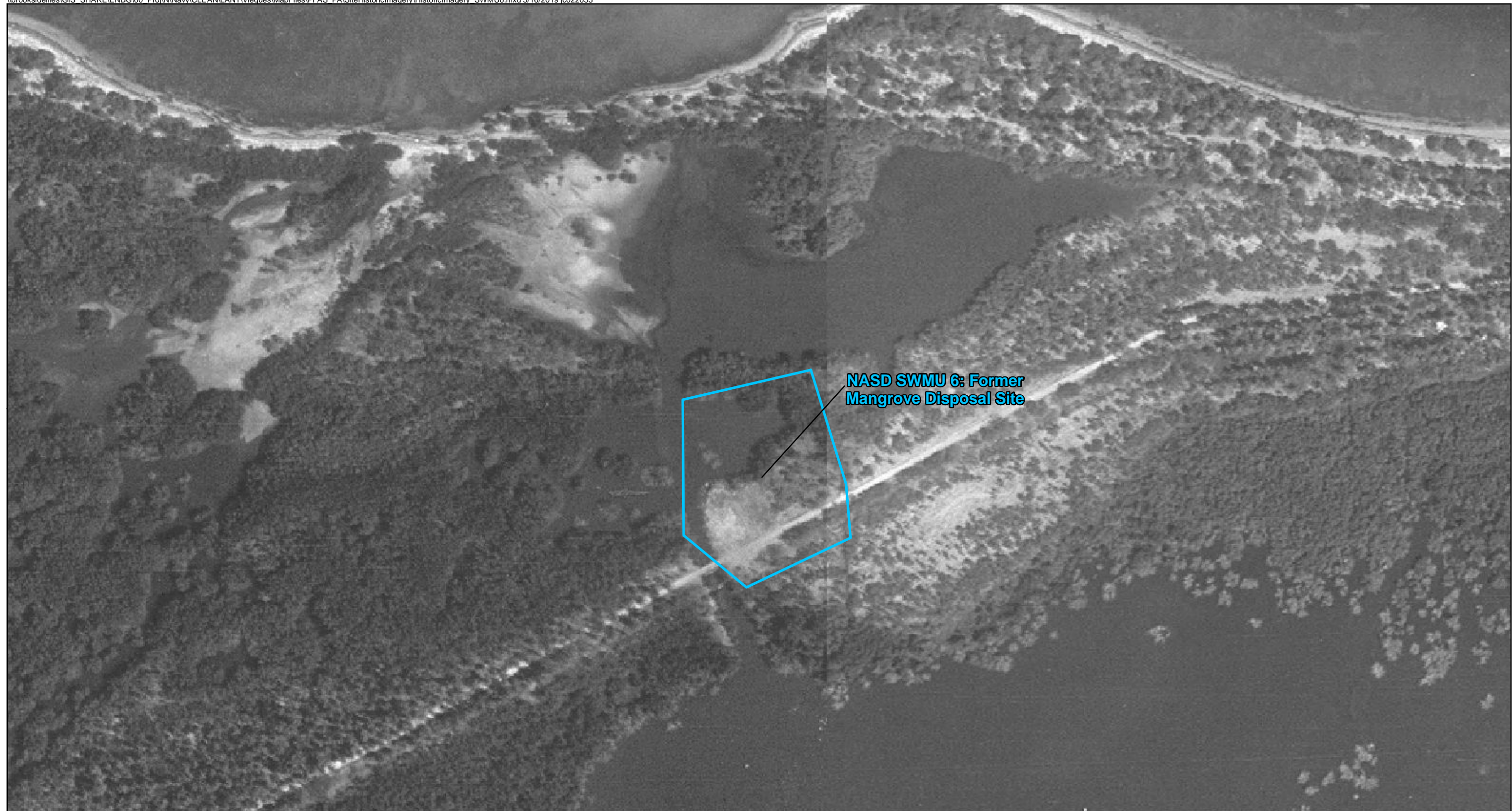
Legend
Approximate Site Location



0 100 200
Feet

Imagery Date: 1936

Historic Imagery
NASD SWMU 6
Naval Ammunition Support Detachment
Vieques, Puerto Rico



NASD SWMU 6: Former
Mangrove Disposal Site

Legend
Approximate Site Location



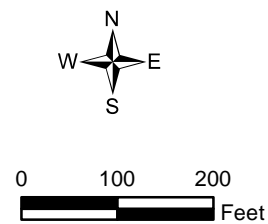
0 100 200
Feet

Imagery Date: 1967

Historic Imagery
NASD SWMU 6
*Naval Ammunition Support Detachment
Vieques, Puerto Rico*



Legend
Approximate Site Location



Imagery Date: 1985

Historic Imagery
NASD SWMU 6
Naval Ammunition Support Detachment
Vieques, Puerto Rico



NASD SWMU 6: Former
Mangrove Disposal Site

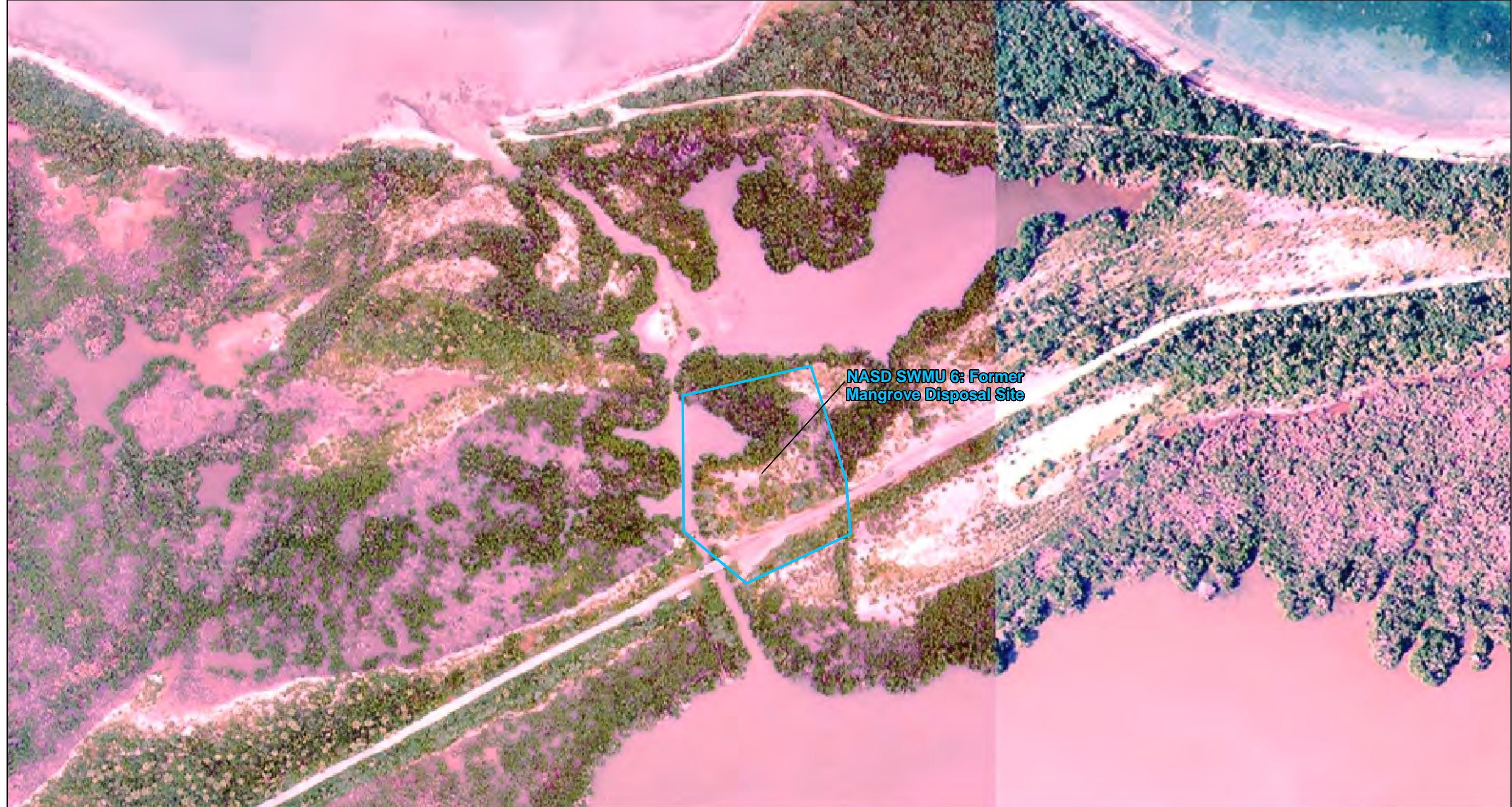
Legend
Approximate Site Location



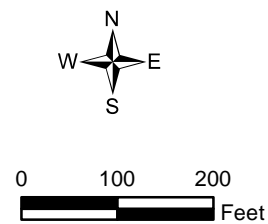
0 100 200
Feet

Imagery Date: 1994

Historic Imagery
NASD SWMU 6
Naval Ammunition Support Detachment
Vieques, Puerto Rico



Legend
Approximate Site Location



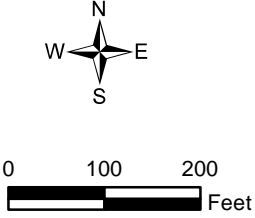
Imagery Date: 1999

Historic Imagery
NASD SWMU 6
Naval Ammunition Support Detachment
Vieques, Puerto Rico



NASD SWMU 6: Former
Mangrove Disposal Site

Legend
Approximate Site Location

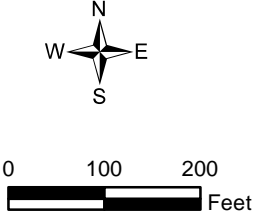


Imagery Date: 2004

Historic Imagery
NASD SWMU 6
*Naval Ammunition Support Detachment
Vieques, Puerto Rico*



Legend
Approximate Site Location

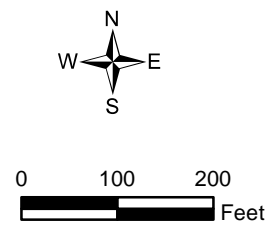


Imagery Date: 2007

Historic Imagery
NASD SWMU 6
*Naval Ammunition Support Detachment
Vieques, Puerto Rico*



Legend
Approximate Site Location



Imagery Date: 2009

Historic Imagery
NASD SWMU 6
Naval Ammunition Support Detachment
Vieques, Puerto Rico

NASD SWMU 7: Former Quebrada Disposal Site



SWMU 7 looking toward the south along the road after the vegetation along the top of slope had been cleared. Image shows site conditions during remediation. (2/10/2009)



An excavator consolidating small sized debris and soil for transport to the staging area at SWMU 7. Image shows site conditions during remediation. (2/11/2009)



Looking up the slope as debris is removed at SWMU 7. The area in the foreground has been scraped clean of debris. Image shows site conditions during remediation. (2/13/2009)



Looking at debris at the bottom of the ravine at SWMU 7. The debris includes tires, connex box, and household trash. Image shows site conditions during remediation. (2/15/2009)



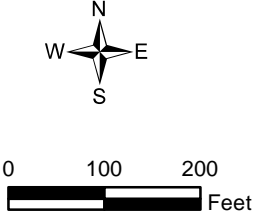
Metal debris that was segregated during the excavation activities at SWMU 7. Image shows site conditions during remediation. (2/17/2009)



Looking along the base of slope at the silt fence installed following the removal of all debris at SWMU 7 as of February 2009. (2/20/2009)



Legend
Approximate Site Location



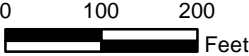
Imagery Date: 1936

Historic Imagery
NASD SWMU 7
*Naval Ammunition Support Detachment
Vieques, Puerto Rico*



NASD SWMU 7: Former
Quebrada Disposal Site

Legend
Approximate Site Location



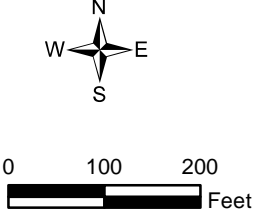
Imagery Date: 1967

Historic Imagery
NASD SWMU 7
*Naval Ammunition Support Detachment
Vieques, Puerto Rico*



NASD SWMU 7: Former
Quebrada Disposal Site

Legend
Approximate Site Location

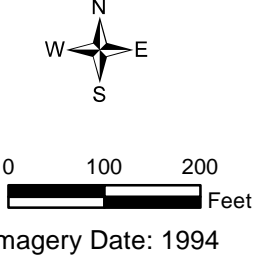


Imagery Date: 1985

Historic Imagery
NASD SWMU 7
Naval Ammunition Support Detachment
Vieques, Puerto Rico



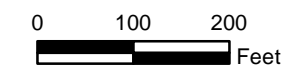
Legend
Approximate Site Location



Historic Imagery
NASD SWMU 7
Naval Ammunition Support Detachment
Vieques, Puerto Rico



Legend
Approximate Site Location

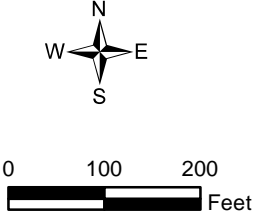


Imagery Date: 1999

Historic Imagery
NASD SWMU 7
*Naval Ammunition Support Detachment
Vieques, Puerto Rico*



Legend
Approximate Site Location

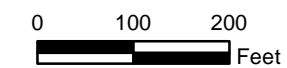


Imagery Date: 2004

Historic Imagery
NASD SWMU 7
Naval Ammunition Support Detachment
Vieques, Puerto Rico



Legend
Approximate Site Location

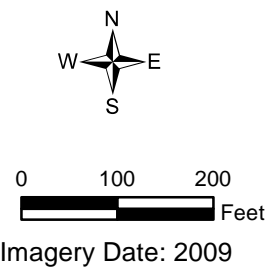


Imagery Date: 2007

Historic Imagery
NASD SWMU 7
Naval Ammunition Support Detachment
Vieques, Puerto Rico



Legend
Approximate Site Location



Historic Imagery
NASD SWMU 7
Naval Ammunition Support Detachment
Vieques, Puerto Rico

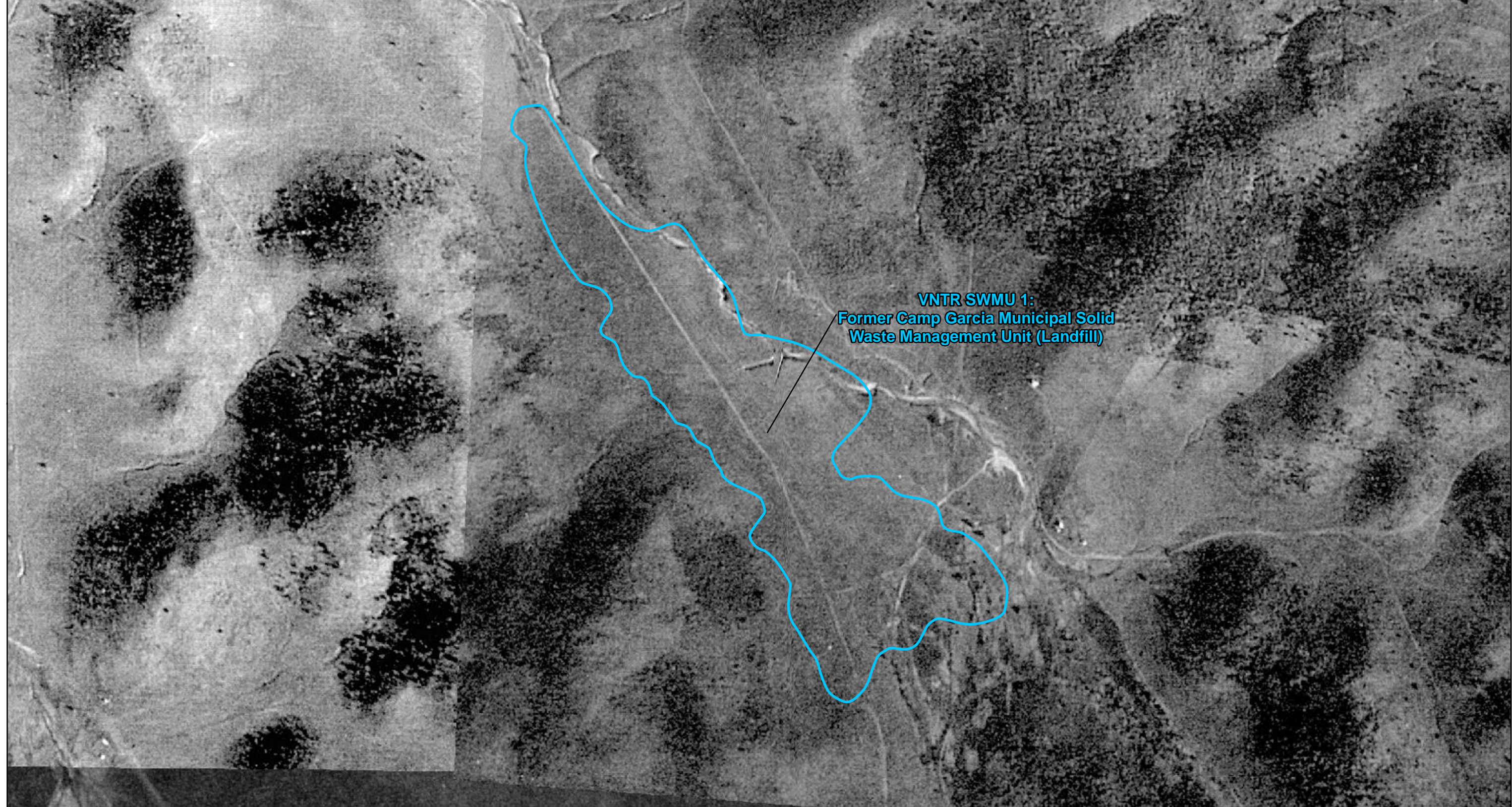
VNTR SWMU 1: Former Camp Garcia Municipal
Solid Waste Management Unit (Landfill)



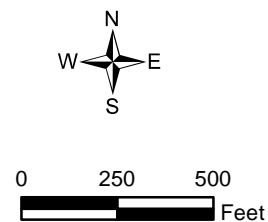
VNTR SWMU 1 looking north, current conditions as of 2018. Remedial action included removing vegetation across entire landfill and removal of all surface debris. A geophysical survey was then completed in April 2014 to refine the boundaries. Currently actively monitoring groundwater and land use controls are implemented. (5/17/2018)



VNTR SWMU 1 looking south (5/17/2018)




Legend
Approximate Site Location

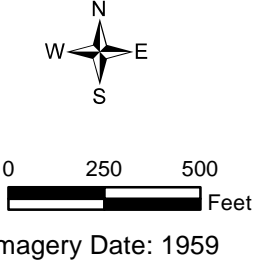


Imagery Date: 1936

Historic Imagery
VNTR SWMU 1
*Former Vieques Naval Training Range
Vieques, Puerto Rico*




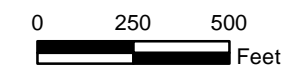
Legend
 Approximate Site Location



Historic Imagery
VNTR SWMU 1
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
 Approximate Site Location





Imagery Date: 1964

Historic Imagery
VNTR SWMU 1
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend

 Approximate Site Location





0 250 500 Feet


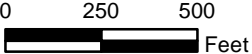
Imagery Date: 1970

Historic Imagery
VNTR SWMU 1
*Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend

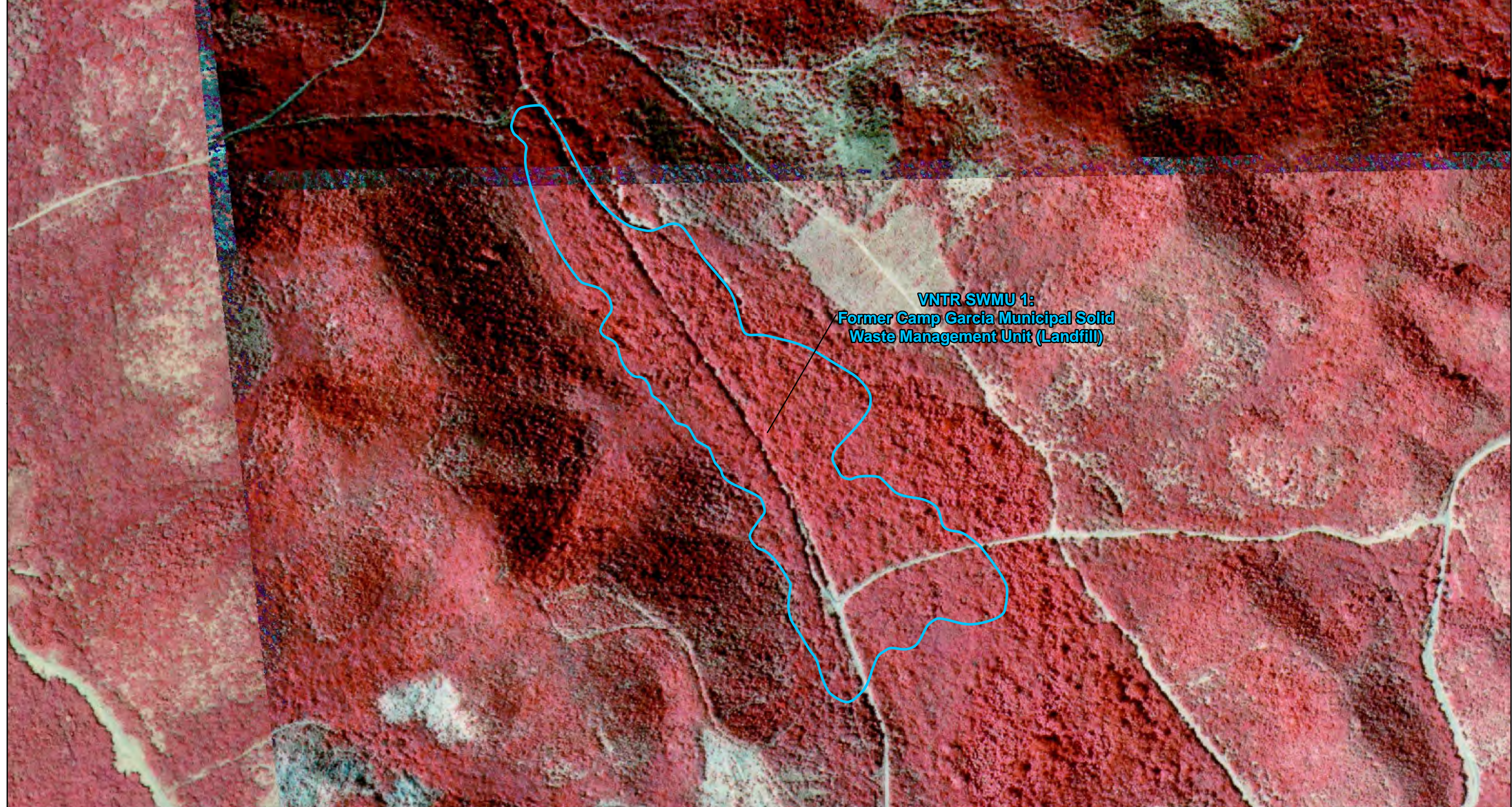
 Approximate Site Location

0 250 500 Feet

Imagery Date: 1983

Historic Imagery
VNTR SWMU 1
*Former Vieques Naval Training Range
Vieques, Puerto Rico*



**VNTR SWMU 1:
Former Camp Garcia Municipal Solid
Waste Management Unit (Landfill)**

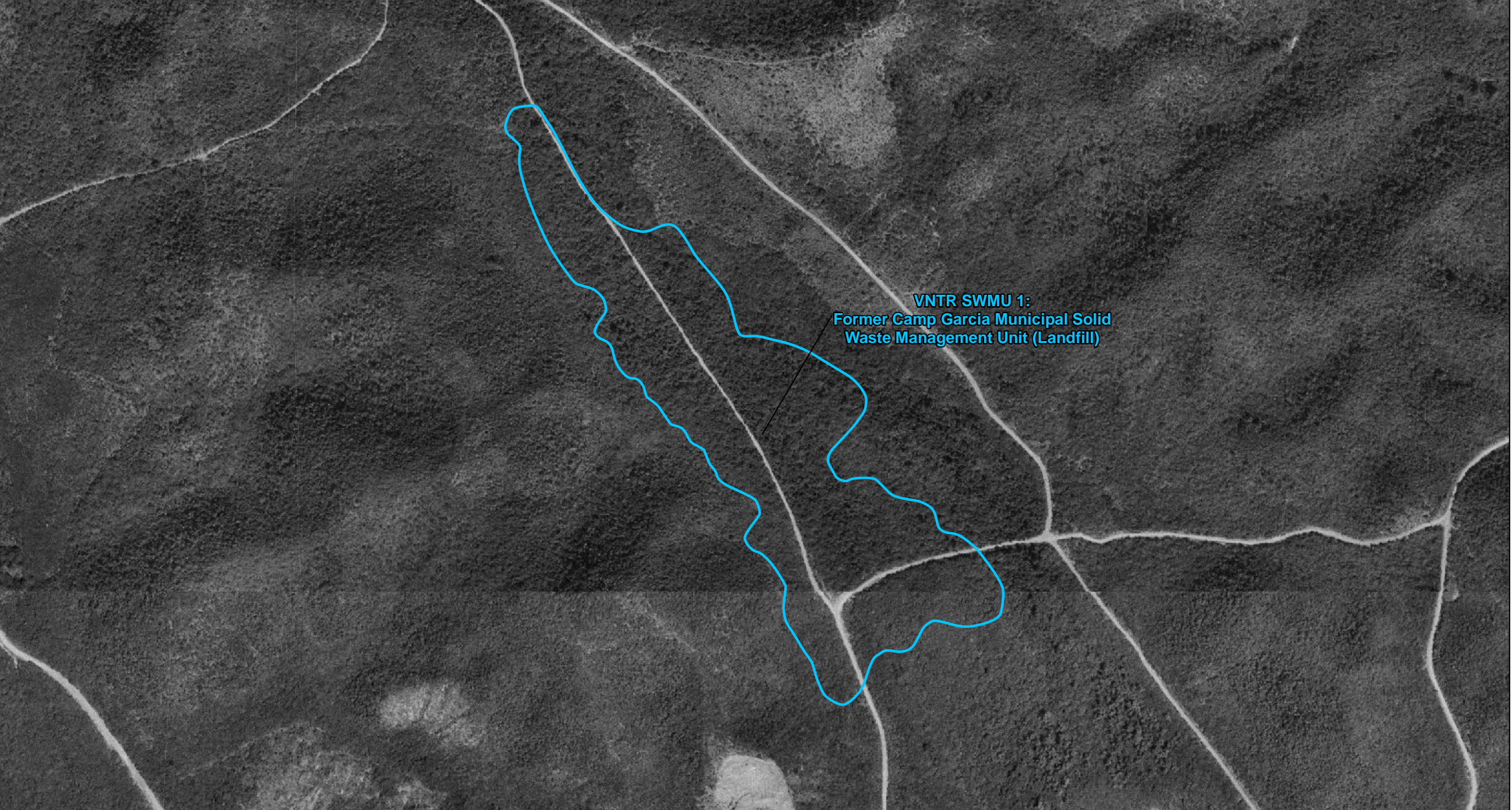
Legend
Approximate Site Location



0 250 500
Feet

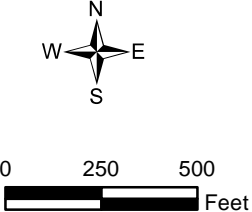
Imagery Date: 1985

Historic Imagery
VNTR SWMU 1
Former Vieques Naval Training Range
Vieques, Puerto Rico



VNTR SWMU 1:
Former Camp Garcia Municipal Solid
Waste Management Unit (Landfill)

Legend
Approximate Site Location




Imagery Date: 1994

Historic Imagery
VNTR SWMU 1
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend

 Approximate Site Location




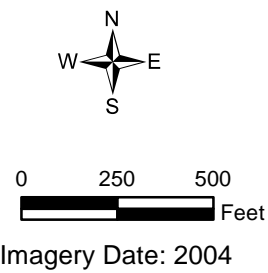

0 250 500 Feet

Imagery Date: 2000

Historic Imagery
VNTR SWMU 1
*Former Vieques Naval Training Range
Vieques, Puerto Rico*



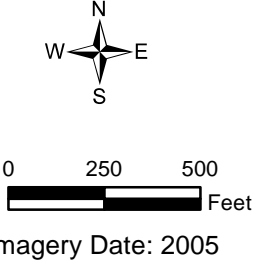
Legend
 Approximate Site Location



Historic Imagery
VNTR SWMU 1
*Former Vieques Naval Training Range
Vieques, Puerto Rico*



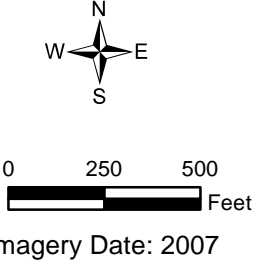
Legend
Approximate Site Location



Historic Imagery
VNTR SWMU 1
*Former Vieques Naval Training Range
Vieques, Puerto Rico*

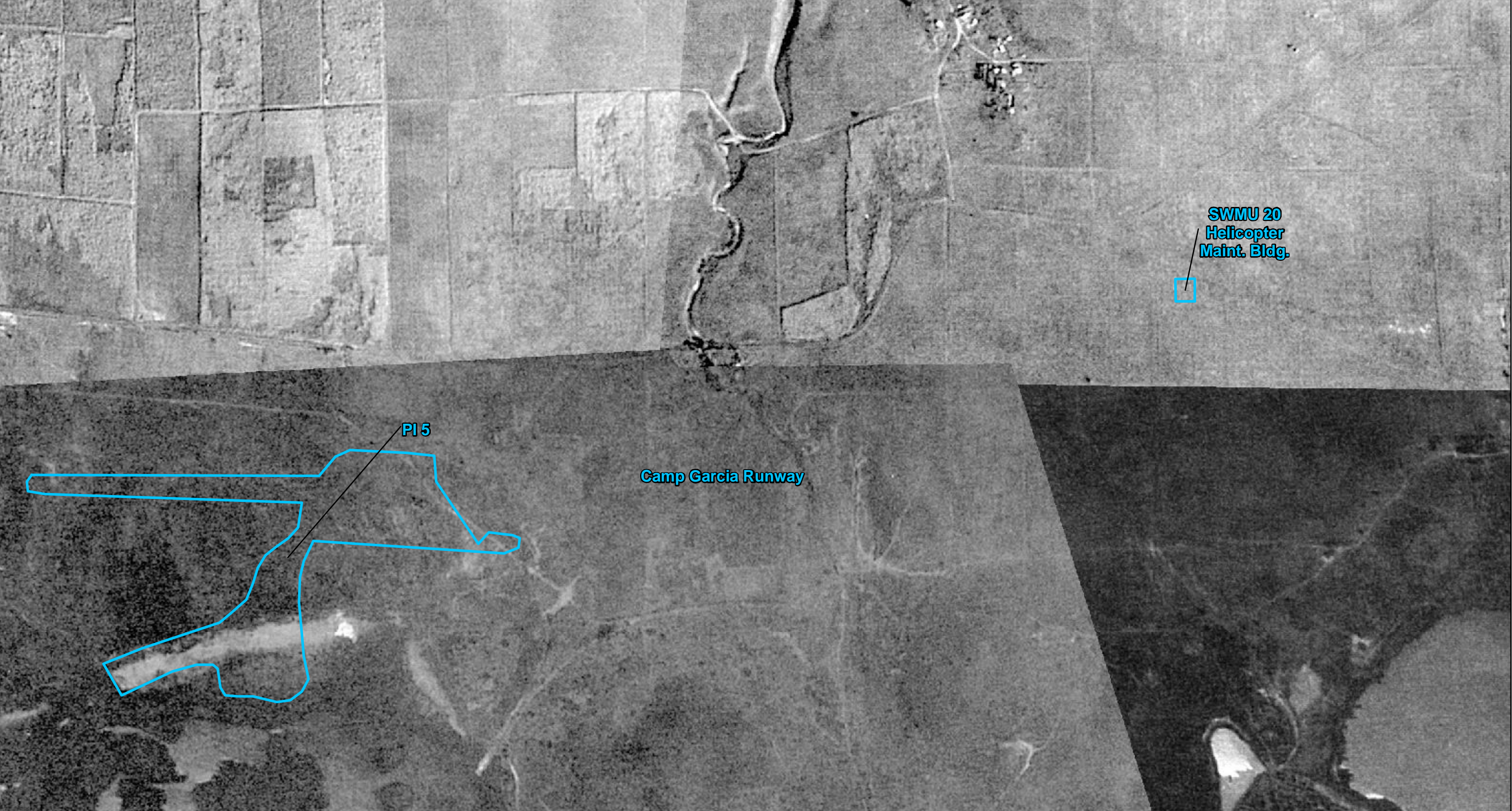


Legend
Approximate Site Location

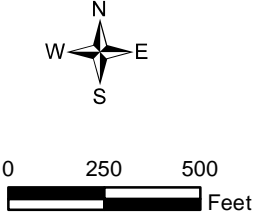


Historic Imagery
VNTR SWMU 1
*Former Vieques Naval Training Range
Vieques, Puerto Rico*

VNTR Camp Garcia Runway, PI 5: Surface Water
Drainage Area from Camp Garcia Runway, and
SWMU 20 Former Helicopter Maintenance Area



Legend
Approximate Site Location

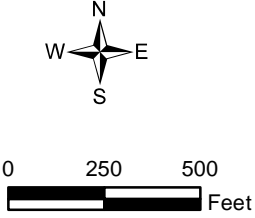


Imagery Date: 1936

Historic Imagery
*Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location



Imagery Date: 1959

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



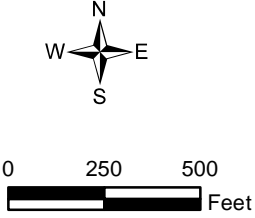
0 250 500
Feet

Imagery Date: 1962

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico

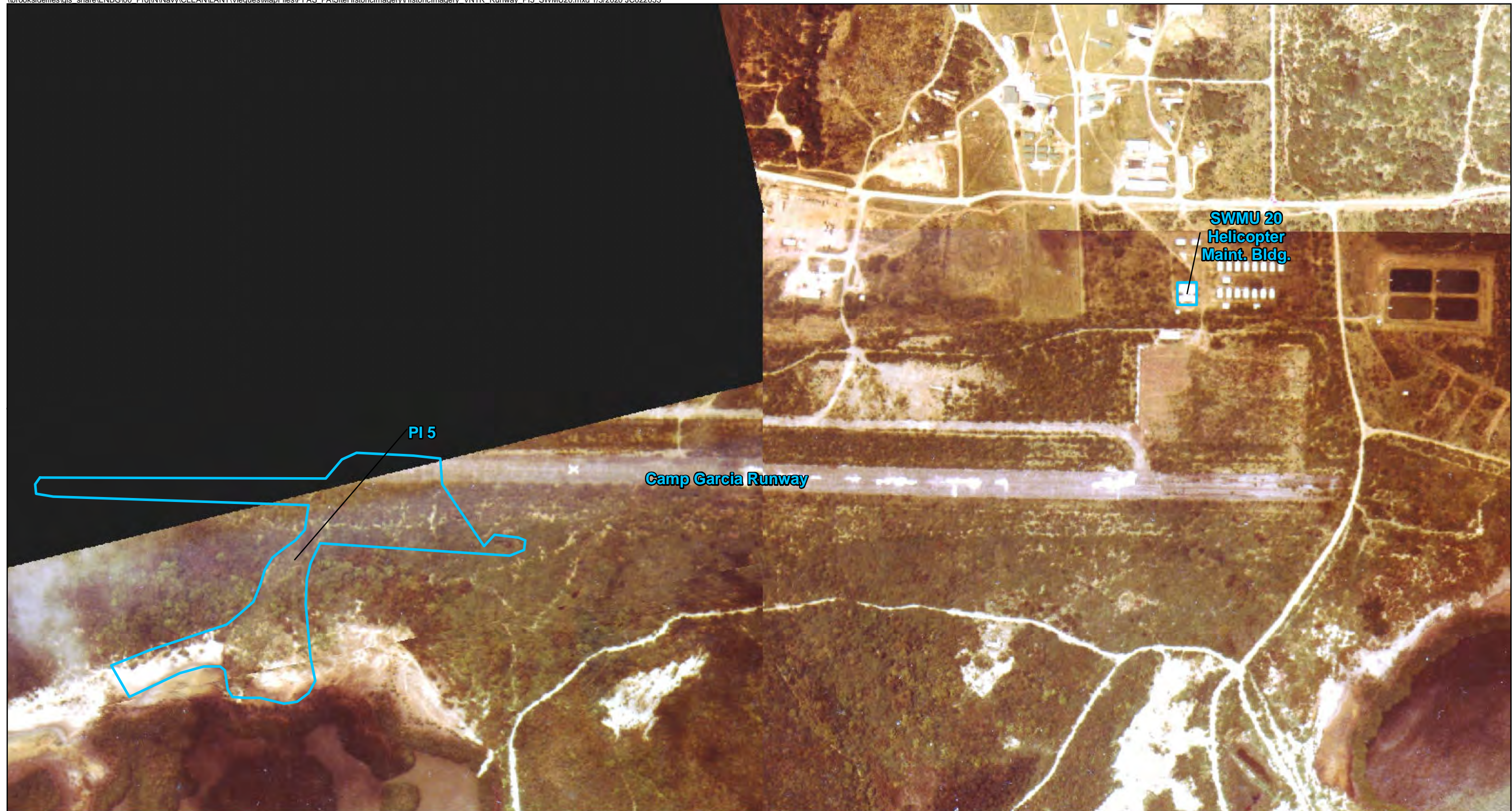



Legend
Approximate Site Location




Imagery Date: 1964

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
 Approximate Site Location



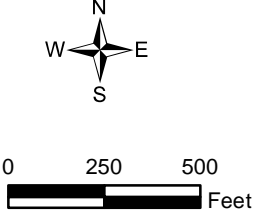
0 250 500
 Feet

Imagery Date: 1970

Historic Imagery
*Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico*



Legend
Approximate Site Location

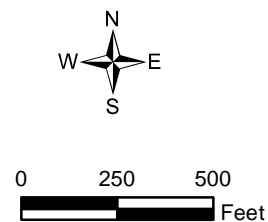


Imagery Date: 1983

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico

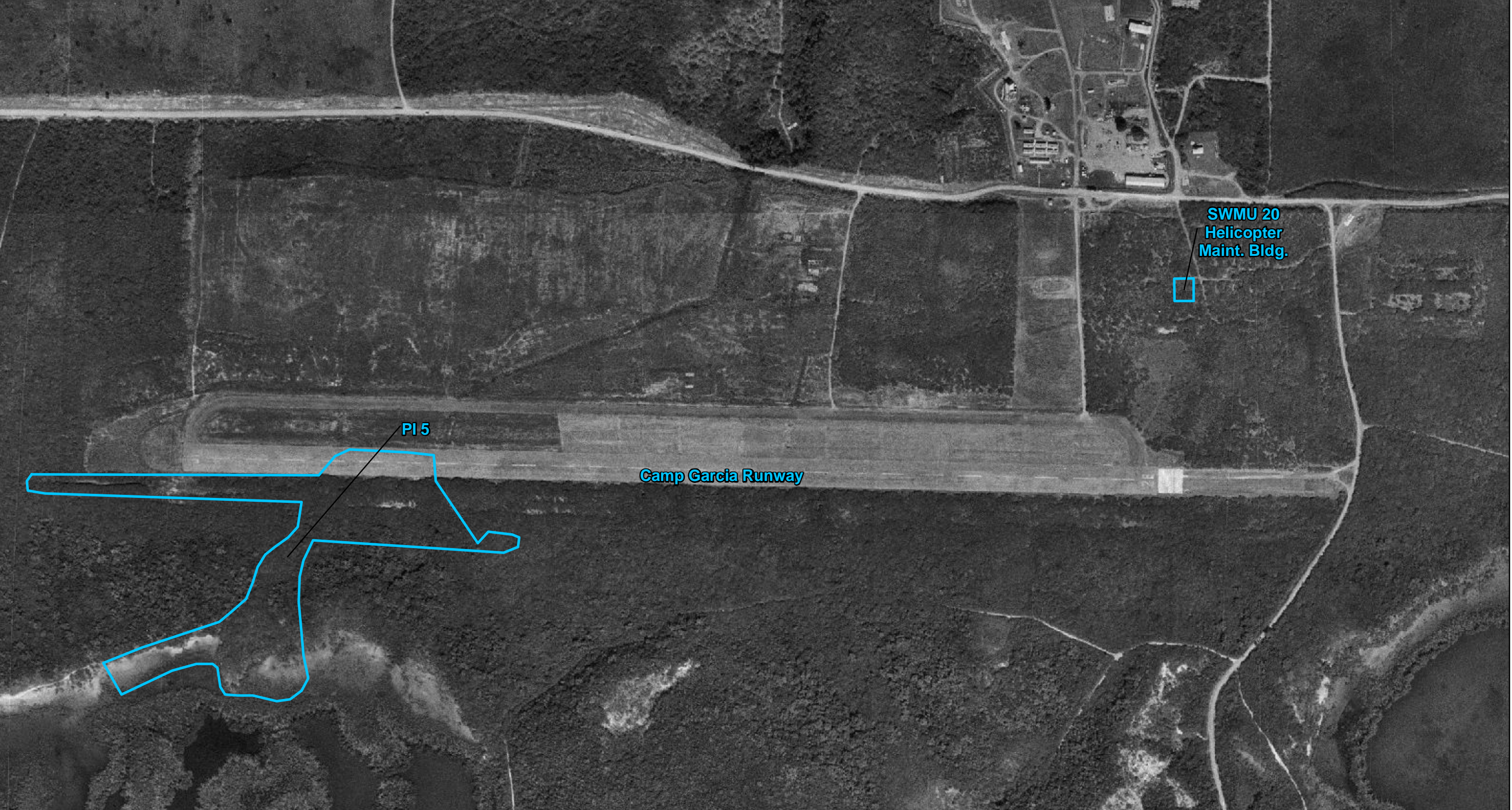


Legend
Approximate Site Location

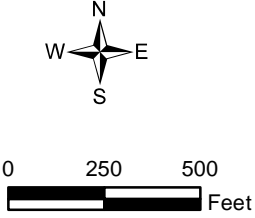


Imagery Date: 1985

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location

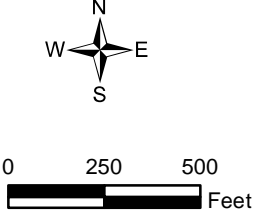


Imagery Date: 1994

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location

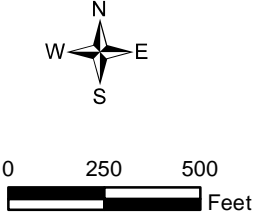


Imagery Date: 2000

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location

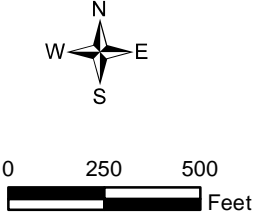


Imagery Date: 2004

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico

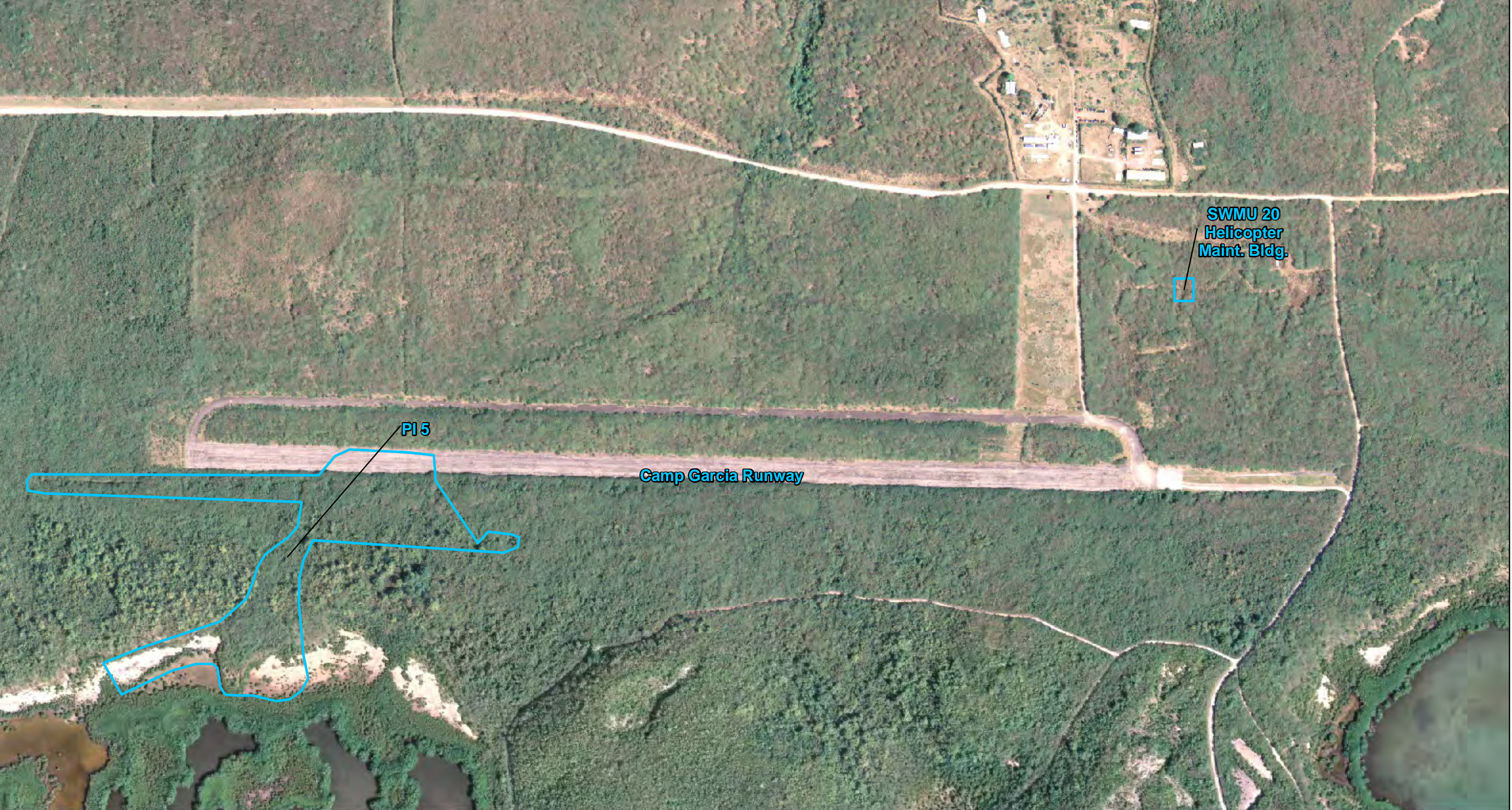


Legend
Approximate Site Location

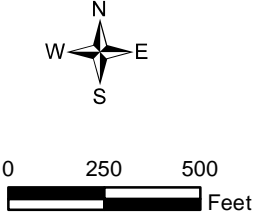


Imagery Date: 2005

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico



Legend
Approximate Site Location



Imagery Date: 2007

Historic Imagery
Former VNTR Camp Garcia Runway,
PI-5, and SWMU 20
Former Vieques Naval Training Range
Vieques, Puerto Rico

Appendix F

Real Estate Documentation

Appendix F

Pages from the NASD Environmental Baseline Survey, Appendix B

Real Estate Acquisition Summary Map

Program Management Company (PMC). 2000. *Environmental Baseline Survey, Naval Ammunition Support Detachment Vieques, Vieques Island, Puerto Rico*. October 17.

Appendix F

Transfer of Property to Puerto Rico Ports Authority
Quitclaim Deed

Holaday, Duncan. 2000. DEED, Quitclaim. Reference No. N62470-00-RP-00104. February 28.

File No. 4500-N00389-0037
NAVSTA ROOS RDS VIEQUES

All correspondence pertaining
to this contract should include
a reference to
No. N62470-00-RP-00104

DEED

THIS INDENTURE, is made this 28th day of February, 2000, between the UNITED STATES OF AMERICA (GOVERNMENT), acting by and through the Department of the Navy, represented by the Deputy Assistant Secretary of the Navy for Installations and Facilities, and the COMMONWEALTH OF PUERTO RICO and the Puerto Rico Ports Authority (GRANTEE), represented by the Governor of Puerto Rico, Pedro Rossello Gonzalez.

WHEREAS, the GOVERNMENT owns that certain real property identified as the Naval Ammunition Support Detachment, Vieques, Puerto Rico (Station); and

WHEREAS, the GRANTEE now operates a public airport adjacent to the Station, which is currently known as the Antonio Rivera Rodriguez Airport (Airport); and

WHEREAS, the GRANTEE has requested the conveyance of property interests on that portion of the Station hereinafter described for airport purposes; and

WHEREAS, the Secretary of the Navy has found that the granting of such property on the terms and conditions hereinafter stated will not be incompatible with the public interest; and

WHEREAS, said conveyance is authorized pursuant to the authority of 49 U.S.C. §47125; and

WHEREAS, said conveyance is hereby expressly made and accepted subject to all requirements and conditions set forth in 49 U.S.C. §47125 as in effect as of the date of this deed; and

NOW THEREFORE, this indenture witnesseth that, in consideration of the benefits which shall accrue to it and to the public by virtue of the use of the property hereinafter described:

a. The GOVERNMENT has remised, released and quitclaimed, and by these presents does remise, release and quitclaim unto the GRANTEE, and its successors and assigns, forever, without any warranty express or implied, all right, title and interest which the GOVERNMENT has in those portions of the Station hereinafter called Parcel "A" and Parcel "B", or the "PREMISES", and

b. The GOVERNMENT hereby reserves a temporary easement for the maintenance of Explosive Safety Quantity Distance (ESQD) arcs, such easement being on, in, over and under that portion of the Station called Parcel "B ". The GOVERNMENT hereby assures that the movement of ammunition is ongoing and will be completed as soon as possible. The aforementioned easement shall terminate upon written notification from the GOVERNMENT that the maintenance of the ESQD arcs are no longer required.

All as situated in the Ward of Mosquito, Municipality of Vieques, Puerto Rico, being more particularly described as follows:

Parcel "A"

All that certain piece or parcel of land named Parcel "A" situated in the Ward of Mosquito, Municipality of Vieques, Puerto Rico, comprising 70.7526 acres equivalent to 72.8491 cuerdas, bounded on the North by the "Sonda de Vieques" and lands owned by the U.S. Government; on the South by the Naval Ammunition Support Detachment (NASD) Access Road; on the East by the Commonwealth of Puerto Rico, and on the West by the U.S. Government; this parcel includes a portion of Parcel "A-1", which is an archeological site partially located inside the main Parcel "A", said main Parcel "A" being more particularly described as follows:

Beginning at Station PK-6, a steel nail at the south western corner of the bridge on State Road P.R. No. 200, and located near the entrance gate to the Naval Ammunition Facility Compound having Lambert Coordinates North 109,879.0853 feet, East 826,230.9288 feet; thence N 30° 38' 44.596" W, 209.5033 feet to Point 1802, marking the south eastern corner and TRUE POINT OF BEGINNING of the hereinafter described parcel, said Point 1802, having Lambert Coordinates North 110,059.3284 feet, East 826,124.1391 feet; thence S 63° 16' 12.039" W, 297.1663 feet to Point 1564; thence N 54° 02' 31.664" W, 33.0072 feet to Point 1563; thence N 49° 01' 46.624" W, 43.7248 feet to Point 1562; thence N 52° 29' 20.837" W, 53.3928 feet to Point 1561; thence N 59° 24' 51.873" W, 66.2033 feet to Point 1560; thence N 68° 10' 44.712" W, 76.4743

feet to Point 1559; thence N 75° 46' 14.391" W, 57.8344
 feet to Point 1558; thence N 81° 42' 23.664" W, 71.3882
 feet to Point 1557; thence N 84° 06' 39.823" W, 81.7894
 feet to Point 1556; thence S 88° 06' 28.275" W, 71.4176
 feet to Point 1555; thence S 77° 26' 06.133" W, 82.0778
 feet to Point 1554; thence S 69° 17' 55.584" W, 58.3953
 feet to Point 1553; thence S 69° 05' 45.253" W, 283.7225
 feet to Point 1552; thence S 68° 42' 46.771" W, 45.0228
 feet to Point 1551; thence S 72° 06' 11.281" W, 43.0616
 feet to Point 1550; thence S 73° 37' 24.419" W, 36.6403
 feet to Point 1549; thence S 76° 51' 02.226" W, 36.0393
 feet to Point 1548; thence S 79° 39' 18.476" W, 36.0116
 feet to Point 1547; thence S 82° 17' 55.302" W, 35.7066
 feet to Point 1546; thence S 85° 50' 49.031" W, 35.6568
 feet to Point 1545; thence S 88° 02' 06.138" W, 36.8380
 feet to Point 1544; thence S 89° 55' 12.385" W, 87.4964
 feet to Point 1543; thence S 88° 28' 47.020" W, 76.4030
 feet to Point 1542; thence S 86° 56' 59.210" W, 118.8382
 feet to Point 1541; thence S 85° 46' 35.498" W, 109.6642
 feet to Point 1540; thence S 84° 00' 01.983" W, 89.4498
 feet to Point 1539; thence S 83° 04' 37.189" W, 164.0225
 feet to Point 1538; thence S 83° 11' 28.863" W, 51.5289
 feet to Point 1537; thence S 82° 34' 04.136" W, 83.0113
 feet to Point 1536; thence S 81° 54' 43.894" W, 97.6409
 feet to Point 1535; thence S 81° 19' 54.185" W, 110.5616
 feet to Point 1534; thence S 80° 43' 13.585" W, 107.8173
 feet to Point 1533; thence S 79° 46' 11.540" W, 100.3435
 feet to Point 1532; thence S 78° 57' 05.786" W, 150.8350
 feet to Point 1531; thence S 78° 24' 48.220" W, 250.2142
 feet to Point 1530; thence S 77° 52' 12.442" W, 99.9278
 feet to Point 1529; thence S 76° 57' 19.918" W, 50.5883
 feet to Point 1528; thence S 76° 21' 29.156" W, 37.5685
 feet to Point 1527; thence S 76° 14' 42.204" W, 62.4966
 feet to Point 1526; thence S 76° 05' 18.606" W, 50.3558
 feet to Point 1525; thence S 75° 11' 11.759" W, 50.1760
 feet to Point 1524; thence S 75° 13' 11.428" W, 49.9597
 feet to Point 1523; thence S 75° 01' 50.494" W, 45.7745
 feet to Point 1522; thence S 74° 05' 14.065" W, 262.9037
 feet to Point 1521; thence S 73° 31' 20.732" W, 183.5576
 feet to Point 1755; marking the south western corner;
 thence N 45° 49' 28.190" W, 141.2379 feet to Point 1578;
 thence N 06° 25' 35.686" E 298.1627 feet to Point 1579;
 thence N 06° 29' 09.013" E, 225.6096 feet to Point 1758;
 thence along a circular curve of radius 6,600 feet from
 origin Point 374 located at the south east corner of
 existing Navy pier, having Lambert Coordinates North
 115,911.7217 feet, East 819,079.9776 feet, extending an arc
 of 2,204.5499 feet to Point 1759, this arc subtended by a
 chord from Point 1758, bearing
 N 52° 33' 05.532" E, 2,194.3156 feet to Point 1759; thence
 S 65° 45' 14.841" E, 76.7573 feet to Point 495, shoreline;
 thence S 69° 29' 21.603" E, 308.1311 feet to Point 494,
 shoreline; thence S 73° 52' 19.024" E, 231.8190 feet to
 Point 493, shoreline; thence S 81° 20' 03.884" E, 174.7882
 feet to Point 492, shoreline; thence S 83° 56' 43.113" E,
 177.2587 feet to Point 491, shoreline; thence

N 84° 52' 02.035" E, 139.7574 feet to Point 490, shoreline; thence N 70° 25' 31.726" E, 231.1865 feet to Point 1517, shoreline; thence S 18° 08' 05.908" E, 179.9724 feet to Point 1516; thence S 76° 38' 31.862" W, 15.4164 feet to Point 1515; thence S 76° 38' 28.614" W, 616.3192 feet to Point 1514; thence S 76° 38' 30.328" W, 984.2562 feet to Point 1513; thence S 13° 21' 32.820" E, 550.0025 feet to Point 1512; thence N 76° 38' 30.010" E, 984.2498 feet to Point 1511; thence N 76° 38' 29.825" E, 1,062.6611 feet to Point 1510; thence S 44° 40' 30.302" E, 16.2001 feet to Point 1509; thence S 33° 27' 36.374" E, 71.1880 feet to Point 1508; thence S 28° 05' 13.836" E, 585.1314 feet to Point 1802 the TRUE POINT OF BEGINNING, containing 70.7526 acres, more or less, as shown and identified on the Commonwealth of Puerto Rico, Puerto Rico Ports Authority, Engineering Bureau, Survey plan drawing, entitled, "PROPOSED LAND TO BE CONVEYED FROM THE UNITED STATES GOVERNMENT TO THE COMMONWEALTH OF PUERTO RICO FOR RUNWAY EXPANSION PURPOSES, AT VIEQUES AIRPORT, VIEQUES, PUERTO RICO", which has been marked Exhibit "A" and is attached hereto and made a part hereof.

PARCEL "B"

All that certain piece or parcel of land named Parcel "B" situated in the Ward of Mosquito, Municipality of Vieques, Puerto Rico, comprising 37.9820 acres equivalent to 39.1074 cuerdas, bounded on the North and South by lands owned by the U.S. Government; on the East by land owned by the U.S. Government and the Commonwealth of Puerto Rico; on the West by lands owned by the U.S. Government. Said Parcel "B" being more particularly described as follows:

Beginning at Station Green Area 1, a 5/8" steel rod on the green area on NASD State Road, and located near the existing security fence of the GOVERNMENT, having Lambert Coordinates North 109,365.7186 feet, East 822,040.8473 feet, thence S 68° 05' 16.409" W, 700.7005 feet to Point 1786 marking the south western corner and the TRUE POINT OF BEGINNING of the hereinafter described parcel, said Point 1786, having Lambert Coordinates North 109,104.2285 feet, East 821,390.7672 feet, thence N 13° 34' 02.787" W, 1,510.0000 feet to Point 1785; thence N 84° 57' 47.977" E, 1,719.0185 feet to Point 1782; thence N 84° 57' 47.952" E, 462.9000 feet to Point 1803; thence along a circular curve of radius 6,600 feet from origin Point 374 located at the south east corner of existing NAVY pier, having Lambert Coordinates North 115,911.7217 feet, East 819,079.9776 feet, extending an arc of 1,250.8654 feet to Point 1758, this arc subtended by a chord from Point 1803, bearing S 56° 41' 27.738" W, 1,248.9941 feet to Point 1758, security fence; thence S 06° 29' 08.990" W, 225.6096 feet to Point 1579, security fence; thence S 06° 25' 35.740" W, 298.1627 feet to Point 1578, security fence; thence S 45° 49' 28.190" E, 141.2379 feet to Point 1755, security fence; thence N 73° 31' 20.843" E, 183.5576 feet to Point 1521, security fence; thence N 74° 05' 13.538" E, 27.2515 feet to

Point 1804; thence S 67° 54' 06.471" W, 1,100.9960 feet to Point 1786 the TRUE POINT OF BEGINNING, containing 37.9820 Acres more or less, as shown and identified on the Commonwealth of Puerto Rico, Puerto Rico Ports Authority, Engineering Bureau, Survey plan drawing entitled, "PROPOSED LAND TO BE CONVEYED FROM THE UNITED STATES GOVERNMENT TO THE COMMONWEALTH OF PUERTO RICO FOR RUNWAY EXPANSION PURPOSES, AT VIEQUES AIRPORT, VIEQUES, PUERTO RICO", which has been marked Exhibit "A", and is attached hereto and made a part hereof.

TO HAVE AND TO HOLD the PREMISES herein granted with all the privileges and appurtenances thereto belonging, to the said GRANTEE and its successors and assigns forever, subject to the conditions set forth in this DEED.

The GRANTEE, by the acceptance of this DEED, does covenant and agree for itself, its successors in function, and its assigns, forever, to the terms and conditions specified below, which are applicable to both Parcel "A" and Parcel "B" and the interests in these lands herein conveyed:

1. The GRANTEE shall use Parcel "A" and Parcel "B" for airport purposes and will develop Parcel "A" and Parcel "B" to meet future development of the Airport in accordance with the National Plan of Integrated Airport Systems. The GRANTEE will develop that interest for airport purposes on or before the period provided in the plan or within a period satisfactory to the Administrator of the Federal Aviation Administration (Administrator), and any use of that interest for other than airport purposes will be subject to such terms and conditions as the Administrator may prescribe.

2. The GRANTEE shall not grant or permit any exclusive right forbidden by 49 U.S.C. §47107 at the Airport.

3. Any later transfer of Parcel "A" and/or Parcel "B" will be subject to the covenants and conditions set forth in this instrument of conveyance.

4. For as long as the GOVERNMENT retains an easement interest in Parcel "B", the GRANTEE shall not install electromagnetic generating sources on Parcel "A", Parcel "B" or on the Airport without the prior approval of the local representative for the U.S. Department of the Navy.

5. All rights granted to the GRANTEE by the GOVERNMENT are subject to all existing permits, easements, utilities and roads located within Parcels "A" and "B" or as relocated

therein. It should be noted that the attached drawing identifies power lines and a water main that currently exist on Parcels "A" and "B", are currently utilized by the Puerto Rico Aqueducts and Sewer Authority (PRASA), but may or may not be covered by a real estate document. This conveyance is subject to PRASA's right of ingress and egress to the power lines and water main for the purposes of constructing, installing, maintaining, repairing, replacing and improving said power lines and water main, and any easements that are herein granted or modified for said purpose.

6. The GRANTEE is hereby given notice that a portion of the archaeological site which is identified as Parcel "A-1" on the attached drawing is located within Parcels "A" and "B". Parcel "A-1" is located in the Ward of Mosquito, Municipality of Vieques, Puerto Rico. The conveyed portion of Parcel "A-1" within the boundaries of Parcels "A" and "B" is more particularly described as follows:

Parcel "A-1"

All that certain piece or parcel of land named Parcel "A-1", situated in Ward of Mosquito, Municipality of Vieques, Puerto Rico, bounded on the North by the parcel of lands owned by the U.S. Government; on the South by the parcel from lands owned by the U.S. Government; on the East by the parcel from lands owned by the U.S. Government; and on the West by the parcel from lands owned by the U.S. Government; said Parcel "A-1" being more particularly described follows:

Beginning at the Ceiba tree, at the South East of the abandoned Guard Station on old NASD Access Road, having Lambert Coordinates North 110,321.5584 feet, East 822,149.0586 feet; thence N 81° 00' 18" E, a distance of 970.79 feet to Point 979, a 2" diameter galvanized steel pipe marking the south west corner and TRUE POINT OF BEGINNING of the hereinafter described parcel, said Parcel "A-1", having Lambert Coordinates North 110,473.3419 feet, East 823,107.9111 feet; thence N 13° 12' 33" W, 283.09 feet to Point 982; thence N 84° 57' 48" E, 167.45 feet to Point 1803 point of curvature of a non-tangent curve, concave to the Northwest, having a radius of 6,600.0000 feet, a central angle of 2° 50' 53", and a chord of 328.03 feet bearing N 49° 50' 15" E; thence Northeast along said curve, a distance of 328.06 feet to Point 981; thence S 56° 52' 41" E, 45.03 feet; to Point 972; thence S 00° 05' 07" W, 45.17 feet; to Point 973; thence S 44° 18' 59" W, 64.51 feet to Point 974; thence N 89° 54' 53" W, 101.96 feet to Point 975; thence

S 04° 50' 33" W, 322.58 feet to Point 980; thence
S 73° 20' 58" W", 225.65 feet to Point 979 the TRUE POINT OF
BEGINNING; said described tract containing 84,648.06 square
feet (1.94 acres), more or less. Shown and identified on
The Commonwealth of Puerto Rico, Puerto Rico Ports
Authority, Engineering Bureau, Survey plan drawing
entitled, "PROPOSED LAND TO BE CONVEYED FROM THE UNITED
STATES GOVERNMENT TO THE COMMONWEALTH OF PUERTO RICO FOR
RUNWAY EXPANSION PURPOSES, AT VIEQUES AIRPORT, VIEQUES,
PUERTO RICO", which has been marked Exhibit "A", and is
attached hereto and made a part hereof.

7. In consideration of the conveyance of Parcel "A" and
Parcel "B", which include a portion of Parcel "A-1" the GRANTEE
hereby agrees on behalf of itself, its successors and assigns
to maintain and preserve the above described portion of Parcel
"A-1" in accordance with the provisions of Paragraphs a.
through j. below:

a. The GRANTEE will notify the Puerto Rico State
Historic Preservation Officer in writing prior to undertaking
any disturbance of the ground surface or any other action on
the conveyed portion of Parcel "A-1" that would affect the
physical integrity of this site. Such notice shall describe in
reasonable detail the proposed undertaking and its expected
effect on the physical integrity of Parcel "A-1".

b. Within thirty (30) calendar days of the Puerto
Rico State Historic Preservation Officer's receipt of
notification provided by the GRANTEE pursuant to Paragraph a.
above, the Puerto Rico State Historic Preservation Office
(SHPO) will respond to the GRANTEE in writing as follows:

1. That the GRANTEE may proceed with the
proposed undertaking without further consultation; or

2. That the GRANTEE must initiate and complete
consultation with the SHPO before it can proceed with the
proposed undertaking.

c. If the SHPO fails to respond to the GRANTEE's
written notice within thirty (30) calendar days of the SHPO's
receipt of the same, then the GRANTEE may proceed with the
proposed undertaking without further consultation with the
SHPO.

d. If the response provided to the GRANTEE by the
SHPO pursuant to Paragraph b. above requires consultation with
the SHPO, then both parties will so consult in good faith to

arrive at mutually agreeable and appropriate measures that the GRANTEE will employ to mitigate any adverse effects associated with the proposed undertaking. If the parties are unable to arrive at such mutually-agreeable mitigation measures, then the GRANTEE shall, at a minimum, undertake recordation for the concerned property in accordance with the Secretary of Interior's standards for recordation and any applicable Commonwealth of Puerto Rico standards for recordation, or in accordance with such other standards to which the parties may mutually agree prior to proceeding with the proposed undertaking. Pursuant to this covenant, any mitigation measures to which the GRANTEE and the SHPO mutually agree, or any recordation that may be required, shall be carried out solely at the expense of the GRANTEE.

e. The GRANTEE shall make every reasonable effort to prohibit any person from vandalizing or otherwise disturbing Parcel "A-1", determined by the Puerto Rico SHPO and the GOVERNMENT to be eligible for inclusion in the National Register of Historic Places. Any such vandalism or disturbance shall be reported to the Puerto Rico SHPO promptly.

f. The Puerto Rico SHPO shall be permitted at all reasonable times to inspect Parcel "A-1" in order to ascertain its condition and to fulfill its responsibilities hereunder.

g. In the event of a violation of this covenant, and in addition to any remedy now or hereafter provided by law, the Puerto Rico SHPO or any other interested party may, following reasonable notice to the GRANTEE, institute suit to enjoin said violation or to require the restoration of any archeological site affected by such violation. The successful party shall be entitled to recover all costs or expenses incurred in connection with any such suit, including all court costs and attorney's fees.

h. The GRANTEE agrees that the Puerto Rico SHPO may, at its discretion and without prior notice to the GRANTEE, convey and assign all or part of its rights and responsibilities contained in this DEED to a third party.

i. The archaeological requirements specified in this DEED are binding on the GRANTEE, its successors and assigns in perpetuity. Restrictions, stipulations, and covenants contained herein shall be inserted by the GRANTEE verbatim or by express reference in any other deed or other legal instrument by which it divests itself of either the fee simple

title or any other lesser estate in the conveyed portion of Parcel "A-1" or any part thereof.

j. The failure of the Puerto Rico SHPO to exercise any right or remedy granted under this instrument shall not have the effect of waiving or limiting the exercise of any other right or remedy or the use of such right or remedy at any other time.

8. The archaeological requirements specified in this DEED shall be a binding servitude upon the real property that includes the conveyed portion of Parcel "A-1" and shall be deemed to run with the land. Execution of this DEED shall constitute conclusive evidence that the GRANTEE agrees to be bound by the foregoing conditions and restrictions and to perform the obligations herein set forth.

9. The following provisions govern responsibility for addressing environmental conditions on Parcel "A" and Parcel "B":

a. Pursuant to Section 42 U.S.C. Section 9620(h)(4) of the Comprehensive Environmental Response, Compensation and Liability Act, as amended, hereinafter called CERCLA, and the CERCLA lead agent authority of the Department of Defense created by 42 U.S.C. Section 9604 and Section 9615 of CERCLA, Section 2.d. of Executive Order 12580 (52 FR 2923; Jan. 29, 1987), and the National Contingency Plan (40 CFR Section 300.5), the GOVERNMENT, in consultation with the Commonwealth of Puerto Rico Environmental Quality Board, has determined that the PREMISES are uncontaminated, based on the finding that no hazardous substances and no petroleum products or their derivatives are known to have been released or disposed of at the PREMISES. As such, the transfer of the PREMISES is consistent with protection of human health and the environment regardless of any contemplated future reuses of the PREMISES.

b. Further, the GOVERNMENT provides assurances that, in accordance with, and to the extent required at the PREMISES by applicable federal, state, and local laws, the GOVERNMENT shall timely:

(1) Assess, inspect, investigate, study, and remove or remediate, as appropriate, the release or threatened release of a hazardous substance, pollutant or contaminant, petroleum or a petroleum derivative, from or on the PREMISES,

caused by Department of Defense activities, and found to be necessary after the date of the transfer; and

(2) Settle or defend any claim, demand, or order made by federal, state or local regulators or third parties in connection with any release or threatened release of a hazardous substance, pollutant or contaminant, petroleum or a petroleum derivative, from or on the PREMISES, caused by Department of Defense activities, and found to be necessary after the date of the transfer.

c. Prior to taking any action or reaching any final settlement under this section that could adversely impact the GRANTEE's or any successor in interest's use of the PREMISES, the GOVERNMENT shall consult with the GRANTEE or any successors in interest to minimize any such impact.

d. The GRANTEE or any successors in interest seeking from the GOVERNMENT a response action as described above, shall:

(1) Notify the GOVERNMENT in writing within ninety (90) days after learning of any previously unidentified condition at the PREMISES that suggests a response action is necessary, or within ninety (90) days after receiving notice of a claim by federal, state or local regulators, or other third parties of the existence of any condition at the PREMISES that suggests a response action is necessary. If the GRANTEE or any successor in interest is served with a complaint or written notice of a claim by federal, state, or local regulators, the served party shall provide the GOVERNMENT with a copy of such document no later than fifteen (15) days following service of such document;

(2) Furnish the GOVERNMENT copies of pertinent papers the GRANTEE or successor in interest receives;

(3) Provide, upon request of the GOVERNMENT, reasonable access to the records and personnel of the GRANTEE or successor in interest for purposes of defending, or resolving the need for additional response action; and

(4) Provide, upon request of the GOVERNMENT, reasonable access to the property of the GRANTEE or successor in interest for purposes of performing a response action on the PREMISES or on adjoining property.

e. For the purpose of this section, the following terms have the meanings indicated below:

(1) "Release," "threatened release," "hazardous substance," "pollutant," "contaminant," "removal," "remedial action," and "response" have the meanings given such terms under CERCLA and U.S. Environmental Protection Agency regulations implementing CERCLA.

(2) "Department of Defense activities" means the Department of Defense's: construction, installation, placement, operation, maintenance, misuse, abandonment, or failure to maintain the buildings and equipment on the PREMISES; or failure to satisfy any otherwise legally applicable obligation to investigate or remediate any environmental conditions existing at the PREMISES. "Department of Defense activities" does not mean the release or threatened release of a hazardous substance, pollutant, contaminant, petroleum, or a petroleum derivative, to the extent that the GOVERNMENT shows that the release or threatened release is caused or contributed to by the GRANTEE or a successor in interest.

(3) "Environmental condition(s)" means any hazardous substance, pollutant, or contaminant including hazardous waste or hazardous constituent, petroleum, or petroleum derivative disposed of, released, or existing in environmental media such as soil, subsurface soil, air, groundwater, surface water, or subsurface geological formations at levels above background.

f. So that the UNITED STATES OF AMERICA may fulfill responsibilities established herein, the UNITED STATES OF AMERICA reserves a PERPETUAL RIGHT OF ACCESS to Parcel "A" and Parcel "B" for any case in which the UNITED STATES OF AMERICA is obligated to undertake a response action or corrective action after the date of this DEED at Parcel "A" and/or Parcel "B", or if such access is necessary to carry out a response action or corrective action on any adjoining property. Such perpetual right of access shall run with the land and be binding on all future owners of Parcel "A" and Parcel "B". The United States of America shall give notice to the GRANTEE and shall coordinate with the GRANTEE should such access be required. The GRANTEE also shall include in any real property instrument or contractual agreement with any other party governing use or possession of Parcel "A" and/or Parcel "B", a provision clearly providing the UNITED STATES OF AMERICA a

right of access to Parcel "A" and Parcel "B" for any case in which the UNITED STATES OF AMERICA is obligated to undertake a response action or corrective action after the date of this DEED at Parcel "A" and/or Parcel "B" or such access as necessary to carry out any response action or corrective action on any adjoining property.

10. The GRANTEE shall ensure that the future use and development of Parcel "A" and Parcel "B" is done in compliance with all federal and Commonwealth of Puerto Rico laws and regulations regarding use of floodplains.

11. The GRANTEE acknowledges the obligations established below regarding future liability for environmental conditions on Parcel "A" and Parcel "B".

a. For good and valuable consideration acknowledged by the GRANTEE, the GRANTEE, for itself and for the GRANTEE's successors and assigns, hereby shall reimburse or indemnify, as appropriate, the GOVERNMENT, and the GOVERNMENT's departments, branches, instrumentalities, components and successors, for, from and against any claims, demands, expenses, damages, liabilities (including sums paid in settlement of claims), fines, penalties, judgments, including without limitation third party claims for personal injury, personal property damage or under environmental laws allowing for private party enforcement, interest or losses, and all costs and expenses incurred in connection therewith, that arise directly or indirectly from or in connection with the operations of the GRANTEE on Parcel "A" and Parcel "B" after the date of this DEED or any condition of Parcel "A" and Parcel "B" or other property (including without limitation the adjacent real property owned by the UNITED STATES OF AMERICA), including without limitation the presence, suspected presence, release, suspected release, disposal or suspected disposal of any hazardous substance of any kind or petroleum product or their derivatives, whether into the air, soil, surface water, groundwater, pavement, structures, fixtures at Parcel "A" and Parcel "B" or other property, including without limitation adjacent Government-owned property, resulting from the acts or omissions of the GRANTEE, or the GRANTEE's successors and assigns.

b. Without limiting the generality of the foregoing, the indemnification set forth herein shall specifically cover costs, including capital, operating and maintenance costs, incurred by the GOVERNMENT in connection with any response

action or corrective action undertaken by the GOVERNMENT under federal, Puerto Rico or local law or required by any federal, Puerto Rico or local governmental agency or political subdivision or performed by any federal, Puerto Rico or local governmental agency or political subdivision or by any non-governmental entity or person because of the presence, suspected presence, release, suspected release, disposal or suspected disposal of any hazardous substance or petroleum product or their derivatives in the air, soil, surface water or groundwater at Parcel "A" and Parcel "B" or other property (including without limitation adjacent real property owned by the UNITED STATES OF AMERICA), resulting directly or indirectly from or in connection with the operations of the GRANTEE, or the GRANTEE's successors and assigns.

c. For good and valuable consideration acknowledged by the GRANTEE, the GRANTEE releases and discharges the UNITED STATES OF AMERICA, and all of its departments, branches, instrumentalities, components and successors, from any and all claims, demands, actions or causes of actions of every kind and nature whatsoever that may have accrued or may ever accrue to the GRANTEE, with knowledge that such may now or in the future exist, that relate to, or are in any way connected with, any environmental condition on Parcel "A" and Parcel "B" after the date of this DEED, including without limitation conditions caused on Parcel "A" and Parcel "B" by the presence, suspected presence, release, suspected release, disposal or suspected disposal in the air, soil, surface water or groundwater at Parcel "A" and Parcel "B" of any hazardous substance or petroleum product or their derivatives. This release includes without limitation any and all claims for indemnity or contribution the GRANTEE may have against the UNITED STATES OF AMERICA based on the acts or omissions of any department, branch, instrumentality, component or successor thereof, either after the date of this DEED, under CERCLA or other federal and Commonwealth of Puerto Rico laws, either now in effect or that may be enacted in the future, that govern liability for the remediation of any hazardous substance or petroleum product or their derivatives. This release is binding on all of the GRANTEE's successors and assigns.

d. Nothing in this DEED shall be interpreted as waiving the rights of the UNITED STATES OF AMERICA to recover from the GRANTEE, or the GRANTEE's successors and assigns, any and all damages, claims, losses, liabilities, penalties, fines, liens, judgements, costs, or expenses whatsoever, that may arise on account of or in any way connected with operations of

the GRANTEE, or the GRANTEE's successors and assigns, on Parcel "A" and Parcel "B" after the date of this DEED, or on account of any condition of Parcel "A" and Parcel "B" or other property (including without limitation adjacent real property owned by the UNITED STATES OF AMERICA), including without limitation the presence, suspected presence, release, suspected release, disposal or suspected disposal of any hazardous substance of any kind or petroleum product or their derivatives, whether into the air, soil, surface water, groundwater, pavement, structures, fixtures, or other personalty at Parcel "A" and Parcel "B" or other property, including without limitation adjoining real property owned by the UNITED STATES OF AMERICA, resulting from the acts or omissions of the GRANTEE, or the GRANTEE's successors and assigns, after the date of this DEED, under applicable federal, Puerto Rico or local law, including without limitation CERCLA.

e. The indemnification and release set out herein shall be forever binding on the GRANTEE, and the GRANTEE's successors and assigns.

f. For the purposes of this provision, the term "hazardous substance" means any hazardous, harmful, odorous, radioactive, toxic or dangerous waste, substance or material, including, without limitation, asbestos, and polychlorinated biphenyls ("PCBs"), and any hazardous or toxic substance, material or waste, or any pollutant or contaminant defined as such in, or for the purposes of, any environmental laws as are now or in the future may be in effect. The GRANTEE's obligation under this provision shall extend to any and all such hazardous substances whether or not such substance was defined, recognized, known, or suspected of being hazardous, toxic, dangerous, or wasteful at the time of any act or omission giving rise to the GRANTEE's obligation.

12. For as long as the GOVERNMENT retains an easement interest in Parcel "B", the GRANTEE shall request and obtain prior approval from the local representative for the U.S. Department of the Navy for all proposed construction on the portion of Parcel "A" located north of the aircraft runway and within Parcel "B". All construction shall be in accordance with GOVERNMENT approved plans and will factor in building limitations and restrictions on electromagnetic generating sources.

This conveyance is further limited by the terms and covenants provided herein below, which are applicable to Parcel "A":

13. When necessary the GRANTEE shall undertake reasonable and necessary drainage projects in accordance with applicable laws and regulations.

This conveyance is further limited by the terms and covenants provided herein below, which are applicable to Parcel "B":

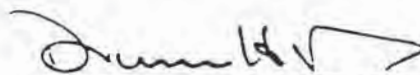
14. The GRANTEE, and its successors and assigns, may use Parcel "B" for any purpose except the GRANTEE, and its successors and assigns, shall not take any action on Parcel "B" that will interfere with the maintenance of the ESQD arcs. If at any future time the GOVERNMENT determines that the GRANTEE's use of Parcel "B" unreasonably interferes with any of the GOVERNMENT's activities, the GOVERNMENT shall provide written notice to the GRANTEE of the said interference, and the GRANTEE shall immediately terminate said use of Parcel "B", in whole or in part, to the extent necessary to eliminate such interference.

15. The GOVERNMENT shall provide assistance to the GRANTEE so as to guarantee to the registration of this transfer to the Government of Puerto Rico at the Puerto Rico Property Registry.

THIS CONVEYANCE is granted pursuant to the authority contained in 49 U.S.C. §47125, and is not subject to the provisions of Section 2662, Title 10 of the United States Code.

IN WITNESS WHEREOF, the UNITED STATES OF AMERICA, acting by and through its Deputy Assistant Secretary of the Navy (Installations and Facilities), has hereunto subscribed its name and affixed the seal of the United States Department of the Navy.

UNITED STATES OF AMERICA



Mr. Duncan Holaday
Deputy Assistant Secretary of the Navy
(INSTALLATIONS AND FACILITIES)

COMMONWEALTH OF VIRGINIA
COUNTY OF ARLINGTON

() to-wit:

I, Lorraine E. Bradley, a Notary Public in and for the State of Virginia, do hereby certify that Mr. Duncan Holaday, whose name is signed to the foregoing Deed, has this day, acknowledged the same before me in the County and State aforesaid.

Given under my hand this 28th day of February, 2000.

Lorraine E. Bradley
NOTARY PUBLIC

My Commission expires 30 November 2003

(SEAL)

The approval of the Attorney General required by 49 U.S.C. § 47125 is hereby evidenced by the signature of the Chief, Land Acquisitions Section, Environment and Natural Resources Division, U.S. Department of Justice, to whom the Attorney General's authority under 49 U.S.C. § 47125 has been duly delegated.

Virginia P. Butler

Virginia P. Butler
Chief, Land Acquisition Section

IN WITNESS WHEREOF, THE COMMONWEALTH OF PUERTO RICO and the Puerto Rico Ports Authority hereby accepts the terms and conditions herein provided by this conveyance document, and has hereunto subscribed its name and affixed the seal of the Commonwealth of Puerto Rico.

Pedro Rossello

Pedro Rossello Gonzalez
Governor
Commonwealth of Puerto Rico
Puerto Rico Ports Authority

PARCEL "A"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
			110059.3284	826124.1391	1802	TO BE ESTABLISHED
1802-1564	S 63° 16' 12.039" W	297.1663	109925.6670	825858.7292	1564	" "
1564-1563	N 54° 02' 31.664" W	33.0072	109945.0485	825832.0115	1563	" "
1563-1562	N 49° 01' 46.624" W	43.7248	109973.7175	825798.9972	1562	" "
1562-1561	N 52° 29' 20.837" W	53.3928	110006.2290	825756.6440	1561	" "
1561-1560	N 59° 24' 51.873" W	66.2033	110039.9149	825699.6515	1560	" "
1560-1559	N 68° 10' 44.712" W	76.4743	110068.3410	825628.6566	1559	" "
1559-1558	N 75° 46' 14.391" W	57.8344	110082.5569	825572.5966	1558	" "
1558-1557	N 81° 42' 23.664" W	71.3882	110092.8541	82501.9550	1557	" "
1557-1556	N 84° 06' 39.823" W	81.7894	110101.2457	825420.5971	1556	" "
1556-1555	S 88° 06' 28.275" W	71.4176	110098.8877	825349.2184	1555	" "
1555-1554	S 77° 26' 06.133" W	82.0778	110081.0319	825269.1064	1554	" "
1554-1553	S 69° 17' 55.584" W	58.3953	110060.3895	825214.4813	1553	" "
1553-1552	S 69° 05' 45.253" W	283.7225	109959.1559	824949.4337	1552	" "
1552-1551	S 68° 42' 46.771" W	45.0228	109942.8109	824907.4827	1551	" "
1551-1550	S 72° 06' 11.281" W	43.0616	109929.5779	824866.5048	1550	" "
1550-1549	S 73° 37' 24.419" W	36.6403	109919.2472	824831.3510	1549	" "
1549-1548	S 76° 51' 02.226" W	36.0393	109911.0486	824796.2566	1548	" "
1548-1547	S 79° 39' 18.476" W	36.0116	109904.5818	824760.8304	1547	" "
1547-1546	S 82° 17' 55.302" W	35.7066	109899.7969	824725.4459	1546	" "
1546-1545	S 85° 50' 49.031" W	35.6568	109897.2146	824689.8827	1545	" "



CONTINUATION - PARCEL "A"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
1545-1544	S 88° 02' 06.138" W	36.8380	109895.9515	824653.0664	1544	TO BE ESTABLISHED
1544-1543	S 89° 55' 12.385" W	87.4964	109895.8294	824565.5701	1543	" "
1543-1542	S 88° 28' 47.020" W	76.4030	109893.8024	824489.1940	1542	" "
1542-1541	S 86° 56' 59.210" W	118.8382	109887.4789	824370.5242	1541	" "
1541-1540	S 85° 46' 35.498" W	109.6642	109879.4025	824261.1577	1540	" "
1540-1539	S 84° 00' 01.983" W	89.4498	109870.0533	824172.1979	1539	" "
1539-1538	S 83° 04' 37.189" W	164.0225	109850.2828	824009.3713	1538	" "
1538-1537	S 83° 11' 28.863" W	51.5289	109844.1738	823958.2058	1537	" "
1537-1536	S 82° 34' 04.136" W	83.0113	109833.4361	823875.8919	1536	" "
1536-1535	S 81° 54' 43.894" W	97.6409	109819.6989	823779.2222	1535	" "
1535-1534	S 81° 19' 54.185" W	110.5616	109803.0358	823669.9235	1534	" "
1534-1533	S 80° 43' 13.585" W	107.8173	109785.6501	823563.5172	1533	" "
1533-1532	S 79° 46' 11.540" W	100.3435	109767.8289	823464.7689	1532	" "
1532-1531	S 78° 57' 05.786" W	150.8350	109738.9231	823316.7296	1531	" "
1531-1530	S 78° 24' 48.220" W	250.2142	109688.6679	823071.6142	1530	" "
1530-1529	S 77° 52' 12.442" W	99.9278	109667.6702	822973.9174	1529	" "
1529-1528	S 76° 57' 19.918" W	50.5883	109656.2521	822924.6345	1528	" "
1528-1527	S 76° 21' 29.156" W	37.5685	109647.3914	822888.1258	1527	" "
1527-1526	S 76° 14' 42.204" W	62.4966	109632.5316	822827.4214	1526	" "
1526-1525	S 76° 05' 18.606" W	50.3558	109620.4249	822778.5427	1525	" "
1525-1524	S 75° 11' 11.759" W	50.1760	109607.5963	822730.0343	1524	" "
1524-1523	S 75° 13' 11.428" W	49.9597	109594.8511	822681.7277	1523	" "



CONTINUATION - PARCEL "A"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
1523-1522	S 75° 01' 50.494" W	45.7745	109583.0274	822637.5065	1522	TO BE ESTABLISHED
1522-1521	S 74° 05' 14.065" W	262.9037	109510.9462	822384.6773	1521	" "
1521-1755	S 73° 31' 20.732" W	183.5576	109458.8820	822208.6582	1755	" "
1755-1578	N 45° 49' 28.190" W	141.2379	109557.3048	822107.3612	1578	" "
1578-1579	N 06° 25' 35.686" E	298.1627	109853.5938	822140.7346	1579	" "
1579-1758	N 06° 29' 09.013" E	225.6096	110077.7595	822166.2189	1758	" "
1758-1759	N 52° 33' 05.532" E	2194.3156	111412.0078	823908.2874	1759	" "
	DELTA=19° 08' 17.129"					
	RADIUS=6600.0000					
	ARC=2204.5499					
	CHORD=2194.3156					
	TANGENT=1112.6391					
	DEGREE=0° 52' 05"					
	EXTERNAL=93.1282					
1759-495	S 65° 45' 14.841" E	76.7573	111380.4872	823978.2741	495	" "
495-494	S 69° 29' 21.603" E	308.1311	111272.5236	824266.8718	494	" "
494-493	S 73° 52' 19.024" E	231.8190	111208.1278	824489.5672	493	" "
493-492	S 81° 20' 03.884" E	174.7882	111181.7930	824662.3601	492	" "
492-491	S 83° 56' 43.113" E	177.2587	111163.0961	824838.6300	491	" "
491-490	N 84° 52' 02.035" E	139.7574	111175.5994	824977.8270	490	" "
490-1517	N 70° 25' 31.726" E	231.1865	111253.0544	825195.6524	1517	" "



CONTINUATION - PARCEL "A"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
1517-1516	S 18° 08' 05.908" E	179.9724	111082.0219	825251.6700	1516	TO BE ESTABLISHED
1516-1515	S 76° 38' 31.862" W	15.4164	111078.4603	825236.6707	1515	" "
1515-1514	S 76° 38' 28.614" W	616.3192	110936.0616	824637.0276	1514	" "
1514-1513	S 76° 38' 30.328" W	984.2562	110708.6601	823679.4009	1513	" "
1513-1512	S 13° 21' 32.820" E	550.0025	110173.5402	823806.4810	1512	" "
1512-1511	N 76° 38' 30.010" E	984.2498	110400.9416	824764.1011	1511	" "
1511-1510	N 76° 38' 29.825" E	1062.6611	110646.4601	825798.0108	1510	" "
1510-1509	S 44° 40' 30.302" E	16.2001	110634.9401	825809.400	1509	" "
1509-1508	S 33° 27' 36.374" E	71.1880	110575.5502	825848.6508	1508	" "
1508-1802	S 28° 05' 13.836" E	585.1314	110059.3284	826124.1391	1802	" "

AREA = 70.7526 ACRES

PARCEL "B"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
			109104.2285	821390.7672	1786	TO BE ESTABLISHED
1786-1785	N 13° 34' 02.787" W	1510.0000	110572.0911	821036.5367	1785	" "
1785-1782	N 84° 57' 47.977" E	1719.0185	110723.0095	822748.9176	1782	" "
1782-1803	N 84° 57' 47.952" E	462.9000	110763.6487	823210.0308	1803	" "
	DELTA = 10° 51' 32.356"					
	RADIUS = 6600.0000'					
	ARC = 1250.8654'					
	CHORD = 1248.9941'					
	TANGENT = 627.3116'					
	DEGREE = 0° 52' 05"					
	EXTERNAL = 29.7451'					
1803-1758	S 56° 41' 27.738" W	1248.9941	110077.7595	822166.2189	1758	TO BE ESTABLISHED
1758-1579	S 06° 29' 08.990" W	225.6096	109853.5938	822140.7346	1579	" "
1579-1578	S 06° 25' 35.740" W	298.1627	109557.3048	822107.3612	1578	" "
1578-1755	S 45° 49' 28.190" E	141.2379	109458.8820	822208.6582	1755	" "
1755-1521	N 73° 31' 20.843" E	183.5576	109510.9462	822384.6773	1521	" "
1521-1804	N 74° 05' 13.538" E	27.2515	109518.4179	822410.8845	1804	" "
1804-1786	S 67° 54' 06.471" W	1100.9960	109104.2285	821390.7672	1786	" "
AREA = 37.9820 ACRES						



PARCEL "A-1"

COURSE	BEARING	DIST.	COORDINATES		POINT	REMARKS
			Y	X		
			110473.3419	823107.9111	979	2" G.I.P.
979-982	N 13° 12' 33"W	283.09'	110748.9474	823043.2225	982	" "
982-1803	N 84° 57' 48"E	167.45'	110763.6487	823210.0308	1803	" "
	DELTA = 2°50'53"					
	RADIUS = 6600.00'					
	ARC = 328.06'					
	CHORD = 328.03'					
	TANGENT = 164.06'					
	DEGREE = 0° 52' 05"					
	EXTERNAL = 2.04'					
1803-981	N 49° 50' 15"E	328.03'	110975.2125	823460.7165	981	" "
981-972	S 56° 52' 41"E	45.03'	110950.6049	823498.4327	972	" "
972-973	S 00° 05' 07"W	45.17'	110905.4305	823498.3654	973	" "
973-974	S 44° 18' 59"W	64.51'	110859.2711	823453.2945	974	" "
974-975	N 89° 54' 53"W	101.96'	110859.4231	823351.3298	975	" "
975-980	S 04° 50' 33"W	322.58'	110537.9983	823324.0996	980	" "
980-979	S 73° 20' 58"W	225.65'	110473.3419	823107.9111	979	" "

AREA = 1.94 ACRES

**METES AND BOUNDS DESCRIPTION - MOSQUITO PARCEL - PARCEL "A"
AT MOSQUITO WARD, VIEQUES ISLAND, PUERTO RICO**

All that certain piece or parcel of land named Parcel "A" situated in the Ward of Mosquito, Municipality of Vieques, Puerto Rico, comprising 70.7526 acres equivalent to 72.8491 cuerdas, bounded on the North by the "Sonda de Vieques" and lands owned by the U.S. Government; on the South by the Naval Ammunition Support Detachment (NASD) Access Road; on the East by Puerto Rico Ports Authority, and on the West by the U.S. Government; this parcel includes a portion of Parcel "A-1", which is an archeological site partially located inside the main Parcel "A", said main Parcel "A" being more particularly described as follows:

Beginning at Station PK-6, a steel nail at the south western corner of the bridge on State Road P.R. No. 200, and located near the entrance gate to the Naval Ammunition Facility Compound having Lambert Coordinates North 109,879.0853 feet, East 826,230.9288 feet, thence N30° 38' 44.596"W, 209.5033 feet to Point 1802, marking the south eastern corner and **TRUE POINT OF BEGINNING** of the hereinafter described parcel, said Point 1802, having Lambert Coordinates

North 110,059.3284 feet, East 826,124.1391 feet; thence S 63° 16' 12.039"W, 297.1663 feet to Point 1564; thence N 54° 02' 31.664"W, 33.0072 feet to Point 1563; thence N 49° 01' 46.624"W, 43.7248 feet to Point 1562; thence N 52° 29' 20.837" W, 53.3928 feet to Point 1561; thence N 59° 24' 51.873" W, 66.2033 feet to Point 1560; thence N 68° 10' 44.712"W, 76.4743 feet to Point 1559; thence N 75° 46' 14.391"W, 57.8344 feet to Point 1558; thence N 81° 42' 23.664"W, 71.3882 feet to Point 1557; thence N 84° 06' 39.823"W, 81.7894 feet to Point 1556; thence S 88° 06' 28.275"W, 71.4176 feet to Point 1555; thence S 77° 26' 06.133"W, 82.0778 feet to Point 1554, thence S 69° 17' 55.584" W, 58.3953 feet to Point 1553; thence S 69° 05' 45.253" W, 283.7225 feet to Point 1552; thence S 68° 42' 46.771" W, 45.0228 feet to Point 1551; thence S 72° 06' 11.281" W, 43.0616 feet to Point 1550; thence S 73° 37' 24.419" W, 36.6403 feet to Point 1549; thence S 76° 51' 02.226" W, 36.0393 feet to Point 1548; thence S 79° 39' 18.476" W, 36.0116 feet to Point 1547; thence S 82° 17' 55.302" W, 35.7066 feet to Point 1546; thence S 85° 50' 49.031" W, 35.6568 feet to Point 1545; thence S 88° 02' 06.138" W, 36.8380 feet to Point 1544; thence S 89° 55' 12.385" W, 87.4964 feet to Point 1543; thence S 88° 28' 47.020" W, 76.4030 feet to Point 1542; thence S 86° 56' 59.210" W, 118.8382 feet to Point 1541; thence S 85° 46' 35.498" W, 109.6642 feet to Point 1540; thence S 84° 00' 01.983" W, 89.4498 feet to Point 1539; thence



S 83° 04' 37.189" W, 164.0225 feet to Point 1538; thence
 S 83° 11' 28.863" W, 51.5289 feet to Point 1537; thence
 S 82° 34' 04.136" W, 83.0113 feet to Point 1536; thence
 S 81° 54' 43.894" W, 97.6409 feet to Point 1535; thence
 S 81° 19' 54.185" W, 110.5616 feet to Point 1534; thence
 S 80° 43' 13.585" W, 107.8173 feet to Point 1533; thence
 S 79° 46' 11.540" W, 100.3435 feet to Point 1532; thence
 S 78° 57' 05.786" W, 150.8350 feet to Point 1531; thence
 S 78° 24' 48.220" W, 250.2142 feet to Point 1530; thence
 S 77° 52' 12.442" W, 99.9278 feet to Point 1529; thence
 S 76° 57' 19.918" W, 50.5883 feet to Point 1528; thence
 S 76° 21' 29.156" W, 37.5685 feet to Point 1527; thence
 S 76° 14' 42.204" W, 62.4966 feet to Point 1526; thence
 S 76° 05' 18.606" W, 50.3558 feet to Point 1525; thence
 S 75° 11' 11.759" W, 50.1760 feet to Point 1524; thence
 S 75° 13' 11.428" W, 49.9597 feet to Point 1523; thence
 S 75° 01' 50.494" W, 45.7745 feet to Point 1522; thence
 S 74° 05' 14.065" W, 262.9037 feet to Point 1521; thence
 S 73° 31' 20.732" W, 183.5576 feet to Point 1755; marking
 the south western corner; thence
 N 45° 49' 28.190" W, 141.2379 feet to Point 1578; thence
 N 06° 25' 35.686" E 298.1627 feet to Point 1579; thence
 N 06° 29' 09.013" E, 225.6096 feet to Point 1758; thence along a circular curve of
 radius 6,600 feet from origin Point 374 located at the south east corner of existing
 Navy pier, having Lambert Coordinates North 115,911.7217 feet, East
 819,079.9776 feet, extending an arc of 2,204.5499 feet to Point 1759, this arc
 subtended by a chord from Point 1758, bearing N 52° 33' 05.532" E, 2,194.3156
 feet to Point 1759; thence
 S 65° 45' 14.841" E, 76.7573 feet to Point 495, shoreline; thence
 S 69° 29' 21.603" E, 308.1311 feet to Point 494, shoreline; thence S 73° 52'
 19.024" E, 231.8190 feet to Point 493, shoreline; thence S 81° 20' 03.884" E,
 174.7882 feet to Point 492, shoreline; thence
 S 83° 56' 43.113" E, 177.2587 feet to Point 491, shoreline; thence
 N 84° 52' 02.035" E, 139.7574 feet to Point 490, shoreline; thence
 N 70° 25' 31.726" E, 231.1865 feet to Point 1517, shoreline; thence
 S 18° 08' 05.908" E, 179.9724 feet to Point 1516; thence S 76° 38' 31.862" W,
 15.4164 feet to Point 1515, thence S 76° 38' 28.614" W, 616.3192 feet to Point
 1514, thence S 76° 38' 30.328" W, 984.2562 feet to Point 1513, thence
 S 13° 21' 32.820" E, 550.0025 feet to Point 1512, thence N 76° 38' 30.010" E,
 984.2498 feet to Point 1511, thence N 76° 38' 29.825" E, 1062.6611 feet to Point
 1510, thence S 44° 40' 30.302" E, 16.2001 feet to Point 1509, ; thence
 S 33° 27' 36.374" E, 71.1880 feet to Point 1508; thence S 28° 05' 13.836" E,
 585.1314 feet to Point 1802 the **TRUE POINT OF BEGINNING**, containing
 70.7526 acres, more or less, as shown and identified on the Commonwealth of
 Puerto Rico, Puerto Rico Ports Authority, Engineering Bureau, Survey plan
 drawing, entitled "PROPOSED LAND TO BE CONVEYED FROM THE UNITED



02/16/2000

STATES GOVERNMENT TO THE COMMONWEALTH OF PUERTO RICO FOR
RUNWAY EXPANSION PURPOSES, AT VIEQUES AIRPORT, VIEQUES,
PUERTO RICO".



PARCEL "A"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
			110059.3284	826124.1391	1802	TO BE ESTABLISHED
1802-1564	S 63° 16' 12.039" W	297.1663	109925.6670	825858.7292	1564	" "
1564-1563	N 54° 02' 31.664" W	33.0072	109945.0485	825832.0115	1563	" "
1563-1562	N 49° 01' 46.624" W	43.7248	109973.7175	825798.9972	1562	" "
1562-1561	N 52° 29' 20.837" W	53.3928	110006.2290	825756.6440	1561	" "
1561-1560	N 59° 24' 51.873" W	66.2033	110039.9149	825699.6515	1560	" "
1560-1559	N 68° 10' 44.712" W	76.4743	110068.3410	825628.6566	1559	" "
1559-1558	N 75° 46' 14.391" W	57.8344	110082.5569	825572.5966	1558	" "
1558-1557	N 81° 42' 23.664" W	71.3882	110092.8541	82501.9550	1557	" "
1557-1556	N 84° 06' 39.823" W	81.7894	110101.2457	825420.5971	1556	" "
1556-1555	S 88° 06' 28.275" W	71.4176	110098.8877	825349.2184	1555	" "
1555-1554	S 77° 26' 06.133" W	82.0778	110081.0319	825269.1064	1554	" "
1554-1553	S 69° 17' 55.584" W	58.3953	110060.3895	825214.4813	1553	" "
1553-1552	S 69° 05' 45.253" W	283.7225	109959.1559	824949.4337	1552	" "
1552-1551	S 68° 42' 46.771" W	45.0228	109942.8109	824907.4827	1551	" "
1551-1550	S 72° 06' 11.281" W	43.0616	109929.5779	824866.5048	1550	" "
1550-1549	S 73° 37' 24.419" W	36.6403	109919.2472	824831.3510	1549	" "
1549-1548	S 76° 51' 02.226" W	36.0393	109911.0486	824796.2566	1548	" "
1548-1547	S 79° 39' 18.476" W	36.0116	109904.5818	824760.8304	1547	" "
1547-1546	S 82° 17' 55.302" W	35.7066	109899.7969	824725.4459	1546	" "
1546-1545	S 85° 50' 49.031" W	35.6568	109897.2146	824689.8827	1545	" "



CONTINUATION - PARCEL "A"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
1545-1544	S 88° 02' 06.138" W	36.8380	109895.9515	824653.0664	1544	TO BE ESTABLISHED
1544-1543	S 89° 55' 12.385" W	87.4964	109895.8294	824565.5701	1543	" "
1543-1542	S 88° 28' 47.020" W	76.4030	109893.8024	824489.1940	1542	" "
1542-1541	S 86° 56' 59.210" W	118.8382	109887.4789	824370.5242	1541	" "
1541-1540	S 85° 46' 35.498" W	109.6642	109879.4025	824261.1577	1540	" "
1540-1539	S 84° 00' 01.983" W	89.4498	109870.0533	824172.1979	1539	" "
1539-1538	S 83° 04' 37.189" W	164.0225	109850.2828	824009.3713	1538	" "
1538-1537	S 83° 11' 28.863" W	51.5289	109844.1738	823958.2058	1537	" "
1537-1536	S 82° 34' 04.136" W	83.0113	109833.4361	823875.8919	1536	" "
1536-1535	S 81° 54' 43.894" W	97.6409	109819.6989	823779.2222	1535	" "
1535-1534	S 81° 19' 54.185" W	110.5616	109803.0358	823669.9235	1534	" "
1534-1533	S 80° 43' 13.585" W	107.8173	109785.6501	823563.5172	1533	" "
1533-1532	S 79° 46' 11.540" W	100.3435	109767.8289	823464.7689	1532	" "
1532-1531	S 78° 57' 05.786" W	150.8350	109738.9231	823316.7296	1531	" "
1531-1530	S 78° 24' 48.220" W	250.2142	109688.6679	823071.6142	1530	" "
1530-1529	S 77° 52' 12.442" W	99.9278	109667.6702	822973.9174	1529	" "
1529-1528	S 76° 57' 19.918" W	50.5883	109656.2521	822924.6345	1528	" "
1528-1527	S 76° 21' 29.156" W	37.5685	109647.3914	822888.1258	1527	" "
1527-1526	S 76° 14' 42.204" W	62.4966	109632.5316	822827.4214	1526	" "
1526-1525	S 76° 05' 18.606" W	50.3558	109620.4249	822778.5427	1525	" "
1525-1524	S 75° 11' 11.759" W	50.1760	109607.5963	822730.0343	1524	" "
1524-1523	S 75° 13' 11.428" W	49.9597	109594.8511	822681.7277	1523	" "



CONTINUATION - PARCEL "A"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
1523-1522	S 75° 01' 50.494" W	45.7745	109583.0274	822637.5065	1522	TO BE ESTABLISHED
1522-1521	S 74° 05' 14.065" W	262.9037	109510.9462	822384.6773	1521	" "
1521-1755	S 73° 31' 20.732" W	183.5576	109458.8820	822208.6582	1755	" "
1755-1578	N 45° 49' 28.190" W	141.2379	109557.3048	822107.3612	1578	" "
1578-1579	N 06° 25' 35.686" E	298.1627	109853.5938	822140.7346	1579	" "
1579-1758	N 06° 29' 09.013" E	225.6096	110077.7595	822166.2189	1758	" "
1758-1759	N 52° 33' 05.532" E	2194.3156	111412.0078	823908.2874	1759	" "
	DELTA=19° 08' 17.129"					
	RADIUS=6600.0000					
	ARC=2204.5499					
	CHORD=2194.3156					
	TANGENT=1112.6391					
	DEGREE=0° 52' 05"					
	EXTERNAL=93.1282					
1759-495	S 65° 45' 14.841" E	76.7573	111380.4872	823978.2741	495	" "
495-494	S 69° 29' 21.603" E	308.1311	111272.5236	824266.8718	494	" "
494-493	S 73° 52' 19.024" E	231.8190	111208.1278	824489.5672	493	" "
493-492	S 81° 20' 03.884" E	174.7882	111181.7930	824662.3601	492	" "
492-491	S 83° 56' 43.113" E	177.2587	111163.0961	824838.6300	491	" "
491-490	N 84° 52' 02.035" E	139.7574	111175.5994	824977.8270	490	" "
490-1517	N 70° 25' 31.726" E	231.1865	111253.0544	825195.6524	1517	" "



CONTINUATION - PARCEL "A"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
1517-1516	S 18° 08' 05.908" E	179.9724	111082.0219	825251.6700	1516	TO BE ESTABLISHED
1516-1515	S 76° 38' 31.862" W	15.4164	111078.4603	825236.6707	1515	" "
1515-1514	S 76° 38' 28.614" W	616.3192	110936.0616	824637.0276	1514	" "
1514-1513	S 76° 38' 30.328" W	984.2562	110708.6601	823679.4009	1513	" "
1513-1512	S 13° 21' 32.820" E	550.0025	110173.5402	823806.4810	1512	" "
1512-1511	N 76° 38' 30.010" E	984.2498	110400.9416	824764.1011	1511	" "
1511-1510	N 76° 38' 29.825" E	1062.6611	110646.4601	825798.0108	1510	" "
1510-1509	S 44° 40' 30.302" E	16.2001	110634.9401	825809.400	1509	" "
1509-1508	S 33° 27' 36.374" E	71.1880	110575.5502	825848.6508	1508	" "
1508-1802	S 28° 05' 13.836" E	585.1314	110059.3284	826124.1391	1802	" "

AREA = 70.7526 ACRES



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 Area Code (809)

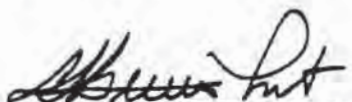
AGRIMENSORES
CONSULTORES

Metes and Bounds Description-Archaeological Site-Parcel "A-1"
At Mosquito Ward, Vieques, Island

All that certain piece or parcel of land named Parcel "A-1", situated in Ward of Mosquito, Municipality of Vieques, Puerto Rico, bounded on the north by the parcel of lands owned by the U.S. Navy; on the south by the parcel from lands owned by the U.S. Navy; on the east by the parcel from lands owned by the U.S. Navy; and on the west by the parcel from lands owned by the U.S. Navy; said Parcel "A-1" being more particularly described follows:

Beginning at the Ceiba tree, at the South East of the abandoned Guard Station on old NASD Access Road, having coordinates N 110,321.5584 feet, E 822,149.0586 feet, thence N 81°-00'-18" E, a distance of 970.79 feet to the point 979, a 2"0 galvanize steel pipe marking the South West corner and True POINT OF BEGINNING of the hereinafter described parcel, said A-1, having Lambert coordinate N 110,473.3419 feet, E 823,107.9111 feet; thence N 13°-12'-33" W, a distance of 283.09 feet; to the point 982; thence N 84°-57'-48" E, a distance of 167.45 feet to the point 1803 point of curvature of a non-tangent curve, concave to the Northwest, having a radius of 6,600.0000 feet, a central angle of 2° 50'-53", and a chord of 328.03 feet bearing N 49°-50'-15" E; thence Northeast along said curve, a distance of 328.06 feet to the point 981; thence S 56°-52'-41" E, a distance of 45.03 feet; to the point 972; thence S 00°-05'-07" W, a distance of 45.17 feet; to the point 973; thence S 44°-18'-59" W, a distance of 64.51 feet to the point 974; thence N 89°-54'-53" W, a distance of 101.96 feet to the point 975; thence S 04°-50'-33" W, a distance of 322.58 feet to the point 980; thence S 73°-20'-58" W, a distance of 225.65 feet to the point 979 the TRUE POINT OF BEGINNING; said described tract containing 84,648.06 square feet (1.94 acres), more or less. Shown and identified on the U.S. Naval Station, Roosevelt Roads, Puerto Rico Public Works Drawings, entitled "Proposed Land to be Conveyed from the United States Government to Puerto Rico Ports Authority for Runway Expansion, Vieques Airport Vieques, Puerto Rico."




 Agrim. Luis S. Berrios Montes
 Lic. # 8689



Miembro del Instituto de Agrimensores de Puerto Rico; C.I.A.P.R.

PARCEL "A-1"

COURSE	BEARING	DIST.	COORDINATES		POINT	REMARKS
			Y	X		
			110473.3419	823107.9111	979	2" G.I.P.
979-982	N 13° 12' 33"W	283.09'	110748.9474	823043.2225	982	" "
982-1803	N 84° 57' 48"E	167.45'	110763.6487	823210.0308	1803	" "
	DELTA = 2°50'53"					
	RADIUS = 6600.00'					
	ARC = 328.06'					
	CHORD = 328.03'					
	TANGENT = 164.06'					
	DEGREE = 0° 52' 05"					
	EXTERNAL = 2.04'					
1803-981	N 49° 50' 15"E	328.03'	110975.2125	823460.7165	981	" "
981-972	S 56° 52' 41"E	45.03'	110950.6049	823498.4327	972	" "
972-973	S 00° 05' 07"W	45.17'	110905.4305	823498.3654	973	" "
973-974	S 44° 18' 59"W	64.51'	110859.2711	823453.2945	974	" "
974-975	N 89° 54' 53"W	101.96'	110859.4231	823351.3298	975	" "
975-980	S 04° 50' 33"W	322.58'	110537.9983	823324.0996	980	" "
980-979	S 73° 20' 58"W	225.65'	110473.3419	823107.9111	979	" "

AREA = 1.94 ACRES

**METES AND BOUND DESCRIPTION - MOSQUITO PARCEL
PARCEL "B" (SUBJECT TO EASEMENT FOR MAINTENANCE
OF EXPLOSIVE SAFETY ARCS)
AT MOSQUITO WARD, VIEQUES ISLAND, PUERTO RICO**

All that certain piece or parcel of land named Parcel "B" situated in the Ward of Mosquito, Municipality of Vieques, Puerto Rico, comprising 37.9820 acres equivalent to 39.1074 cuerdas, bounded on the North and South by lands owned by the U.S. Government; on the East by land owned by the U.S. Government and the Commonwealth of Puerto Rico; on the West by lands owned by the U.S. Government. Said Parcel "B" being more particularly described as follows:

Beginning at Station Green Area 1, a 5/8" steel rod on the green area on NASD State Road, and located near the existing security fence of the Government, having Lambert Coordinates North 109,365.7186 feet, East 822,040.8473 feet, thence S68°05'16.409"W, 700.7005 feet to Point 1786 marking the south western corner and the **TRUE POINT OF BEGINNING** of the hereinafter described parcel, said Point 1786, having Lambert Coordinates North 109,104.2285 feet, East 821,390.7672 feet, thence N13°34'02.787"W, 1510.0000 feet to Point 1785; thence N84°57'47.977"E, 1719.0185 feet to Point 1782; thence N84° 57' 47.952"E, 462.9000 feet to Point 1803; thence along a circular curve of radius 6,600 feet from origin Point 374 located at the south east corner of existing NAVY pier, having Lambert Coordinates North 115,911.7217 feet, East 819,079.9776 feet, extending an arc of 1250.8654 feet to Point 1758, this arc subtended by a chord from point 1803, bearing S56°41'27.738"W, 1248.9941 feet to Point 1758, security fence; thence S06°29'08.990"W, 225.6096 feet to Point 1579; security fence; thence S06°25'35.740"W, 298.1627 feet to Point 1578; security fence; thence S45°49'28.190"E, 141.2379 feet to Point 1755, security fence; thence N73°31'20.843"E, 183.5576 feet to Point 1521; security fence; thence N74°05'13.538"E, 27.2515 feet to Point 1804; thence S67°54'06.471"W, 1100.9960 feet to Point 1786 the **TRUE POINT OF BEGINNING**, containing 37.9820 Acres more or less, as shown and identified on the Commonwealth of Puerto Rico, Puerto Rico Ports Authority, Engineering Bureau, Survey plan drawing entitled "PROPOSED LAND TO BE CONVEYED FROM THE UNITED STATES GOVERNMENT TO THE COMMONWEALTH OF PUERTO RICO FOR RUNWAY EXPANSION PURPOSES, AT VIEQUES AIRPORT, VIEQUES, PUERTO RICO".



PARCEL "B"

COURSE	BEARING	DISTANCE	COORDINATES		POINT	OBSERVATION
			Y	X		
			109104.2285	821390.7672	1786	TO BE ESTABLISHED
1786-1785	N 13° 34' 02.787" W	1510.0000	110572.0911	821036.5367	1785	" "
1785-1782	N 84° 57' 47.977" E	1719.0185	110723.0095	822748.9176	1782	" "
1782-1803	N 84° 57' 47.952" E	462.9000	110763.6487	823210.0308	1803	" "
	DELTA = 10° 51' 32.356"					
	RADIUS = 6600.0000'					
	ARC = 1250.8654'					
	CHORD = 1248.9941'					
	TANGENT = 627.3116'					
	DEGREE = 0° 52' 05"					
	EXTERNAL = 29.7451'					
1803-1758	S 56° 41' 27.738" W	1248.9941	110077.7595	822166.2189	1758	TO BE ESTABLISHED
1758-1579	S 06° 29' 08.990" W	225.6096	109853.5938	822140.7346	1579	" "
1579-1578	S 06° 25' 35.740" W	298.1627	109557.3048	822107.3612	1578	" "
1578-1755	S 45° 49' 28.190" E	141.2379	109458.8820	822208.6582	1755	" "
1755-1521	N 73° 31' 20.843" E	183.5576	109510.9462	822384.6773	1521	" "
1521-1804	N 74° 05' 13.538" E	27.2515	109518.4179	822410.8845	1804	" "
1804-1786	S 67° 54' 06.471" W	1100.9960	109104.2285	821390.7672	1786	" "
AREA = 37.9820 ACRES						



Appendix F

Transfer of Property to Puerto Rico Ports Authority
Map of Land to be Conveyed

Holaday, Duncan. 2000. DEED, Quitclaim. Reference No. N62470-00-RP-00104. February 28.

Appendix F

Attorney's Report on Title Transfer of Property to the Municipality of Vieques

Steed, A.M. 1988. ATTORNEY'S REPORT ON TITLE - Disposal of 25.734 acres of land, more or less, on the Island of Vieques, Puerto Rico. NAVFAC. May 11.

ATTORNEY'S REPORT ON TITLE

Disposal of 25.734 acres of land , more or less,
on the Island of Vieques, Puerto Rico.

Prepared by:
A. M. Steed, Assistant Counsel
Atlantic Division, Naval Facilities
Engineering Command
Norfolk, Virginia 23511-6287



CERTIFICATE OF TITLE REPORT

I, A. M. Steed, Assistant Counsel for the Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia, do hereby certify that I have examined all of the records affecting the title to the property hereinafter described, of the Atlantic Division, Naval Facilities Engineering Command, which is the cognizant office in charge of real estate records of the Department of the Navy pertaining to said property; that such examination included a careful and diligent search for all instruments, correspondence, and other information affecting title to the property; that based upon the examination, it is hereby certified that a fee simple estate in said lands and the improvements thereon are vested in the United States of America with no liens, encumbrances or restrictions thereon, except those contained in this report.

A. LEGAL DESCRIPTION OF EXCESS PROPERTY:

The property proposed to be declared excess is located in the ward of Santa Maria, municipality of Vieques, Puerto Rico, bounded on the north by Campana Road and lands of the Government of the United States of America; on the south by lands of the United States of America; on the east by Campana Road and lands of the United States of America and on the west by lands of the Commonwealth of Puerto Rico. Said tract is more particularly described as follows:

Beginning at Control Point E-32 (Recovered U.S. concrete monument shown on NAVFAC Drawing No. 4094798), adjacent to Km. 1.3 of public road PR 997; thence, leaving said point and running North east approximately 1,024 meters, more or less, passing thru intermediate points E-32 A thru H to a point, said point being identified as Control Point No. 5 also shown in NAVFAC Dwg. No. 4110607; thence on the latter drawing, leaving said point and running Southeast approximately 1088.75 meters, more or less, passing thru intermediate points 101 thru 109 and 109A to a point, said point being identified as point No. 4; thence, leaving said point and running Northeast approximately 481.15 meters, more or less, passing thru points No. 111 and No. 113 to a point, said point being identified as point No. 960, thence leaving said point and running Northeasterly on course $N00^{\circ}-02'-13"E$, a distance of approximately 148.97 meters to a point, said point being identified as point No. 15C known as the True Point of Beginning as shown in the City Dump Survey Drawing prepared by the Commonwealth of Puerto Rico - Department of Transportation and Public Works.

Beginning at point 15C;

thence, $N00^{\circ}-02'$ - $27"E$,	151.021 meters to Point 113A
thence, $N00^{\circ}-02'$ - $11"E$,	72.668 meters to Point 114
thence, $N00^{\circ}-02'$ - $20"W$	103.290 meters to Point 1706
thence, $N00^{\circ}-00'$ - $15"W$	295.988 meters to Point 1705
thence, $N00^{\circ}-32'$ - $32"E$	50.468 meters to Point 1704
thence, $N00^{\circ}-00'$ - $08"E$	6.999 meters to Point 1E
thence, $S50^{\circ}-14'$ - $41"E$	82.662 meters to Point 2E
thence, $S36^{\circ}-46'$ - $01"E$	91.886 meters to Point 3E
thence, $S04^{\circ}-55'$ - $53"E$	14.411 meters to Point 4E
thence, $S03^{\circ}-19'$ - $56"E$	55.570 meters to Point 5E
thence, $S10^{\circ}-12'$ - $45"E$	32.712 meters to Point 6E



thence, S30°-52' - 11"E	22.062 meters to Point 7E
thence, S42°-41' - 45"E	17.814 meters to Point 8E
thence, S47°-09' - 00"E	68.670 meters to Point 9E
thence, S46°-40' - 36"E	198.810 meters to Point 10E
thence, S40°-26' - 11"W	43.600 meters to Point 9C
thence, S43°-28' - 40"W	59.681 meters to Point 10C
thence, S82°-26' - 29"W	74.215 meters to Point 11C
thence, S79°-42' - 06"W	110.038 meters to Point 12C
thence, S56°-16' - 08"W	72.500 meters to Point 13C
thence, S28°-50' - 13"W	61.853 meters to Point 14C
thence, S09°-02' - 53"W	36.872 meters to Point 15C

to the True Point of Beginning 15C, containing 25.734 acres, more or less, and being as delineated on the Commonwealth of Puerto Rico - Department of Transportation and Public Works, Drawing, entitled "Survey Government To Be Dedicated as City Dump, Vieques, Puerto Rico", signed by Mr. Virginio Cruz Rivera, Surveyor, License No. 5782, on May 13, 1987, and attached hereto and made a part hereof as Exhibit "A".

EXCEPTING FROM THE AFOREDESCRIBED PROPERTY AND RESERVING UPON THE UNITED STATES OF AMERICA, HOWEVER, the right for the Government to use the landfill, at no cost, for disposing of non-hazardous waste.

B. ACQUISITION OF TITLE BY THE UNITED STATES:

Title to the aforescribed land, along with other property, was acquired by the United States of America by condemnation. The condemnation case was styled, United States of America v. 7936.6 acres, more or less, situated in the municipality of Vieques, Puerto Rico, Eastern Sugar Associates et al. Civil docket no. 2714 in the District Court of the United States for the District of Puerto Rico. Copies of the Declaration of Taking and the Condemnation Proceedings are attached as exhibit "B". One parcel adjoining the aforescribed property was conveyed to the Puerto Rico land administration in 1980. A copy of the quit claim deed is attached as exhibit "C". Parcel A in that quit claim deed adjoins the aforescribed property, forming its western boundary.

C. OUTSTANDING INTERESTS:

1. The estate taken in the above condemnation proceeding was the fee simple title, subject to "the right of the owners or lessees of the lands taken to retain their base production (sugar quota)". This reservation was personal and became of no force or effect upon completion of the 1942 sugar cane harvest season.

D. MISCELLANEOUS:

The aforescribed property is limited to use as a sanitary landfill for non-hazardous wastes by the Municipality of Vieques.



E. CIVIL AND CRIMINAL JURISDICTION

The Commonwealth of Puerto Rico exercises exclusive jurisdiction over the parcel. The procedure prescribed in 40 USC Section 255 was not pursued for this parcel.

Signed this 11th day of May, 1988.

Amy M. Steed
A. M. STEED





DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Room 17A-10 Parklawn Building

(301) 443-2366
Rockville MD 20857

FEB 10 1992

25,734ac

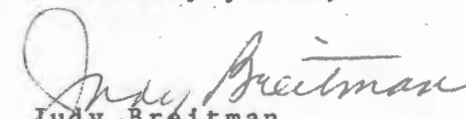
Commander, Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511-6287

Re: (P) Eastern Maneuver Area
Puerto Ferro Ward
Vieques Island, PR 02-PR-2030
Your Reference: CARIB 183

Dear Sir:

The above-referenced property has been conveyed to the Municipality of Vieques, Puerto Rico. Enclosed are copies of the executed Quitclaim Deed and Certificate of Recordation for your information and records. Copies of both documents have also been provided to the General Services Administration, Office of Real Estate Sales, Boston, Massachusetts.

Sincerely yours,


Judy Breitman

Chief, Real Property Branch
Division of Health Facilities Planning, ORM/OM

Enclosures

QUITCLAIM DEED

THIS INDENTURE, made this 17th day of June, 1991, between the United States of America, acting through the Secretary of Health and Human Services, by the Director, Division of Health Facilities Planning, Public Health Service, of the Department of Health and Human Services, under and pursuant to the power and authority provided by the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended (hereinafter called the Act), and Regulations promulgated pursuant thereto, and the Municipality of Vieques (hereinafter called the Grantee).

WITNESSETH

WHEREAS, by letter dated August 10, 1990, from the General Services Administration, certain surplus property consisting of 25.734 acres of unimproved land, more or less, hereinafter described (hereinafter called the Property), was assigned to the Department of Health and Human Services (hereinafter called the Grantor) for disposal upon the recommendation of the Grantor that the Property is needed for health purposes in accordance with the provisions of the Act; and

WHEREAS, said Grantee has made a firm offer to purchase the Property under the provisions of the Act and has made application for a public benefit allowance; and proposes to use the Property for said purposes; and

WHEREAS, the General Services Administration has notified the Grantor that no objection will be interposed to the transfer of the Property to the Grantee, and

WHEREAS, the Grantor has accepted the offer of the Grantee,

NOW, THEREFORE, the Grantor, for and in consideration of the foregoing and of the observance and performance by the Grantee of the covenants, considerations and restrictions hereinafter contained and other good and valuable consideration, the receipt of which is hereby acknowledged, has remised, released and quitclaimed and by these presents does remise, release and quitclaim to the Grantee, its successors and assigns, all right, title, interest, claim and demand, excepting and reserving such rights as may arise from the operation of the conditions subsequent hereinafter expressed, which the United States of America has in and to the Property, situate, lying, and being in the Ward of Santa Maria, Municipality of Vieques, Puerto Rico, bounded on the north by Campana Road and lands of the Government of the United States of America; on the south by lands of the United States of America; on the east by Campana Road and Lands of the United States of America and on the west by lands of the

Commonwealth of Puerto Rico, and more particularly described as follows:

Beginning at Control Point E-32 (Recovered U.S. concrete monument shown on NAVFAC Drawing No. 4094798), adjacent to Km. 1.3 of public road PR 997; thence, leaving said point and running Northeast approximately 1,024 meters, more or less, passing thru intermediate points E-32 A thru H to a point, said point being identified as Control Point No.5 also shown in NAVFAC dwg. No. 4110607; thence on the latter drawing, leaving said point and running Southeast approximately 1088.75 meters, more or less, passing through intermediate points 101 thru 109 and 109A to a point, said point being identified as point No. 4; thence, leaving said point and running Northeast approximately 481.15 meters, more or less, passing thru points No. 111 and No. 113 to a point, said point being identified as point No. 960, thence leaving said point and running Northeasterly on course N00°-02'-13"E, a distance of approximately 148.97 meters to a point, said point being identified as point No. 15C known as the True Point of Beginning as shown in the City Dump Survey Drawing prepared by the Commonwealth of Puerto Rico - Department of Transportation and Public Works.

Beginning at point 15C:

thence, N00°-02' - 27"E	151.021 meters to Point	113A
thence, N00°-02' - 11"E	72.668 meters to Point	114
thence, N00°-02' - 20"W	103.290 meters to Point	1706
thence, N00°-00' - 15"W	295.988 meters to Point	1705
thence, N00°-32' - 32"E	50.468 meters to Point	1704
thence, N00°-00' - 08"E	6.999 meters to Point	1E
thence, S50°-14' - 41"E	82.662 meters to Point	2E
thence, S36°-46' - 01"E	91.886 meters to Point	3E
thence, S04°-55' - 53"E	14.411 meters to Point	4E
thence, S03°-19' - 56"E	55.570 meters to Point	5E
thence, S10°-12' - 45"E	32.712 meters to Point	6E
thence, S30°-52' - 11"E	22.062 meters to Point	7E
thence, S42°-41' - 45"E	17.814 meters to Point	8E
thence, S47°-09' - 00"E	68.670 meters to Point	9E
thence, S46°-40' - 36"E	198.810 meters to Point	10E
thence, S40°-26' - 11"W	43.600 meters to Point	9C
thence, S43°-28' - 40"W	59.681 meters to Point	10C
thence, S82°-26' - 29"W	74.215 meters to Point	11C
thence, S79°-42' - 06"W	110.038 meters to Point	12C
thence, S56°-16' - 08"W	72.500 meters to Point	13C
thence, S28°-50' - 13"W	61.853 meters to Point	14C
thence, S09°-02' - 53"W	36.872 meters to Point	15C

to the True Point of Beginning 15C, containing 25.734 acres, more or less, and being as delineated on the Commonwealth of Puerto Rico, Department of Transportation and Public Works, Drawing, entitled "Survey Government to be Dedicated as City Dump,

Vieques, Puerto Rico", signed by Mr. Virginio Cruz Rivera, Surveyor, License No. 5782, on May 13, 1987.

EXCEPTING FROM THE AFOREDESCRIBED PROPERTY AND RESERVING UPON THE UNITED STATES OF AMERICA, HOWEVER, the right for the Government to use the landfill at no cost, for disposing of non-hazardous waste.

SUBJECT to any and all existing rights-of-way, easements for public roads, highways, public utilities, railroads, pipelines, and/or covenants, restrictions, reservations, conditions and agreements affecting the aforesaid premises, whether or not the same now appear of record.

TO HAVE AND TO HOLD the Property subject, however, to each of the following conditions subsequent, which shall be binding upon and enforceable against the Grantee, its successors and assigns, as follows:

1. That for a period of thirty (30) years from the date hereof the Property herein conveyed will be used continuously for health purposes in accordance with the proposed program and plan of the Grantee as set forth in its application dated the 8th day of March, 1988, and amended on the 23rd day of March, 1990, and for no other purpose.
2. That during the aforesaid period of thirty (30) years the Grantee will not resell, lease, mortgage, or encumber or otherwise dispose of any part of the Property or interest therein except as the Grantor or its successor in function may authorize in writing.
3. Where construction or major renovation is not required or proposed, the Property must be placed into use within twelve (12) months from the date of this deed. Where construction or major renovation is contemplated at the time of transfer, the Property must be placed into use within thirty-six (36) months from the date of this deed.
4. That one year from the date hereof and annually thereafter for the aforesaid period of thirty (30) years, unless the Grantor or its successor in function directs otherwise, the Grantee will file with the Grantor or its successor in function reports on the

operation and maintenance of the Property and will furnish, as requested, such other pertinent data evidencing continuous use of the Property for the purposes specified in the above-identified application.

5. That during the aforesaid period of thirty (30) years the Grantee will at all times be and remain a tax-supported organization or a nonprofit institution, organization, or association exempt from taxation under section 501(c)(3) of the Internal Revenue Code of 1986.
6. That, for the period during which the Property is used for the purpose for which the Federal assistance is hereby extended by the Grantor or for another purpose involving the provision of similar services or benefits, the Grantee hereby agrees that it will comply with the requirements of section 606 of the Act, Title VI of the Civil Rights Act of 1964 (P.L. 88-352), section 504 of the Rehabilitation Act of 1973 (P.L. 93-112), Title III of the Age Discrimination Act of 1975 (P.L. 94-135), and all requirements imposed by or pursuant to the Regulations of the Grantor (45 CFR Parts 12, 80, 84, and 91) issued pursuant to said Acts and now in effect, to the end that, in accordance with said Acts and Regulations, no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under the program and plan referred to in condition numbered 1 above or under any other program or activity of the Grantee, its successors or assigns, to which said Acts and Regulations apply by reason of this conveyance.

In the event of a breach of any of the conditions subsequent set forth above, whether caused by the legal or other inability of the Grantee, its successors and assigns, to perform any of the obligations herein set forth, the Grantor or its successor in function will, at its option, have an immediate right of reentry thereon, and to cause all right, title, and interest in and to the Property to revert to the United States of America, and the Grantee, its successors and assigns, shall forfeit all right, title, and interest in and to the Property and to any and all of the tenements, hereditaments, and appurtenances thereunto

belonging; PROVIDED, HOWEVER, that the failure of the Grantor or its successor in function to insist in any one or more instance upon complete performance of any of the said conditions subsequent shall not be construed as a waiver of or a relinquishment of the future performance of any of said conditions subsequent, but the obligations of the Grantee with respect to such future performance shall continue in full force and effect; PROVIDED FURTHER, that, in the event the Grantor or its successor in function fails to exercise its option to reenter the premises and to revert title thereto for any such breach of conditions numbered 1, 2, 3, 4, or 5 herein within 31 years from the date of this conveyance, conditions numbered 1, 2, 3, 4, and 5 herein, together with all rights to reenter and revert title for breach of condition, will, as of that date, terminate and be extinguished; and PROVIDED FURTHER, that the expiration of conditions numbered 1, 2, 3, 4, and 5, and the right to reenter and revert title for breach thereof, will not affect the obligation of the Grantee, its successors and assigns, with respect to condition numbered 6 herein or the right reserved to the Grantor for its successor in function to reenter and revert title for breach of condition numbered 6.

The Grantee, by acceptance of this deed, covenants for itself, its successors and assigns and every successor in interest to the property herein described, or any part thereof, that any construction or alteration on the property is prohibited unless a determination of no hazard to air navigation is issued by Federal Aviation Administration in accordance with Title 14, Code of Federal Regulations, Part 77, entitled "Objects Affecting Navigable Airspace," or under the authority of the Federal Aviation Act of 1958, as amended.

The Grantee, by acceptance of this deed, covenants and agrees for itself and its successors and assigns that it will comply with all applicable Federal, Commonwealth, municipal and local laws and rules, orders, and ordinances and regulations in the occupation, use, and operation of the property.

The Grantee, by acceptance of this deed, covenants and agrees for itself and its successors and assigns that in the event the Grantor exercises its option to revert all right, title, and interest in and to the Property to the Grantor, or the Grantee voluntarily returns title to the Property in lieu of a reverter, then the Grantee shall provide protection to and maintenance of the Property at all times until such time as the title is actually reverted or returned to and accepted by the Grantor. Such protection and maintenance shall, at a minimum, conform to the standards prescribed by the General Services Administration in FPMR 101-47.4913 (41 CFR Part 101) now in effect, a copy of which is attached to the Grantee's aforementioned application.

The Grantee, by acceptance of this deed, covenants and agrees for itself, its successors and assigns, with respect to the Property or any part thereof--which covenant shall attach to and run with the land for so long as the Property is used for a purpose for which Federal assistance is hereby extended by the Grantor or for another purpose involving the provision of similar services or benefits, and which covenant shall in any event, and without regard to technical classification or designation, legal or otherwise, be binding to the fullest extent permitted by law and equity, for the benefit of and in favor of and enforceable by the Grantor or its successor in function against the Grantee, its successors and assigns for the Property, or any part thereof--that it will comply with the requirements of section 606 of the Act, Title VII of the Civil Rights Act of 1964 (P.L. 88-352), section 504 of the Rehabilitation Act of 1973 (P.L. 93-112), Title III of the Age Discrimination Act of 1975 (P.L. 94-135), and all requirements imposed by or pursuant to the Regulations of the Grantor (45 CFR Parts 12, 80, 84, 91) issued pursuant to said Acts and now in effect, to the end that, in accordance with said Acts and Regulations, no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under the program and plan referred to in condition numbered 1 above or under any other program or activity of the Grantee, its successors or assigns, to which such Acts and Regulations apply by reason of this conveyance.

In the event title to the Property or any part thereof is reverted to the United States of America for noncompliance or is voluntarily reconveyed in lieu of reverter, the Grantee, its successors or assigns, at the option of the Grantor, or its successor in function, shall be responsible for and shall be required to reimburse the United States of America for the decreased value thereof that is not the result of reasonable wear and tear, an act of God, or alterations and conversions made by the Grantee, its successors or assigns, to adapt the Property to the health use for which the Property was transferred. The United States of America shall, in addition thereto, be reimbursed for such damage, including such costs as may be incurred in recovering title to or possession of the above-described Property, as it may sustain as a result of such noncompliance.

The Grantee may secure abrogation of the conditions subsequent numbered 1, 2, 3, 4, and 5 herein by:

- a. Obtaining the consent of the Grantor, or its successor in function, therefor; and
- b. Payment to the United States of America of 1/360th of the percentage public benefit

allowance granted of the fair market value as of the date of such requested abrogation, exclusive of the value of improvements made by the Grantee to the extent that they add to the value of that portion of the Property to be released, for each month of the period to be abrogated.

The Grantee, by acceptance of this deed, further covenants and agrees for itself, its successors and assigns, that in the event the Property or any part thereof is, at any time within the period of thirty (30) years from the date of this conveyance, sold, leased, disposed of or used for purposes other than those designated in condition numbered 1 above without the consent of the Grantor, or its successor in function, all revenues therefrom or the reasonable value, as determined by the Grantor, or its successor in function, of benefits to the Grantee, deriving directly or indirectly from such sale, lease, disposal or use, shall be considered to have been received and held in trust by the Grantee for the United States of America and shall be subject to the direction and control of the Grantor, or its successor in function; but the provisions of this paragraph shall not impair or affect the rights reserved to the Grantor under any other provision of this deed. In addition, the Grantee, its successors or assigns, shall be solely liable for all costs relating to any required clean-up resulting from any hazardous or toxic substances being placed on the property during its use by said Grantee, its successors or assigns.

IN WITNESS WHEREOF, the Grantor has caused this instrument to be executed as of the day and year first above written.

UNITED STATES OF AMERICA
Acting through the Secretary
of Health and Human Services

By: Kathleen Furey Martin
Kathleen Furey Martin
Director
Division of Health Facilities Planning
Public Health Services

ACKNOWLEDGMENT

STATE OF MARYLAND)
COUNTY OF MONTGOMERY) SS

On this 17th day of June 1991, before me the undersigned officer, personally appeared Kathleen Furey Martin, known to me to be the Director, Division of Health Facilities

Planning, Public Health Service, Department of Health and Human Services, and known to me to be the person who executed the foregoing instrument on behalf of the Secretary of Health and Human Services, for the United States of America, and acknowledged to me that she subscribed to the said instrument in the name of the Secretary of Health and Human Services and on behalf of the United States of America.

Witness my hand and official seal.

(SEAL)

My commission expires

Judy Breitman
Notary Public

December 1, 1991

ACCEPTANCE

The Municipality of Vieques, Puerto Rico hereby accepts this deed and thereby accepts and agrees to all the terms, covenants, conditions and restrictions contained therein.

By

Manuela Santiago Collazo
Manuela Santiago Collazo
Mayor, Municipality of Vieques

ACKNOWLEDGMENT

COMMONWEALTH OF PUERTO RICO)

SS

On this *1st* day of *July*, 19*91*, before me, a Notary Public in and for the City of _____, County of _____, Commonwealth of Puerto Rico, personally appeared the Honorable Manuela Santiago Collazo, known to me to be the Mayor, Municipality of Vieques, and known to me to be the person who executed the foregoing instrument on behalf of the Municipality of Vieques and acknowledged to me that she executed the same as the free act and deed of the Vieques Municipal Assembly.

Witness my hand and official seal.

(SEAL)



[Signature]
Notary Public

My commission expires

is permanent

Citadel Tierras Asociadas de Puerto Rico
Departamento de Justicia
Registro de la Propiedad
SECCION DE FAJARDO

CERTIFICACION

relativa a la finca número ^{partida} 1043 <sup>ins-
registrada</sup>

cita al folio ⁶¹ del tomo ^{bol.} 29

de Vieques

Expedida en 17 de enero de 19 92

a instancia de Municipio de Vieques

.....

ESTADO LIBRE ASOCIADO DE PUERTO RICO
DEPARTAMENTO DE JUSTICIA
REGISTRO DE LA PROPIEDAD
SECCION DE FAJARDO

Yo, Lic.(a) Aixa Calero Jiménez Registrador de la Propiedad
Sección de Fajardo, a solicitud de Municipio de V
pidiendo se libre certificación literal de los asientos de la finca número 1043

C E R T I F I C O

Que todos los asientos que surgen de la finca número 1043 son fo
e iniciadas de lo(s) folio(s) 61, 6lvto., 62 y 62 vuelto.

de la finca inscrita a los Tomo(s) 29
de Vieques

Que no se certifica en cuanto a otros extremos por no solicitarse. Y para qu
con lo solicitado, expido la presente en Fajardo, Puerto Rico, siendo la (s) 2:45
de enero de 199 2

Derechos \$ Sin Dros.

Núm. 3ro. Arancel

Comprobante número ---

Lcda. Aixa
Registrador



General Services Administration
Thomas P. O'Neill Jr. Federal Building
10 Causeway Street
Boston, MA 02222



AUG 10 1990

242A *JS*
Advise me of
further action
required by me.
Ensure filed.

no additional
action required by
Requester from
Date of award - 10 Aug 1990

8/21/90
property has been
transferred to HHS
for our files
8/21/90

Kathleen Furey Martin, Director
Division of Health Facilities Planning, ORM/OM
Department of Health & Human Services
17A-10 Parklawn Building
5600 Fishers Lane
Rockville, Maryland 20857

Dear Ms. Martin:

Your letter dated July 24, 1990 requested assignment of a 25.7-acre portion of the Eastern Maneuver Area, Puerto Ferro Ward, Vieques Island, Puerto Rico (2N-PR-453C) for conveyance to the Municipality of Vieques, Puerto Rico for the construction and operation of a sanitary landfill.

Pursuant to the authority vested in the Administrator of General Services Administration by the provisions of the Federal Property and Administrative Services Act of 1949, as amended (FPAS), and a delegation of that authority by him, I hereby assign the above-described property to the Secretary of Health and Human Services for disposal in accordance with the provisions of Section 203(k)(1) of said Act; subject, however, to the terms, conditions, reservations, and restrictions, if any, contained in the holding agency's Report of Excess Real Property.

We transfer the property subject to your compliance with the provisions of the National Environmental Policy Act of 1969, as amended; the National Historic Preservation Act of 1966, as amended; Executive Orders 11988 and 11990, subject: Floodplain Management and Protection of Wetlands; and other appropriate guidelines, regulations, laws and executive orders pertaining to the future use of this property.

No objection is interposed to the proposed conveyance of the property at 100% public benefit allowance, subject to the usual terms and conditions in transfers of property for on-site use.

Since the property is to be conveyed for the establishment of a new landfill (non-hazardous waste), the conveyance should provide for reversion if the landfill does not become operational.

8/22/90
Dem. Records (GSA)
called this date and
he was wrong about property
transferring to HHS. GSA has
this letter has claimed disposal
agency to HHS since GSA
& deal from HHS to
municipality of
conveyance
8/22/90
RS
8/22

The responsibility for custody and accountability of the property and the protection and maintenance thereof, pending disposition, will be governed by the provisions of Federal Property Management Regulation 101-47.402.

The acquisition cost of the property was \$950; its present fair market value is estimated to be \$85,000.

You have previously been furnished a copy of the Standard Form 118 covering the property. If you need additional information, please let us know.

Sincerely,

A. Vaccaro

for P. VACCARO, Director
Office of Real Estate Sales
Federal Property Resources Service

cc: Mr. R.A. Benelli, III

804 445-2373

4500 NAVSTA ROOS RDS
EMA Vieques/25ACS
242A

17 JUN 1988

Mr. Pat Vaccaro
Director, Real Estate Sales (2DR-1)
General Services Administration
10 Causeway Street
Boston, MA 02222

Dear Mr. Vaccaro:

This is in reference to GSA Control No. 4-N-PR-453-C (Report of Excess Real Property) covering 25.734 acres of unimproved land located at the northwest corner of the Eastern Maneuver Area, Vieques Island for use as a sanitary landfill.

As discussed in our previous correspondence, enclosed is an Attorney's Report on Title dated May 11, 1988. Additionally, enclosed is a mylar and three copies of the survey and perimeter description of the 25 + acre site.

If you have any questions, regarding this matter, please contact Mr. Eugene Jicha at (804) 445-2373.

Sincerely,

R.A. BONELLI, II
Head, Operations Branch B
Real Estate Division
By direction of the Commander

Blind copy to:
NAVSTA ROOS RDS
NAF VIEQUES

Blind copy to: (w/o encls)
COMNAVACTSCARIB
CINCLANTFLT
COMNAVAIRLANT
COMNAVACENGCOM

Blind Blind copy to:
Code 2011
Code 2031

R/O	CODE	INIT
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JICHA	Typed By	
11	Date Prepared	
6/15/88		
0039F/82		

ATTORNEY'S REPORT ON TITLE

Disposal of 25.734 acres of land , more or less,
on the Island of Vieques, Puerto Rico.

Prepared by:
A. M. Steed, Assistant Counsel
Atlantic Division, Naval Facilities
Engineering Command
Norfolk, Virginia 23511-6287



CERTIFICATE OF TITLE REPORT

I, A. M. Steed, Assistant Counsel for the Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia, do hereby certify that I have examined all of the records affecting the title to the property hereinafter described, of the Atlantic Division, Naval Facilities Engineering Command, which is the cognizant office in charge of real estate records of the Department of the Navy pertaining to said property; that such examination included a careful and diligent search for all instruments, correspondence, and other information affecting title to the property; that based upon the examination, it is hereby certified that a fee simple estate in said lands and the improvements thereon are vested in the United States of America with no liens, encumbrances or restrictions thereon, except those contained in this report.

A. LEGAL DESCRIPTION OF EXCESS PROPERTY:

The property proposed to be declared excess is located in the ward of Santa Maria, municipality of Vieques, Puerto Rico, bounded on the north by Campana Road and lands of the Government of the United States of America; on the south by lands of the United States of America; on the east by Campana Road and lands of the United States of America and on the west by lands of the Commonwealth of Puerto Rico. Said tract is more particularly described as follows:

Beginning at Control Point E-32 (Recovered U.S. concrete monument shown on NAVFAC Drawing No. 4094798), adjacent to Km. 1.3 of public road PR 997; thence, leaving said point and running North east approximately 1,024 meters, more or less, passing thru intermediate points E-32 A thru H to a point, said point being identified as Control Point No. 5 also shown in NAVFAC Dwg. No. 4110607; thence on the latter drawing, leaving said point and running Southeast approximately 1088.75 meters, more or less, passing thru intermediate points 101 thru 109 and 109A to a point, said point being identified as point No. 4; thence, leaving said point and running Northeast approximately 481.15 meters, more or less, passing thru points No. 111 and No. 113 to a point, said point being identified as point No. 960, thence leaving said point and running Northeasterly on course $N00^{\circ}-02'-13"E$, a distance of approximately 148.97 meters to a point, said point being identified as point No. 15C known as the True Point of Beginning as shown in the City Dump Survey Drawing prepared by the Commonwealth of Puerto Rico - Department of Transportation and Public Works.

Beginning at point 15C;

thence, $N00^{\circ}-02' - 27"E$,	151.021 meters to Point 113A
thence, $N00^{\circ}-02' - 11"E$,	72.668 meters to Point 114
thence, $N00^{\circ}-02' - 20"W$	103.290 meters to Point 1706
thence, $N00^{\circ}-00' - 15"W$	295.988 meters to Point 1705
thence, $N00^{\circ}-32' - 32"E$	50.468 meters to Point 1704
thence, $N00^{\circ}-00' - 08"E$	6.999 meters to Point 1E
thence, $S50^{\circ}-14' - 41"E$	82.662 meters to Point 2E
thence, $S36^{\circ}-46' - 01"E$	91.886 meters to Point 3E
thence, $S04^{\circ}-55' - 53"E$	14.411 meters to Point 4E
thence, $S03^{\circ}-19' - 56"E$	55.570 meters to Point 5E
thence, $S10^{\circ}-12' - 45"E$	32.712 meters to Point 6E



thence, S30°-52' - 11"E	22.062 meters to Point 7E
thence, S42°-41' - 45"E	17.814 meters to Point 8E
thence, S47°-09' - 00"E	68.670 meters to Point 9E
thence, S46°-40' - 36"E	198.810 meters to Point 10E
thence, S40°-26' - 11"W	43.600 meters to Point 9C
thence, S43°-28' - 40"W	59.681 meters to Point 10C
thence, S82°-26' - 29"W	74.215 meters to Point 11C
thence, S79°-42' - 06"W	110.038 meters to Point 12C
thence, S56°-16' - 08"W	72.500 meters to Point 13C
thence, S28°-50' - 13"W	61.853 meters to Point 14C
thence, S09°-02' - 53"W	36.872 meters to Point 15C

to the True Point of Beginning 15C, containing 25.734 acres, more or less, and being as delineated on the Commonwealth of Puerto Rico - Department of Transportation and Public Works, Drawing, entitled "Survey Government To Be Dedicated as City Dump, Vieques, Puerto Rico", signed by Mr. Virginio Cruz Rivera, Surveyor, License No. 5782, on May 13, 1987, and attached hereto and made a part hereof as Exhibit "A".

EXCEPTING FROM THE AFOREDESCRIBED PROPERTY AND RESERVING UPON THE UNITED STATES OF AMERICA, HOWEVER, the right for the Government to use the landfill, at no cost, for disposing of non-hazardous waste.

B. ACQUISITION OF TITLE BY THE UNITED STATES:

Title to the aforescribed land, along with other property, was acquired by the United States of America by condemnation. The condemnation case was styled, United States of America v. 7936.6 acres, more or less, situated in the municipality of Vieques, Puerto Rico, Eastern Sugar Associates et al. Civil docket no. 2714 in the District Court of the United States for the District of Puerto Rico. Copies of the Declaration of Taking and the Condemnation Proceedings are attached as exhibit "B". One parcel adjoining the aforescribed property was conveyed to the Puerto Rico land administration in 1980. A copy of the quit claim deed is attached as exhibit "C". Parcel A in that quit claim deed adjoins the aforescribed property, forming its western boundary.

C. OUTSTANDING INTERESTS:

1. The estate taken in the above condemnation proceeding was the fee simple title, subject to "the right of the owners or lessees of the lands taken to retain their base production (sugar quota)". This reservation was personal and became of no force or effect upon completion of the 1942 sugar cane harvest season.

D. MISCELLANEOUS:

The aforescribed property is limited to use as a sanitary landfill for non-hazardous wastes by the Municipality of Vieques.



E. CIVIL AND CRIMINAL JURISDICTION

The Commonwealth of Puerto Rico exercises exclusive jurisdiction over the parcel. The procedure prescribed in 40 USC Section 255 was not pursued for this parcel.

Signed this 11th day of May, 1988.

Amy M. Steed

A. M. STEED





DEPARTMENT OF THE NAVY
OFFICE OF THE GENERAL COUNSEL
COUNSEL FOR THE
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

444-9507
09CD:AMS:ec:4035c
5800
13 May 1988

MEMORANDUM FOR CODE 24

SUBJ: VIEQUES ISLAND, PUERTO RICO, DISPOSAL OF APPROXIMATELY 25 ACRES OF UNIMPROVED LAND; ATTORNEY'S REPORT ON TITLE

Ref: (a) Code 24 Memo 4500 EMA VIEQUES dtd 23 Mar 88

Encl: (1) Attorney's Report on Title (5 copies)
(2) Code 24 Maps Related to This Parcel

1. As requested by reference (a), an Attorney's Report on Title has been prepared on subject property and is forwarded as enclosure (1). Enclosure (2) is forwarded for your files.
2. Please note that the metes and bounds description on Sketch No. 1162 need to be checked carefully. Several copies exist which have wrong bearings for some points.
3. LO-C6 expired on 28 Feb 88 and, according to your records, has not yet been renewed. It was a grazing lease under contract No. N62470-83-RP-00253. When this contract is renewed, the map which excludes the dump parcel needs to be adjusted. It excludes the wrong area, based on an earlier incorrect property description.

Amy M. Steed

A. M. STEED
Assistant Counsel

Copy to:
09C
09CD
09CS

ATTORNEY'S REPORT ON TITLE

Disposal of 25.734 acres of land , more or less,
on the Island of Vieques, Puerto Rico.

Prepared by:
A. M. Steed, Assistant Counsel
Atlantic Division, Naval Facilities
Engineering Command
Norfolk, Virginia 23511-6287

CERTIFICATE OF TITLE REPORT

I, A. M. Steed, Assistant Counsel for the Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia, do hereby certify that I have examined all of the records affecting the title to the property hereinafter described, of the Atlantic Division, Naval Facilities Engineering Command, which is the cognizant office in charge of real estate records of the Department of the Navy pertaining to said property; that such examination included a careful and diligent search for all instruments, correspondence, and other information affecting title to the property; that based upon the examination, it is hereby certified that a fee simple estate in said lands and the improvements thereon are vested in the United States of America with no liens, encumbrances or restrictions thereon, except those contained in this report.

A. LEGAL DESCRIPTION OF EXCESS PROPERTY:

The property proposed to be declared excess is located in the ward of Santa Maria, municipality of Vieques, Puerto Rico, bounded on the north by Campana Road and lands of the Government of the United States of America; on the south by lands of the United States of America; on the east by Campana Road and lands of the United States of America and on the west by lands of the Commonwealth of Puerto Rico. Said tract is more particularly described as follows:

Beginning at Control Point E-32 (Recovered U.S. concrete monument shown on NAVFAC Drawing No. 4094798), adjacent to Km. 1.3 of public road PR 997; thence, leaving said point and running North east approximately 1,024 meters, more or less, passing thru intermediate points E-32 A thru H to a point, said point being identified as Control Point No. 5 also shown in NAVFAC Dwg. No. 4110607; thence on the latter drawing, leaving said point and running Southeast approximately 1088.75 meters, more or less, passing thru intermediate points 101 thru 109 and 109A to a point, said point being identified as point No. 4; thence, leaving said point and running Northeast approximately 481.15 meters, more or less, passing thru points No. 111 and No. 113 to a point, said point being identified as point No. 960, thence leaving said point and running Northeasterly on course $N00^{\circ}-02'-13"E$, a distance of approximately 148.97 meters to a point, said point being identified as point No. 15C known as the True Point of Beginning as shown in the City Dump Survey Drawing prepared by the Commonwealth of Puerto Rico - Department of Transportation and Public Works.

Beginning at point 15C;

thence, $N00^{\circ}-02' - 27"E$,	151.021 meters to Point 113A
thence, $N00^{\circ}-02' - 11"E$,	72.668 meters to Point 114
thence, $N00^{\circ}-02' - 20"W$	103.290 meters to Point 1706
thence, $N00^{\circ}-00' - 15"W$	295.988 meters to Point 1705
thence, $N00^{\circ}-32' - 32"E$	50.468 meters to Point 1704
thence, $N00^{\circ}-00' - 08"E$	6.999 meters to Point 1E
thence, $S50^{\circ}-14' - 41"E$	82.662 meters to Point 2E
thence, $S36^{\circ}-46' - 01"E$	91.886 meters to Point 3E
thence, $S04^{\circ}-55' - 53"E$	14.411 meters to Point 4E
thence, $S03^{\circ}-19' - 56"E$	55.570 meters to Point 5E
thence, $S10^{\circ}-12' - 45"E$	32.712 meters to Point 6E

thence, S30°-52' - 11"E	22.062 meters to Point 7E
thence, S42°-41' - 45"E	17.814 meters to Point 8E
thence, S47°-09' - 00"E	68.670 meters to Point 9E
thence, S46°-40' - 36"E	198.810 meters to Point 10E
thence, S40°-26' - 11"W	43.600 meters to Point 9C
thence, S43°-28' - 40"W	59.681 meters to Point 10C
thence, S82°-26' - 29"W	74.215 meters to Point 11C
thence, S79°-42' - 06"W	110.038 meters to Point 12C
thence, S56°-16' - 08"W	72.500 meters to Point 13C
thence, S28°-50' - 13"W	61.853 meters to Point 14C
thence, S09°-02' - 53"W	36.872 meters to Point 15C

to the True Point of Beginning 15C, containing 25.734 acres, more or less, and being as delineated on the Commonwealth of Puerto Rico - Department of Transportation and Public Works, Drawing, entitled "Survey Government To Be Dedicated as City Dump, Vieques, Puerto Rico", signed by Mr. Virginio Cruz Rivera, Surveyor, License No. 5782, on May 13, 1987, and attached hereto and made a part hereof as Exhibit "A".

EXCEPTING FROM THE AFOREDESCRIBED PROPERTY AND RESERVING UPON THE UNITED STATES OF AMERICA, HOWEVER, the right for the Government to use the landfill, at no cost, for disposing of non-hazardous waste.

B. ACQUISITION OF TITLE BY THE UNITED STATES:

Title to the aforescribed land, along with other property, was acquired by the United States of America by condemnation. The condemnation case was styled, United States of America v. 7936.6 acres, more or less, situated in the municipality of Vieques, Puerto Rico, Eastern Sugar Associates et al. Civil docket no. 2714 in the District Court of the United States for the District of Puerto Rico. Copies of the Declaration of Taking and the Condemnation Proceedings are attached as exhibit "B". One parcel adjoining the aforescribed property was conveyed to the Puerto Rico land administration in 1980. A copy of the quit claim deed is attached as exhibit "C". Parcel A in that quit claim deed adjoins the aforescribed property, forming its western boundary.

C. OUTSTANDING INTERESTS:

1. The estate taken in the above condemnation proceeding was the fee simple title, subject to "the right of the owners or lessees of the lands taken to retain their base production (sugar quota)". This reservation was personal and became of no force or effect upon completion of the 1942 sugar cane harvest season.

D. MISCELLANEOUS:

The aforescribed property is limited to use as a sanitary landfill for non-hazardous wastes by the Municipality of Vieques.

E. CIVIL AND CRIMINAL JURISDICTION

The Commonwealth of Puerto Rico exercises exclusive jurisdiction over the parcel. The procedure prescribed in 40 USC Section 255 was not pursued for this parcel.

Signed this 11th day of May, 1988.

Amy M. Steed

A. M. STEED



DEPARTMENT OF THE NAVY

U.S. NAVAL STATION
FPO MIAMI 34051-3001

11011
Ser 18TM-3/0809
3 Mar 1988

From: Commanding Officer, U.S. Naval Station, Roosevelt Roads
To: Commander, Atlantic Division, Naval Facilities
Engineering Command (Code 242B), Norfolk, VA 23511

Subj: EXCESS LAND FOR VIEQUES LANDFILL

Ref: (a) Phoncon LANTNAVFACENGCOM (Messrs. E. Jicha and Knapp)/
NAVSTA ROOS RDS (Messrs. C. Nieves and R. Acevedo) of
25 Feb 88
(b) Mtg LANTNAVFACENGCOM (Mr. E. Jicha)/NAVSTA ROOS RDS
(Mr. R. Acevedo) of 25 Feb 88

Encl: (1) Survey Drawing (reproducible) (Rev)
(2) Legal Description (Metes and Bounds) of area to be
excessed (Rev)

1. Per references (a) and (b), enclosures (1) and (2) are
forwarded.

2. Our point of contact is Mr. Cesareo C. Nieves, Realty
Specialist, at A/V 831-3048/4156/4238 or commercial (809)
865-2000, extensions 3048/4156/4238.

W. L. Nelson
W. L. NELSON
By direction

Copy to:
COMNAVAIRLANT (Code 61)
CINCLANTFLT (N4422)
COMNAVACTSCARIB (Code 008)

METES AND BOUNDS DESCRIPTION
SANTA MARIA TRACT, VIEQUES PUERTO RICO
TO BE DEDICATED AS CITY DUMP

Beginning at Control Point E-32 (Recovered U.S. concrete monument shown on NAVFAC Drawing No. 4094798), adjacent to Km. 1.3 of public road PR 997; thence, leaving said point and running North east approximately 1,024 meters, more or less, passing thru intermediate points E-32 A thru H to a point, said point being identified as Control Point No. 5 also shown in NAVFAC Dwg. No. 4110607; thence on the latter drawing, leaving said point and running Southeast approximately 1088.75 meters, more or less, passing thru intermediate points 101 thru 109 and 109A to a point, said point being identified as point No. 4; thence, leaving said point and running Northeast approximately 481.15 meters, more or less, passing thru points No. 111 and No. 113 to a point, said point being identified as point No. 960, thence, leaving said point and running Northeasterly on course N00-02'-13"E, a distance of approximately 148.97 meters to a point, said point being identified as point No. 15C known as the True Point of Beginning as shown in the City Dump Survey Drawing prepared by the Commonwealth of Puerto Rico - Department of Transportation and Public Works.

The tract of land located in the ward of Santa Maria, Municipality of Vieques, Puerto Rico, bounded on the north by Campana Road and lands of the government of the United States of America; on the south by lands of the United States of America; on the east by Campana Road and lands of the United States of America, and on the west by lands of the Commonwealth of Puerto Rico.

Said tract is more particularly described, by metes and bounds as follows:

Beginning at point 15C;

thence, N00 -02' - 27"E,	151.021 meters to Point 113A
thence, N00 -02 - 11"E,	72.668 meters to Point 114
thence, N00 -23' - 20"W,	103.290 meters to Point 1706
thence, N00 -00' - 15"W,	295.988 meters to Point 1705
thence, N00 -32' - 32"E,	50.468 meters to Point 1704
thence, N00 -00' - 08"E,	6.999 meters to Point 1E
thence, S50 -14' - 41"E,	82.662 meters to Point 2E
thence, S36 -46' - 01"E,	91.886 meters to Point 3E
thence, S04 -55' - 53"E,	14.411 meters to Point 4E
thence, S03 -19' - 56"E,	55.570 meters to Point 5E
thence, S10 -12' - 45"E,	32.712 meters to Point 6E
thence, S30 -52" - 11"E,	22.062 meters to Point 7E
thence, S42 -41' - 45"E,	17.814 meters to Point 8E

thence, S47 -09' - 00"E,	68.670 meters to Point 9E
thence, S46 -40' - 36"E,	198.810 meters to Point 10E
thence, S40 -26' - 11"W,	43.600 meters to Point 9C
thence, S43 -28' - 40"W,	59.681 meters to Point 10C
thence, S82 -26' - 29"W,	74.215 meters to Point 11C
thence, S79 -42' - 06"W,	110.038 meters to Point 12C
thence, S56 -16' - 08"W,	72.500 meters to Point 13C
thence, S28 -50' - 13"W,	61.853 meters to Point 14C
thence, S09 -02' - 53"W,	36.872 meters

to the True Point of Beginning 15C, containing 25.734 acres, more or less, and being as delineated on the Commonwealth of Puerto Rico - Department of Transportation and Public Works, Drawing, entitled "Survey Government To Be Dedicated As City Dump, Vieques, Puerto Rico", signed by Mr. Virginio Cruz Rivera, Surveyor, License No. 5782, on May 13, 1987, and attached hereto and made a part hereof as Exhibit "A".

*Note: Bearings are referred to Magnetic North.

445-2373

4500 EMA
VIEQUES

23 MAR 1988

MEMORANDUM FOR CODE 09C

Subj: VIEQUES ISLAND, PUERTO RICO, DISPOSAL OF APPROXIMATELY 25 ACRES OF
UNIMPROVED LAND; ATTORNEY'S REPORT ON TITLE

Encl: (1) Real Estate Summary Map NAVFACENGCOM DNG No. 4141734
(2) Title Report of 16 Feb 68
(3) Condemnation File for Eastern Sugar Association
(4) Survey Government to be Dedicated as City Dump, Vieques, Puerto
Rico Sketch #1162

1. Subject property has been determined to be excess to Navy requirements and screening within the Department of the Navy has been waived. The property has been reported to GSA for disposal, and it is requested that an Attorney's Report on Title be provided.

2. The Report of Excess required that a declaration be made to the recipient of the excess property that the approximately 25 acre tract be limited to use of the property as a sanitary landfill for non-hazardous wastes by the Municipality of Vieques. The Navy and other operating forces further reserve the right to use, at no cost, the landfill for disposing of non-hazardous wastes.

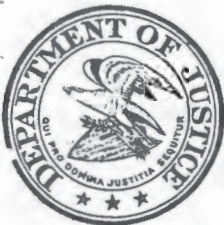
3. Enclosures (1-4) are provided for your ready reference.

4. The Job Order No. is 12EB02. Point of contact is Mr. Eugene Jicha, extension 5-2373.

J. EMERY NICHOLS
Director, Real Estate Division
Real Estate Contracting Officer

Blind copy to:
COMNAVACTSCARIEB
NAVSTA ROOSE/ELT RDS
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Office of the Attorney General

Washington, D.C.

April 21, 1948

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RECEIVED
NAVY DEPARTMENT
EXOS-ROUTING SECTION

Honorable John L. Sullivan
Secretary of the Navy
Washington, D. C.

My dear Mr. Secretary:

I have examined the title evidence and transcript of record in the condemnation proceeding entitled United States of America v. 7,936.6 Acres of land, more or less, situate in the Municipality of Vieques, Puerto Rico; Eastern Sugar Associates, et al., Civil No. 2714, in connection with the establishment of Fleet Operating Facilities and Marine Corps Operating Area, Vieques, Roosevelt Road, Puerto Rico.

The title report, prepared by Walter L. Newsom, Jr., Special Assistant to the Attorney General, is dated May 8, 1942, and is in satisfactory form.

I find that the condemnation proceeding has been regularly conducted, and that the fee-simple title to the land has vested in the United States of America, as stated in the opinion of this Department dated July 9, 1942.

I further find that on December 29, 1942, the court entered a judgment in the case in the amount of \$361,500.00. The sum of \$235,460.00 was deposited into the registry of the court as estimated compensation for the land at the time of the filing of the declaration of taking. The deficiency in the amount of \$126,041.00, with interest thereon in the amount of \$18,585.00, or a total sum of \$144,626.00, was deposited into the registry of the court on December 4, 1944.

From the above judgment, entered December 29, 1942, the landowners perfected an appeal to the Circuit Court of Appeals, and on June 26, 1944, the Circuit Court of Appeals for the First Circuit handed down an opinion reversing the opinion of the trial court and remanded the case for a re-trial. On January 24, 1947, upon re-trial of the case, the trial court entered a judgment in the amount of \$380,000.00 in favor of the condemnees. No appeal was taken from the above judgment by either the landowners or the Government, and the additional deficiency of \$18,500.00, with interest thereon, as set out in said judgment, being the total sum of \$23,745.88, was deposited into the registry of the court on

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March 20, 1947. The above-mentioned judgment is now satisfied and the acquisition of the 7,936.6 acres, which constitute all of the lands in the proceeding, is completed.

Enclosed are the title report, the certificate of the clerk of the court, dated December 4, 1944, for the sum of \$144,626.00, the certificate of the clerk of the court, dated March 20, 1947, for the sum of \$23,745.88, the certificate of the clerk of the court, dated April 28, 1947, for \$538.72, the certificate of the clerk of the court, dated June 4, 1947, for the sum of \$20.69.

All Encls. Rec'd.
EX-03 Routing Section

There are also enclosed certified copies of the motion, dated March 22, 1948 and the order decreeing satisfaction of the judgment, entered on January 24, 1947.

Sincerely yours,

Tom C. Clark

Attorney General

SO4 22 65



Office of the Attorney General

Washington, D. C. MAY - 7 43 PM

May 4, 1943

Honorable Frank Knox
Secretary of the Navy
Washington, D. C.

S05

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RECEIVED
NAVY DEPARTMENT
SECY'S OFFICE - RECORD DIV

My dear Mr. Secretary:

I have examined the partial transcript of record in the condemnation proceeding entitled United States v. 7926.6 acres of land, more or less, situated in the Municipality of Vieques, Puerto Rico, Eastern Sugar Associates, et al., No. 2714 at Law, in the United States District Court for Puerto Rico, instituted in accordance with the request of the Navy Department, pertaining to the acquisition of the above land designated as Tracts A and B of the fleet operating facilities project.

I find that the condemnation proceeding has been regularly conducted and that the title to the land is vested in the United States, including all improvements thereon and all appurtenances thereunto belonging and any and all rights, claims, title and interest in and to the above mentioned land, subject to the right of the owners or lessees of the lands taken to retain their base production (commonly called "sugar quota") under existing law on land which they may now own or hereafter acquire in lieu of the lands taken, as stated in the preliminary opinion of this Department dated July 9, 1942, and that on December 29, 1942, the court entered a judgment determining the just compensation for the land to be the sum of \$361,500.00. The sum of \$235,459.00 was deposited into the registry of the court as estimated compensation for the land at the time of the filing of the declaration of taking.

The sum of \$126,041.00, with legal interest thereon from June 26, 1942 to the time same shall be deposited into the registry of the court for use of the defendant, should be deposited into the registry of the court in satisfaction of the deficiency judgment. When a check for the deficiency is received, the United States Attorney will be requested to take such appropriate action as is required by law.

Enclosed is a certified partial transcript of record.

Respectfully,

Francis Biddle
Attorney General

Filed
Settlement approved
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PRINT

File C40-2-SJ

Wet



Office of the Attorney General
Washington, D.C.

July 9, 1942

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Honorable Frank Knox
Secretary of the Navy
Washington, D. C.

My dear Mr. Secretary:

I have examined the declaration of taking and the enclosed certified copies of the petition for condemnation and judgment on the declaration of taking in the condemnation proceeding entitled United States v. 7936.6 Acres of Land in the Municipality of Vieques, Puerto Rico, and the Eastern Sugar Associates, et al., Civil No. 2714, in the United States District Court for the District of Puerto Rico, instituted in accordance with the request of your Department to acquire certain land for the establishment of Fleet Operating Facilities and Marine Corps Operating Area, Vieques, Roosevelt Roads, Puerto Rico.

From my examination of the above-mentioned documents, I am of the opinion that the condemnation proceeding has been regularly conducted and a valid title to the land, more particularly described in the judgment entered in this proceeding on June 26, 1942, vested in the United States of America on that day in fee simple, pursuant to the provisions of an Act of Congress of February 26, 1931, with the right of possession on July 6, 1942. The judgment reserves to the owners or the lessees of the land the right to retain their base production.

There are also enclosed a receipt of the Clerk of the Court for the sum of \$235,460.00 and certified copies of the motion for judgment and summons.

Respectfully,

Francis Biddle

Attorney General



TITLE REPORT

RE: SANTA MARIA GRAZING AND
MARTINEAU TRACTS, VIEQUES, P.R.
1,829 Acres of DOD EXCESS LANDS
WITHOUT IMPROVEMENTS
HOLDING AGENCY NO. CARIB-183

This report is submitted pursuant to Section 101-47,202 of the Federal Property Management Regulations.

1. DESCRIPTION OF THE EXCESS PROPERTY:

The excess property to which this report relates comprises portions of U. S. Government-owned, U. S. Navy-controlled, unimproved lands known as the Santa Maria Grazing and Martineau Tracts, situate, respectively, in Wards Puerto Ferro and Puerto Real, Municipality of Vieques, Puerto Rico. The property consists of a combined total of 1,829 acres of land, more or less, shown as Parcels "A" and "B" on Real Estate Disposal Map, Drawing No. FEC 1,041,669 attached hereto as Exhibit "A". A metes and bounds description of the boundaries of Parcel "A" (Santa Maria Grazing Area) of the boundaries of Parcel "B" (Martineau Tract) are attached as Exhibit "B".

2. DATE TITLE VESTED IN THE UNITED STATES:

The land areas comprising the excess property are tracts or portions of tracts acquired by the United States in fee simple as follows:

<u>PARCEL NO.</u>	<u>TRACT NO.</u>	<u>ACREAGE</u>	<u>METHOD & DATE OF ACQUISITION</u>
"A" (SANTA MARIA GRAZING AREA)	A	683.00-	Portion of Parcel "A" in Declaration of Taking in condemnation proceedings No. 2714 entitled "U.S. of A. Vs. 7936 - 6 acres of land in the Municipality of Vieques, and Eastern Sugar Associates, et al, defendants, filed 26 June 1942 in the U.S. District Court of P. R.
"B" (MARTI- NEAU TRACT)	1,2,3 & 6	460.65 <i>NON EXCESS</i>	Portion of Tract 1 and Tracts 2, 3 and 6 in Declaration of Taking in condemnation proceedings No. 2300 entitled "U.S. of A. Vs 10,208.85 acres of land, in Wards Mosquito, Florida, Dove, etc., Municipality of Vieques, P. R., and Juan Angel Tio, et al, defendants", filed November 12, 1941 in the U. S. District Court for Puerto Rico.

<u>PARCEL NO.</u>	<u>TRACT NO.</u>	<u>ACREAGE</u>	<u>METHOD & DATE OF ACQUISITION</u>
"B"	26 thru 58	672.58	Portions of Parcels 26 and 27 and Parcels 28 through 58 in Declaration of Taking in Condemnation Proceedings No. 2487 Civil, entitled "U.S. of A. Vs. 686.96 acres of land in Wards Florida and Puerto Real, Municipality of Vieques, P. R., Josefina Bernudez et al, defendants", filed April 6, 1942 in the U.S. District Court for Puerto Rico.
"B"	Un-numbered	12.77	Declaration of Taking in Condemnation Proceedings No. 3211 Civil, entitled "U.S. of A. vs. 12.77 acres of land in the Ward of Puerto Real, Municipality of Vieques, P. R., Eulogio Cruz Velaz, et al, defendants", filed January 5, 1943 in the U. S. District Court for Puerto Rico.

3. RESERVATIONS OR RESTRICTIONS ON TITLE:

The estate taken in the above condemnation proceedings was the fee simple title subject to, as to Civil No. 2714, "the right of the owners or lessees of the lands taken to retain their base production (sugar quota); as to Civil No. 2300, (1) "reserving to the public the right to use existing public roads traversing the land until such time as title to adjoining lands to which such roads give access are acquired by the United States", (2) "reserving a right in Juan Angel Tio to harvest and remove from the land taken the growing sugar cane and other crops belonging to him" and (3) "reserving a right in said Juan Angel Tio to use the sugar factory and other necessary facilities now on the land to process the growing sugar cane now on the land into sugar and molasses"; as to Civil No. 2487, (1) "reserving to the owners of all buildings situated on the land taken, the right to remove such buildings within such time as may be designated by the Court", and (2) "reserving to the owners thereof, the right of base production (sugar quota)"; and as to civil No. 3211, "reserving to the owners thereof the right to remove such buildings as are situated on the lands taken, within such time as may be designated by the Court".

The reservations numbered one (1) in Civil No. 2300 became extinguished upon acquisition by the United States, under Condemnation Proceedings No. 2487, of title "to adjoining lands to which existing public roads gave access". The remaining reservations under Civil No. 2300 as well as the reservations under Civil No. 2714 and Civil No. 2487 were personal and became of no force or effect upon completion of the 1942 sugar cane harvest season or removal of buildings by tenants.

No other reservation, exception, condition or restriction on the Government's title to the excess property appear from the record.

4. ACTIONS AFFECTING TITLE:

Except for encumbrances resulting from the use grant mentioned in paragraph 6 below, there is no record of any action, thing or circumstance that occurred from the date of acquisition of the property by the United States to the date of this report, which in any way affected or may have affected the right, title and interest of the United States in and to the excess real property.

5. CIVIL AND CRIMINAL JURISDICTION:

The United States exercises exclusive civil jurisdiction over 460.65 acres within Parcel "B" of the excess property (Tracts 1, 2, 3 and 6 - in Schedule B-LAND-SF 118b), pursuant to the Act of Congress approved October 9, 1940 (54 Stat. 1083). The Commonwealth of Puerto Rico exercises exclusive civil jurisdiction over Parcel "A" (Santa Maria Grazing Area), the requirements of 54 Stat. 1083 not having been pursued as regards this parcel.

6. USE GRANTS:

In the exercise of control and jurisdiction over the excess property the Department of the Navy has made outgrants for use of portions of the excess property as follows:

a. Fifty (50) year easement, forty (40) feet wide, to the Puerto Rico Water Resources Authority for the construction, maintenance and operation of an overhead electric power transmission line over 2.71 acres of land within Parcel "A" (Santa Maria Grazing Area); and

b. Fifty (50) year easement, 40 feet wide, to the Puerto Rico Water Resources Authority for the construction, maintenance and operation of an overhead electric power transmission line over 3.50 acres of land within Parcel "B" (Martineau Tract).

The above described easements were jointly granted by indenture number NOy(R) 63040 dated 12 September 1952, a copy of which is attached to this report as Exhibit "C".

7. TITLE EVIDENCE:

There are attached as Exhibit "D", the following reproductions of title documents relating to the lands covered by this report of excess:

(Tract numbers correspond to the tracts listed in Column (b) of Schedule "B"-LAND, SF 118).

<u>TRACT NO.</u>	<u>GOVT-OWNED ACREAGE</u>	<u>EXCESS ACREAGE</u>	<u>TITLE DOCUMENTS</u>
"A"	7,936.60	683.0	D/T, Petition for Cond. Judgment and Attorney General's final title opinion dtd April 21, 1948 in Civil No. 2714, forwarded with Exhibit "D" of title report under Report of Excess Carib-184.
"B"	10,208.85	460.65 (Tracts 1, 2, 3 & 6)	D/T, Petition for Cond., Judgment and Attorney General final title opinion dtd Sept. 30, 1942 in Civil No. 2300, forwarded with Exhibit "D" of title report under Report of Excess CARIB-184.
"C"	686.95	672.58 (Tracts 26 thru 58)	a) Declaration of Taking, Petition for Cond. and Judgment in Cond. Proc. No. 2487 Civil. b) Attorney General Final Title Opinion dtd June 17, 1944.
"D"	12.77	12.77	a) Declaration of Taking, Petition for Cond. and Judgment in Cond. Proc. No. 3211 Civil. b) Attorney General Final Title Opinion dtd April 24, 1943.

This report is dated: 16 FEB 1968

Prepared by: *Carlos F. Pesquera*
 CARLOS F. PESQUERA
 Real Estate DIVISION Director
 Caribbean Division, Naval Facilities
 Engineering Command
 Department of the Navy

METES & BOUNDS DESCRIPTION

SANTA MARIA GRAZING AREA, VIEQUES, PUERTO RICO
PARCEL "A" OF REPORT OF EXCESS NO. CARIB-183

Reference: Drawing No. FEC 1,041,669 entitled "VIEQUES ISLAND - REAL ESTATE DISPOSAL MAP"

All that tract of land situate in the Ward of Puerto Ferro, Municipality of Vieques, Puerto Rico, bounded on the north by other lands of the United States of America and by the waters of the Atlantic Ocean; on the east and south by other lands of the United States of America; and on the west by State Road 997, lands of private owners and of the Municipality of Vieques.

The tract is more particularly described, by metes and bounds as follows:

"Beginning at Point E-36 on the easterly line of Puerto Ferro Road;

thence, N 2°-01'E, 299.89 meters to Point E-37;
thence, N63°-04'W, 7.57 meters to Point E-38;
thence, N 2°-51'E, 77.64 meters to Point E-39;
thence, N 1°-34'E, 118.65 meters to Point E-40;
thence, N 0°-28'E, 226.00 meters to Point E-41;
thence, N 1°-00'E, 99.13 meters to Point E-42;
thence, N 4°-53'E, 38.48 meters to Point E-43;
thence, N51°-01'E, 8.44 meters to Point E-44;
thence, N35°-03'E, 114.29 meters to Point E-45;
thence, N26°-38'W, 45.74 meters to Point E-46;
thence, N56°-07'W, 48.10 meters to Point E-47;
thence, N72°-08'W, 33.48 meters to Point E-48;
thence, N51°-47'W, 47.26 meters to Point E-49;
thence, N40°-29'W, 29.17 meters to Point E-50;
thence, S84°-21'W, 26.08 meters to Point E-51;

thence, northerly, easterly and southerly around the edge of unimproved and uncultivated Navy lands and southerly following the course of an intermittent stream 1341 meters, more or less, to a point near the southwesterly corner of the area;

thence, S 75°E, 213 meters, more or less, to a point at the intersection of the northern side of an unimproved road traversing the U. S. Naval Maneuver Area, Vieques, and the centerline of the Santa Maria Creek;

thence, northerly, 1524 meters, more or less, following the centerline of said creek to a point on the ordinary high tide line of the Atlantic Ocean;

thence, easterly along said high tide line 1000 meters, more or less, to a point due north from a curve on Campana Road; thence, Due South to the south side of Campana Road; thence, southeasterly along the southwesterly side of Campana Road 700 meters, more or less, to a point;

thence, Due South, 1400 meters, more or less, to a point on an unimproved road traversing the Naval Maneuver Area;

thence, northwesterly along said road 1200 meters, more or less, to a point;

thence, S 37°W 1000 meters, more or less, to a point E-32 on the easterly line of State Road 997;
thence, along the easterly line of said road, N 19°39'W, 85.00 meters to Point E-33
thence, along the easterly line of said road, N39°-28'W, 163.14 meters to Point E-34
thence, along the easterly line of said road, N 80°-17'W, 187.67 meters to Point E-35
thence, along the easterly line of said road, N 76° 46'W, 35.72 meters to Point E-36,
the point of beginning.

Distances are expressed in meters. Bearings are referred to the Magnetic North, with a declination of 6°25' West of North.

The area enclosed within the above described perimeter is 683 acres, more or less.

METES & BOUNDS DESCRIPTION

MARTINEAU TRACT, VIEQUES, P. R.
PARCEL "B" OF REPORT OF EXCESS NO. CARIB - 183

Reference: Drawing No. FEC 1,041,669, entitled "VIEQUES ISLAND - REAL ESTATE DISPOSAL MAP"

All that tract of land situate in the Wards of Florida and Puerto Real, Municipality of Vieques, Puerto Rico, bounded on the north by lands of the Puerto Rico Ports Authority (Vieques Airport Site) and the waters of the Atlantic Ocean, on the east by lands formerly of Emilia Mourraille, Esteban Diaz, Eleutherio Ortiz, Eastern Sugar Associates and Pedro Felix, on the south by lands formerly of the Estate of Juana Marin, Eleuterio Ortiz, Pedro Felix, Jovito Gonzalez, the Estate of Monserrate Ortiz, Evaristo Morales, Antonio Rivera and Antonio Torres, and on the west by lands formerly of Antonio Rivera and Antonio Torres, Merigilda Torres and other lands of the United States of America.

The tract is more particularly described by metes and bounds, as follows:

"Beginning at Point 29-1, said point being a wooden hub in the ordinary high tide line of the Atlantic Ocean at the north-easterly corner of the tract;

thence, S 03°-11'-40"E, 5341.02 feet to Point 30-3;
thence, S 88°-41'-06"E, 1004.83 feet to Point 30-4;
thence, S 18°-43'-20"W, 1764.04 feet to Point 185-1;
thence, N 86°-15'-54"W, 652.87 feet to Point 30-5;
thence, N 86°-15'-54"W, 380.25 feet to Point 30-6;
thence, N 00°-56'-56"E, 207.69 feet to Point 30-7;
thence, N 87°-47'-36"W, 1501.92 feet to Point 30-8;
thence, S 02°-15'-49"E, 86.08 feet to Point 31-1;
thence, S 04°-41'-39"W, 750.79 feet to Point 31-4;
thence, S 88°-17'-33"E, 69.40 feet to Point 32-1;
thence, S 02°-10'-41"W, 707.54 feet to Point 32-2;
thence, S 03°-25'-28"E, 680.80 feet to Point 35-3;
thence, N 86°-10'-09"W, 651.08 feet to Point 35-4;
thence, S 01°-29'-16"W, 435.94 feet to Point 36-3;
thence, N 88°-43'-15"W, 623.55 feet to Point 36-4;
thence, Southerly, 420+ feet to Point 9b;
thence, N 87°-08' W, 1689.09 feet to Point 8b;
thence, S 11°-59' W, 330.90 feet to Point 7b;
thence, N 85°-15' W, 143.47 feet to Point 6b;
thence, Northerly, 450+ feet to Point 37-10;
which is a concrete post;
thence, N 87°-16'-54"W, 454.61 feet to Point 37-11;
thence, N 88°-54'-38"W, 289.27 feet to Point 37-12;

thence, N 88°-40'-28"W, 179.40 feet to Point 37-13;
 thence, N 00°-53'-38"E, 538.26 feet to Point 37-14;
 thence, N 88°-05'-29"W, 227.59 feet to Point 40-7;
 thence, N 06°-27' E, 208.84 feet to Point 40-6;
 thence, N 18°-20'-47"W, 135.21 feet to Point 52-4;
 thence, N 88°-31'-03"W, 732.80 feet to Point 52-5;
 which is an iron railroad rail;
 thence, N 00°-52'-38"E, 361.86 feet to Point 52-6,
 which is an iron railroad rail
 thence, N 84°-58'-58"W, 199.75 feet to Point 54-7,
 which is an iron railroad rail
 thence, N 00°-47'-13"W, 322.55 feet to Point 54-1;
 thence, N 03°-54" E, 4020 feet to Point 85;
 which is a point on the south boundary of the
 Vieques Airport Site with Coordinates Y=110,002.57,
 X = 826,154.42; thence along said boundary
 S 30°-19'-14"E, 68.14 feet to Point 84;
 thence, S 48°-19'-59"E, 29.92 feet to Point 83;
 thence, S 66°-05'-34"E, 47.45 feet to Point 82;
 thence, S 62°-48'-30"E, 294.19 feet to Point 81;
 thence, S 67°-44'-03"E, 66.88 feet to Point 80;
 thence, S 73°-08'-45"E, 51.01 feet to Point 79;
 thence, S 81°-18'-17"E, 63.39 feet to Point 78;
 thence, S 84°-38'-41"E, 40.29 feet to Point 77;
 thence, N 84°-35'-45"E, 42.79 feet to Point 76;
 thence, N 72°-36'-51"E, 263.49 feet to Point 75;
 thence, N 66°-16'-03"E, 41.00 feet to Point 74;
 thence, N 66°-27'-04"E, 67.23 feet to Point 73;
 thence, N 56°-42'-03"E, 850.61 feet to Point 72;
 thence, N 48°-07'-46"E, 109.45 feet to Point 71;
 thence, N 38°-01'-38"E, 44.33 feet to Point 70;
 thence, N 29°-03'-29"E, 704.04 feet to Point 69;
 thence, N 28°-14'-00"E, 265.17 feet to Point 68;
 thence, N 76°-38'-30"E, 1068.37 feet to Point 101;
 thence, N 13°-21'-30"W, 858.92 feet to Point I-62;
 being a point on the ordinary high tide line of the
 Atlantic Ocean;
 thence, easterly along the ordinary high tide line
 of the Atlantic Ocean to Point 29-1, the point of
 beginning

Bearings are referred to the Lambert Projection for
 Puerto Rico.

The area enclosed within the above described perimeter
 is 1,146 acres, more or less.

IN THE DISTRICT COURT OF THE UNITED STATES FOR PUERTO RICO

United States of America,
Petitioner

v.

7936.6 acres of land, more
or less, situated in the
Municipality of Vieques,
Puerto Rico, Eastern Sugar
Associates, et al.,
Defendants

No. 2714 Civil

Condemnation Proceedings

(Filed Dec. 29/42)

S05 7 191

FINDINGS OF FACT, CONCLUSIONS OF LAW
AND JUDGMENT

The above-entitled cause having come on for trial on the 6th day of November, 1942, before this Court, and the evidence having been duly taken and heard, the Court makes and files the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

1- That on June 26, 1942, the United States of America filed herein a Petition for Condemnation and a Declaration of Taking, pursuant to the statutes in such cases made and provided, and on said date this Court made and entered its Judgment vesting title in the United States of America to the two non-contiguous parcels of land described in said Petition and Declaration of Taking, pursuant to law, and that the Acting Secretary of the Navy did contemporaneously with the filing of the said Petition and Declaration of Taking deposit the sum of TWO HUNDRED THIRTY-FIVETHOUSAND FOUR HUNDRED FIFTY-NINE DOLLARS (\$235,459.00) as the estimated compensation for the condemned property herein referred to, all of which appears with particularity in said Petition and Declaration of Taking filed in this proceeding, to which reference is hereby made.

2- That the interest herein condemned in the said lands is a fee simple absolute title to Parcels A and B described in the said Declaration of Taking and in the Petition for Condemnation filed in this proceeding, with all improvements thereon and appurtenances thereto belonging, subject, however, to the following reservation:

PARCEL A

RURAL: Parcel of land situated in the Municipality of Vieques, consisting of 6213.53 acres, more or less, equivalent to 6397.65 cuerdas, equivalent to 2514 hectares, 53 ares, and 24 centiares, bounded on the North by the Atlantic Ocean; on the East by lands of the United States acquired from Juan Angel Tió and lands of Alois A. Fix, Tomás Ramírez and Manuel Quiñones; on the South by the Caribbean Sea, and on the West by the balance of the principal estate from which this parcel is segregated, the Puerto Ferro road, land of the United States acquired through the Puerto Rico Reconstruction Administration and lands of the Succession of Legillow, Jovito González, Daniel St. Villiers, Francisco Lujan, and land of the Municipality of Vieques.

PARCEL B

RUSTICA: Radiada en el barrio Puerto Diablo de Vieques, compuesta de MIL SETECIENTAS CUATRO CUERDAS y cuatrocientas varas cuadradas, en linderos: Norte, Este y Sur, el mar y Oeste, Matías Hjardermaal y Severino Dans, antes el mismo Matías Hjardermaal."

Parcel A constituted a part of a larger tract of land from which it was taken.

The said lands condemned are described with more particularity in the Petition for Condemnation and Declaration of Taking filed herein.

5- That at the time of filing of said Petition for Condemnation and Declaration of Taking the said lands condemned belonged to defendant The Eastern Sugar Associates, a trust, in fee simple absolute, subject to a mortgage thereon in favor of defendant, The National City Bank of New York.

That on July 30, 1942 defendant The National City Bank of New York filed herein a release and discharge of said mortgage as to the said lands condemned.

6- That just compensation for said property condemned amounts to \$361,500.00 which said amount includes all damages, past, present and future depreciation, if any there might be, to the remainder of the tract from which said Parcel A of the lands condemned was taken.

CONCLUSIONS OF LAW

C.

That the damages the defendant, owner of said property, suffered amount to \$361,500.00.

D.

That defendant owner, The Eastern Sugar Associates, is entitled to a deficiency judgment herein in the amount of \$126,041.00, with legal interest from and after June 26, 1942 to the time of deposit of said amounts in the Registry of this Court for the use of said defendant.

JUDGMENT

WHEREFORE IT IS HEREBY ORDERED, ADJUDGED AND DECREED THAT:

The parcels of land hereinbefore referred to and more particularly described in the Petition for Condemnation and the Declaration of Taking filed in this action, including all improvements thereon and all appurtenances thereunto belonging, and any and all rights, claims, title, interest and estate of defendants and respondents herein and each and every person whatsoever, are hereby condemned to the public use of the United States of America for the purposes more particularly described in the Said Declaration of Taking and Petition for Condemnation, and that the fee simple title absolute to said property vested in the United States of America free and discharged of all claims and liens of every kind whatsoever;

That the amount of \$361,500.00 constitutes just compensation for said property condemned, including all damages, past, present and future depreciation, if any there might be, to the remainder of the tract from which Parcel A of the lands condemned was taken;

That defendant is entitled to the amount of \$126,041.00 as a deficiency in and in addition to the amount heretofore deposited in the registry of this Court as estimated just compensation for the property condemned, with legal interest on the amount of said deficiency from June 26, 1942 to the time the same shall be deposited in the Registry of this Court for the use of said defendant;

That the United States of America shall deposit the amount of said deficiency, with legal interest thereon, in the Registry of this Court for the use of defendant, The Eastern Sugar Associates, and

That this Court shall retain jurisdiction of this action as to all things and issues not adjudicated herein or not heretofore adjudicated for the purpose of entering such further orders as

IN THE DISTRICT COURT OF THE UNITED STATES FOR PUERTO RICO

United States of America,
Petitioner,

v.

No. 2714 Civil

7936.6 acres of land, more
or less, situated in the
Municipality of Vieques,
Puerto Rico, Eastern Sugar
Associates, et al,
Defendants

Condemnation Proceedings

(Filed June 26-1942)

PETITION FOR CONDEMNATION OF LAND

NOW COMES the United States of America by Walter L. Newsom, Jr., Special Assistant to the Attorney General, and A. Castro Fernández, Special Attorney, at the direction and under the authority of the Attorney General of the United States, pursuant to the request of the Acting Secretary of the Navy, and represents unto the Court as follows:

1. This proceeding is instituted under the authority of the following acts of Congress: Act of Congress approved March 23, 1941 (Public Law 22, 77th Congress; 55 Stat., Chap. 26); Act of March 17, 1941 (Public Law 13, 77th Congress; 55 Stat., Chap. 16); Act of August 1, 1888 (25 Stat., 357; U.S.C. title 40, sec. 257); Act of February 26, 1931 (46 Stat. 1421; U.S.C., title 40, sec. 258a), and any acts amendatory thereof or supplementary thereto.

2. The Acting Secretary of the Navy acting for and in the capacity of the Secretary of the Navy under the authority vested in him by the acts hereinabove stated has determined that, in his opinion, it is necessary and advantageous to acquire for the United States by condemnation under judicial process certain land hereinafter described, with all buildings and improvements thereon and all appurtenances thereto, for the purposes of the Acts above set forth, adequately to provide for fleet operating facilities.

3. The land sought to be condemned through this proceeding is located in the Municipality of Vieques, Puerto Rico, and consists of two parcels of land having a combined area of 7936.6 acres, more or less, with all improvements and appurtenances.

4. The estate sought to be condemned and taken in the land described in the declaration of taking, as well as hereinafter in Exhibit "1" of this Petition, is a fee simple title, subject to the following reservation:

- (1) The right of the owners or lessees of the land taken to retain their base production (commonly called "sugar quota") under existing law on land which they may now own or hereafter acquire in lieu of the land taken.

5. The description of the land herein taken, as well as the registry references and descriptions, where such properties appear recorded, are set forth in Exhibit "1" attached hereto and made a part hereof as though fully recited herein.

6. The following entities may claim some interest in the land condemned and are all the persons having or claiming any interest in the said land, as appears of record, and in so far as known to the petitioner, and are therefore joined as defendants:

Name and Address	Parcel Number	Acres	Estimated Fair Compensation
Eastern Sugar Associates, a trust executed in the State of Maryland, with offices at Caguas, Puerto Rico.	A and B	6,213.53 1,723.07	\$235,459.00

Mortgagee:

The National City Bank of
New York,
San Juan, Puerto Rico

The People of Puerto Rico, San Juan, Puerto Rico) For any and all right, title and interest in and to the lands herein taken, or appurtenances thereunto belonging.	1.00
Municipality of Vicques, Vicques, Puerto Rico		

WHEREFORE, your petitioner prays this Honorable Court:
To ascertain and determine according to law the compensation

subject to the reservation mentioned in the fourth paragraph of this Petition; and to grant such other and further relief as may be lawful and proper.

San Juan, Puerto Rico, June 26, 1942.

(s) *Walter L. Newsom, Jr.*
Walter L. Newsom, Jr.
Special Assistant to the
Attorney General

(s) *A. Castro Fernández*
A. Castro Fernández
Special Attorney

VERIFICATION

UNITED STATES OF AMERICA) SS
DISTRICT OF PUERTO RICO)

I, A. Castro Fernández, after being duly sworn, depose and say:

I am one of the Attorneys for the United States of America in the above-designated proceeding; I have prepared the foregoing Petition for Condemnation of Land, and the allegations made in the same are true to the best of my knowledge, information and belief.

(s) *A. Castro Fernández*
A. Castro Fernández

Subscribed and sworn to before me at San Juan, Puerto Rico, this 26th day of June, 1942.

(s) *Lulu G. Donohue*
LULU G. DONOHUE, Clerk

(Seal)

IN THE DISTRICT COURT OF THE UNITED STATES FOR PUERTO RICO

United States of America,
Petitioner,

v.

No. 2714 Civil

7936.6 acres of land, more
or less, situated in the
Municipality of Vieques,
Puerto Rico; Eastern Sugar
Associates, et al,
Defendants

Condemnation Proceedings

PETITION FOR CONDEMNATION OF LAND

NOW COMES the United States of America by Walter L. Newsom, Jr., Special Assistant to the Attorney General, and A. Castro Fernández, Special Attorney, at the direction and under the authority of the Attorney General of the United States, pursuant to the request of the Acting Secretary of the Navy, and represents unto the Court as follows:

1. This proceeding is instituted under the authority of the following acts of Congress: Act of Congress approved March 23, 1941 (Public Law 22, 77th Congress; 55 Stat., Chap. 26); Act of March 17, 1941 (Public Law 13, 77th Congress; 55 Stat., Chap. 16); Act of August 1, 1888 (25 Stat., 357; U.S.C. title 40, sec. 257); Act of February 26, 1931 (46 Stat. 1421; U.S.C., title 40, sec. 258a), and any acts amendatory thereof or supplementary thereto.

2. The Acting Secretary of the Navy acting for and in the capacity of the Secretary of the Navy under the authority vested in him by the acts hereinabove stated has determined that, in his opinion, it is necessary and advantageous to acquire for the United States by condemnation under judicial process certain land hereinafter described, with all buildings and improvements thereon and all appurtenances thereto, for the purposes of the Acts above set forth, adequately to provide for fleet operating facilities.

3. The land sought to be condemned through this proceeding is located in the Municipality of Vieques, Puerto Rico, and consists of two parcels of land having a combined area of 7936.6 acres more or less, with all improvements and appurtenances

4. The estate sought to be condemned and taken in the land described in the declaration of taking, as well as hereinafter in Exhibit "1" of this Petition, is a fee simple title, subject to the following reservation:

- (1) The right of the owners or lessees of the land taken to retain their base production (commonly called "sugar quota") under existing law on land which they may now own or hereafter acquire in lieu of the land taken.

5. The description of the land herein taken, as well as the registry references and descriptions, where such properties appear recorded, are set forth in Exhibit "1" attached hereto and made a part hereof as though fully recited herein.

6. The following entities may claim some interest in the land condemned and are all the persons having or claiming any interest in the said land, as appears of record, and in so far as known to the petitioner, and are therefore joined as defendants:

Name and Address	Parcel Number	Acres	Estimated Fair Compensation
Eastern Sugar Associates, a trust executed in the State of Maryland, with offices at Caguas, Puerto Rico.	A and B	6,213.53 1,723.07	\$235,459.00

Mortgagee:

The National City Bank of
New York,
San Juan, Puerto Rico

The People of Puerto Rico, San Juan, Puerto Rico) For any and all right, title and interest in and to the lands herein taken, or appurtenances thereunto belonging.	1.00
Municipality of Vicques, Vicques, Puerto Rico		

WHEREFORE, your petitioner prays this Honorable Court:
To ascertain and determine according to law the compensation

subject to the reservation mentioned in the fourth paragraph of this Petition; and to grant such other and further relief as may be lawful and proper.

San Juan, Puerto Rico, June 26, 1942.

Walter L. Newsom, Jr.
Special Assistant to the
Attorney General

A. Castro Fernández
Special Attorney

VERIFICATION

UNITED STATES OF AMERICA) SS
DISTRICT OF PUERTO RICO)

I, A. Castro Fernández, after being duly sworn, depose and say:

I am one of the Attorneys for the United States of America in the above-designated proceeding; I have prepared the foregoing Petition for Condemnation of Land, and the allegations made in the same are true to the best of my knowledge, information and belief.

A. Castro Fernández

Subscribed and sworn to before me at San Juan, Puerto Rico, this 26th day of June, 1942.

LULU G. DONOHUE, Clerk

EXHIBIT "1"

The land herein taken and condemned consists of two non-contiguous areas designated as "Parcel A" and "Parcel B"

✓ PARCEL A:

The description of Parcel "A" with its record origin and identity is as follows:

RURAL: Parcel of land situated in the Municipality of Vieques, consisting of 6213.53 acres, more or less, equivalent to 6397.65 cuerdas, equivalent to 2514 hectares, 53 ares, and 24 centiares, bounded on the North by the Atlantic Ocean; on the East by lands of the United States acquired from Juan Angel Tió and lands of Alois A. Fix, Tomás Ramírez and Manuel Quiñones; on the South by the Caribbean Sea, and on the West by the balance of the principal estate from which this parcel is segregated, the Puerto Ferro road, land of the United States acquired through the Puerto Rico Reconstruction Administration and lands of the Succession of Legillow, Jovito González, Daniel St. Villiers, Francisco Lujan, and land of the Municipality of Vieques.

The above described parcel is composed of two tracts of land, herein designated as Tracts "A" and "B", which appear recorded in the Registry of Property of Humacao, Puerto Rico, with the descriptions set forth below, and a third tract designated herein as Tract "C", which is to be segregated from a recorded piece.

A- "RUSTICA: Denominada 'Santa María', antes 'Pacencia', que radica en el término municipal de Vieques y barrio de su nombre, compuesta de DOS MIL CUERDAS de terreno, equivalentes a setecientos ochenta y seis hectáreas, siete áreas y noventa y dos centiares, dedicadas a la producción de cañas de azúcar, pastos y bosques, lindando por el Norte, con el mar; por el Este y Sur con la estancia Destino de la Sucesión Díaz, con terrenos de la Sucesión de don Juan Luján, antes de don Carlos Boldt, con la hacienda Campo Asilo de los señores V. Mourraille y Martínez, con la idem Campaña de don Mateo Luchetti, con la estancia Piedra Hueca de don Enrique Nerón y Longpré, antes de don Manuel Sixto y con el pueblo. Enclavan en dicha finca diversos edificios y maquinarias en ruina."

C- "RUSTICA: Denominada 'Puerto Real No. 2', radicada en los barrios de Puerto Real y Puerto Ferro de Vieques, compuesta de CUATRO MIL TREINTA CUERDAS con noventitrés céntimos de otra, colindante: Por el Norte, con Sucesión de Rafael Quiñones, José B. Benítez, Puerto Rico Reconstruction Administration, Carlos Le Brun, Clemente Díaz, Ildefonso Leguillou, Sucesión Bonet y Moullac, José J. Benítez, Gabriel y Esteban Díaz, Carlos Ortiz, el camino real y la Sucesión de Pantaleón Ortiz; Sur, con Vieques Sugar Company; Este, con Ensenada Honda y la ribera marítima, y Oeste, con el resto de la finca principal."

Tract "C" is to be segregated from the property denominated in the Registry as 'Puerto Real No. 2', and which is recorded with the following description:

"RUSTICA: Denominada 'Puerto Real No. 2', radicada en los barrios de Puerto Real y Puerto Ferro de Vieques, compuesta de CINCO MIL NOVECIENTOS CINCUENTICINCO CUERDAS con ochenta centavos de otra, pero que por segregación ha quedado reducida a CINCO MIL OCHOCIENTOS CINCUENTICINCO CUERDAS con setenta y nueve centavos de otra, colindante: Por el Norte, con Sucesión de Rafael Quiñones, José B. Benítez, Puerto Rico Reconstruction Administration, Carlos Le Brun, Clemente Díaz, Ildefonso Leguillou, Sucesión Bonet y Moullac, José J. Benítez, Gabriel y Esteban Díaz, Carlos Ortiz, el camino real y la Sucesión de Pantaleón Ortiz; Sur, con Vieques Sugar Company; Este, con Ensenada Honda y la ribera marítima; y Oeste, con Vieques Sugar Company, Sucesión Pérez, Sucesión Rafael García y Carlos Ortiz."

Tracts "B" and "C" form part of and are to be segregated from those tracts of the consolidated estate "Eastern Sugar Estates" which are situated in Vieques, and which appear recorded in fee simple (dominio) title in favor of Eastern Sugar Associates, a trust, at pages 89 and 91 of Volume 25 of Vieques, property No. 850, 1st inscription.

PARCEL B:

This parcel is denominated "Cabeza del Este" or "Punto del Este", and appears recorded in the Registry of Property of Humacao under the following description:

"RUSTICA: Radicada en el barrio Puerto Diablo de Vieques, compuesta de MIL SETECIENTAS CUATRO CUERDAS

IN THE DISTRICT COURT OF THE UNITED STATES FOR PUERTO RICO

United States of America,
Petitioner

v.

7936.6 acres of land, more
or less, situated in the
Municipality of Vieques,
Puerto Rico, Eastern Sugar
Associates, et al.,
Defendants

No. 2714 Civil

Condemnation Proceedings

(Filed Jan. 24, 1942)

FINDINGS OF FACT, CONCLUSIONS OF LAW
AND JUDGMENT

The above-entitled cause having come on for trial on the 25th, 26th, 27th and 30th days of September, and the 1st, 2nd, 3rd and 11th days of October, 1946, before this Court, and the evidence having been duly taken and heard, the Court makes and files the following Findings of Fact and Conclusions of Law, and enters the following Judgment:

FINDINGS OF FACT

I

That on June 26, 1942, the United States of America filed herein a Petition for Condemnation and a Declaration of Taking, pursuant to the statutes in such cases made and provided, and on said date this Court made and entered its Judgment vesting title in the United States of America to the two non-contiguous

which reference is hereby made.

Subsequently, on December 4, 1944, petitioner made another deposit of \$126,041 which the parties on December 30, 1944, agreed to consider as an additional deposit of estimated fair compensation under the Declaration of Taking; and the amount of \$18,460.69 was deposited as interest at 6% per annum on the said sum of \$126,041 from June 26, 1942 to December 4, 1944.

II

That the interest herein condemned in the said lands is a fee simple absolute title to Parcels A and B described in the said Declaration of Taking and in the Petition for Condemnation filed in this proceeding, with all improvements thereon and appurtenances thereunto belonging, subject, however, to the following reservation:

The right of the owners or lessors of the lands taken to retain their base production (commonly called "sugar quota") under existing law on land which they may now own or hereafter acquire in lieu of the lands hereby taken.

III

That service has been properly made upon all persons interested in the lands herein condemned, and that all proceedings aforesaid have been duly and regularly instituted and conducted according to law.

IV

That the property condemned herein is described as follows:

Puerto Ferro road, land of the United States acquired through the Puerto Rico Reconstruction Administration and lands of the Succession of Legillo, Jovito González, Daniel St. Villiers, Francisco Lujan, and land of the Municipality of Vieques.

PARCEL B

"RUSTICA: Radicada en el barrio Puerto Diablo de Vieques, compuesta de MIL SETECIENTAS CUATRO CUERDAS y cuatrocientas varas cuadradas, en linderos: Norte, Este y Sur, el mar y Oeste, Matías Hjardermaal y Severino Dans, antes el mismo Matías Hjardermaal."

Parcel A contains 6,213.53 acres and was formerly a part of a larger tract of approximately 8,800 acres belonging to defendants in Vieques. Parcel B has an area of 1,723.07 acres, more or less, and is five to six miles distant from Parcel A. Both parcels form part of a single integrated property referred to in the Answer as "Eastern Sugar Estates" consisting of approximately 30,000 acres of land, in which are located four sugar mills, an extensive railway system, docks, warehouses, and other facilities, devoted to the raising of sugar cane, pasture for the raising and feeding of livestock, and the elaboration of raw sugar from canes grown on lands owned and leased and canes produced on lands of independent farmers.

The said lands condemned are described with more particularity in the Petition for Condemnation and Declaration of Taking filed herein.

VI

That the lands taken, designated as Parcels A and B, had at the time of the taking a market value of \$380,000.00, and that the said sum of \$380,000.00 constitutes just compensation for the taking of said properties.

VII

That the lands, equipment, and other properties owned by defendants in the Island of Vieques and in the Island of Puerto Rico have suffered no depreciation in market value as a result of the taking of Parcels A and B above referred to.

CONCLUSIONS OF LAW

A

That the Court has jurisdiction of the parties and subject matter of this action, and that the proceedings herein have been duly and regularly instituted and conducted according to law.

B

That the use for which the said property herein condemned is taken is a public use of the United States of America and that the United States of America is authorized by law to acquire the same by condemnation.

C

That the damages the defendants, former owners of said properties, suffered amount to \$380,000.00

D

JUDGMENT

WHEREFORE, IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

That the parcels of land hereinbefore referred to and more particularly described in the Petition for Condemnation and the Declaration of Taking filed in this action, including all improvements thereon and all appurtenances thereunto belonging, and any and all rights, claims, title, interest and estate of defendants and respondents herein, and each and every person whatsoever, are hereby condemned to the public use of the United States of America for the purposes more particularly described in the said Declaration of Taking and Petition for Condemnation, and that the fee simple title absolute to said property vested in the United States of America free and discharged of all claims and liens of every kind whatsoever;

That the amount of \$380,000 constitutes full and just compensation for the properties herein taken and condemned.

That defendants are entitled to the amount of \$18,500.00 as a deficiency in and in addition to the amounts heretofore deposited in the Registry of this Court as estimated just compensation for the property condemned, with legal interest on the amount of said deficiency from June 26, 1942 to the time the same shall be deposited in the Registry of this Court for the use of said defendants;

That the United States of America shall deposit the amount of said deficiency, with legal interest thereon, in the Regis-

orders as may be necessary in the premises.

San Juan, Puerto Rico, January 24th, 1947.

ATTEST:

A true Copy

MARY AGUAYO,

Clerk U. S. Dist. Court

By: Alma Delgado

Delgado
Deputy

(s) Robert A. Cooper
Robert A. Cooper
Judge

(COPY)

CERTIFICATE AS TO REGULARITY OF CONDEMNATION PROCEEDING
PUERTO RICO

I hereby certify that the condemnation proceeding entitled United States of America v. 7,936.6 acres of land in the Municipality of Vieques, Puerto Rico, Eastern Sugar Associates, et al., No. 2714 Civil, Department of Justice File No. 33-40-123-4, Navy Department acquisition, has been regularly conducted; that the Court had jurisdiction of the subject matter of said action and of all necessary parties to the action by the joinder of such parties as defendants and by actual service of process, according to law; and that a valid fee simple title to the premises condemned in this proceeding, as described in the Judgment entered in this proceeding (subject to all reservations recited in the said Judgment), has vested in the United States of America pursuant to the Declaration of Taking Act.

Dated at San Juan, Puerto Rico, this 24th day of
January, 1947.

/sd/ Philip F. Herrick,
United States Attorney

IN THE DISTRICT COURT OF THE UNITED STATES FOR PUERTO RICO

United States of America,	:	
Petitioner	:	Civil 2714
vs.	:	Condemnation Proceedings
7936.6 acres of land, more or less, situated in the Municipi- pality of Vieques, Puerto Rico, Eastern Sugar Associates, at al.,	:	(Filed Jan. 21, 1947)
Defendants	:	

OPINION

This proceeding involves the condemnation of 7936.6 acres of land in the municipality of Vieques, Puerto Rico. The case was tried in this Court and a judgment duly entered on the 29th of December, 1942. This Court held that there was no basis for severance damages and struck testimony offered by defendant in support of the claim for severance damages. The case was appealed by the defendants and the Circuit Court of Appeals for the First Circuit reversed this Court and directed that the case be remanded for further proceedings not inconsistent with the opinion of the Appellate Court. In the opinion of the Circuit Court it is stated:

"The court below therefore erred in ruling that the appellants' lands in Puerto Rico had not been severed in the legal sense from their lands in Vieques. Their evidence should have been considered in order to determine as a matter of fact whether, in spite of lack of physical contiguity, their holdings by reason of the uses to which they were being put, or would probably be put in the reasonably near future, are

" . . . This evidence was to the effect that in the past the appellants had raised sugar cane on the lands on Vieques which the government has taken; that they had transported this cane to their mills on the main island of Puerto Rico for processing into sugar; and that, there being no other lands economically available upon which they could raise cane to keep their mills running at full capacity, they had suffered a loss to the extent of \$270,000 "in value of excess equipment." The meaning of the phrase just quoted is not altogether clear. If it means that after the taking the appellants' mills had an uneconomic over-capacity so that they could not be operated by the appellants as efficiently and therefore as profitably as before the taking, then the stricken evidence shows only a loss to business which resulted as an unintended incident of the taking and as a loss not compensable under the doctrine of Mitchell v. United States, supra. On the other hand, if it means, and there is other evidence tending to show that this is what the witness who used the phrase meant by it, that the over-capacity of the mills with respect to cane lands available to supply them has depreciated their value on the market to the extent of \$270,000, then the evidence would tend to show a compensable loss. In short the stricken evidence would indicate a compensable loss only if it means that after the taking the appellants' mills had an uneconomic over-capacity so that they could not be operated by anyone as efficiently and therefore as profitable as before the taking, this being a matter which a hypothetical willing buyer would consider in determining what he would pay for the property." * . .

The foregoing quotations from the opinion of the Circuit Court of Appeals makes clear the issues now to be determined. This Court is now called upon to determine (a) the fair market value of the property taken; (b) the compensation due defendants as severance damages, if I find that the claim for severance damages has been sustained by the testimony. The condemned

of a single integrated property referred to in the answer as "Eastern Sugar Estates" consisting of approximately 30,000 acres of land on which are located four sugar mills, an extensive railway system, docks, warehouses and other facilities, which it is alleged, is devoted as an integrated whole to the raising of sugar cane; pasture for the raising and feeding of livestock; transportation of cane to sugar mills and the elaboration of raw sugar from canes grown on lands owned and leased and canes produced on lands of independent farmers.

It is alleged that the taking of the lands on Vieques deprives the defendant of a part of its lands essential for economical operation of the integrated properties. In other words, that the remainder of Eastern Sugar Estates as an integrated property suffered severance damages by reason of the taking of the land in Vieques. With respect to the market value of the lands actually taken on Vieques, defendant contends that the sum deposited by the Government as well as the amount allowed by this Court in the previous trial is not just compensation for the same. It thus appears that three issues are presented for decision and it will be convenient to consider them separately.

1.- Did the totality of the properties remaining in the ownership of Eastern Sugar Estates as a single integrated property consisting of four sugar mills, 30,000 acres of land, a railway system, docks, warehouses, etc. suffer depreciation

just compensation for the lands actually taken?

1. Eastern Sugar Estates, as already indicated, consists of lands owned by trustees who are parties-defendant herein. Also four sugar mills known as Santa Juana, Pasto Viejo, Juncos and Cayey. A railway system belonging to defendants connects Santa Juana, Juncos and Pasto Viejo with shipping facilities at Humacao Playa. The cane grown on lands of Santa Juana can be ground at Juncos or Pasto Viejo and cane grown on lands of Pasto Viejo can be ground in the other mills. The cane grown on Cayey lands, although Cayey is not connected with the other three by railroad, can be transported by truck to Santa Juana or the other two mills for grinding. In fact, this has been done in a few instances. Communication with the lands of Eastern Sugar Estates in Vieques is maintained by barges and tugboats and so Vieques cane is taken to Pasto Viejo for grinding. The whole system or enterprise is under the direction of the President of Eastern Sugar Associates, who testified at the trial. His office is in Caguas, Puerto Rico, and from it he directs the operations of the four mills, the lands and other properties. To facilitate the operations of the system, it is divided into a field department, a factory department and a railroad and marine department. All are responsible to and controlled by the central management centered at Caguas. Although separate production records are kept for each farm, a centralized accounting system is maintained and replanting programs are worked out with reference to the estate as a whole with a

While physical contiguity is an important evidentiary fact in deciding what is a distinct and independent tract, integrated use not physical contiguity is the test. When this test of unity of use is applied to Eastern Sugar Estates, it must be held that Eastern Sugar Estates constituted a single unitary tract. It follows that the taking of the non-contiguous lands in Vieques constituted a severance in the legal although not the physical sense.

I must determine the question whether the rest of this integrated unitary property has suffered damage by reason of the severance of Vieques property. Defendants' contention is based on two premises:

1.- After the taking defendants' mills have such an over-capacity with respect to the cane lands available to supply them that their value on the market has been materially reduced. In other words, a willing buyer seeking a satisfactory investment would pay less for the lands not taken than he would have paid for the same properties if there had been no severance.

2.- With the reduction of pasturage in Vieques, the unitary tract or integrated property has been damaged because it is necessary to take cane lands out of production in order to graze the herd of oxen necessary for efficient operation of defendants' numerous acres of cane land. Defendants' witnesses on the question of severance damages testified at length. One

such as New York. I cannot accept the statement that there is no satisfactory market in Puerto Rico for sugar cane lands and sugar cane centrals. It is conceivable that properties of Eastern Sugar Estates, if offered for sale would bring to the owner a much higher price if sold in separate tracts or parcels. Mr. Haslam appraised the properties of Eastern Sugar Estates at \$14,724,000 before taking and \$13,312,000 after taking. He states that the taking caused an uneconomic over-capacity of mills and as the mills would have to grind colono cane instead of administration cane, it would result in a loss of profit. He concludes that Eastern Sugar Estates made a profit of \$1.25 per ton of administration cane but only made 39 cents a ton on colono cane. He finds a potential production of 491,774 tons on the Island of Puerto Rico and 86,882 tons on Vieques. What he really states is that before the taking, administration cane on the Island of Puerto Rico plus the cane produced in Vieques, amounted to 578,656 tons. He estimated 604,520 tons for colono cane. By this process he reaches the conclusion that there was an excess grinding capacity of 78,000 tons after the taking. While before the taking the excess capacity amounted to 1824 tons. The lost tonnage, therefore, is 76,176 tons. I have searched the evidence in this case and am unable to accept the conclusions of Mr. Haslam.

Mr. Cochran states that the properties of Eastern Sugar

2400 acres of the lands taken are suitable for cane production and that 1680 cuerdas could be harvested yearly. He also figured on the production of 30 tons per acre. In arriving at his estimate of damages he took into consideration the loss of manufacturing profits. It is incumbent on the defendants in this case to sustain their contention by a preponderance of the evidence. The Government produced several witnesses who state that properties not taken suffered no damage by the taking. These witnesses include Mr. Portela, Mr. Nido, Mr. Menéndez Ramos and Mr. Villamil. Mr. Nido is engaged in the production of sugar cane and has a thorough understanding of its problems and is also familiar with the value of sugar cane lands. The same can be said of Mr. Villamil and Mr. Menendez Ramos. Mr. Portela has lived all of his life in Vieques and has a very intimate contact with sugar cane production on the island.

In the light of their testimony I cannot find that defendants' contention is sustained by a preponderance of testimony. I think the preponderance is the other way. The damages sustained by the taking must be based upon the loss of future business or the loss of manufacturing profits, and as the Circuit Court of Appeals stated in this case, such losses are not compensable. In determining the greater weight of the testimony it is proper that I consider what seems to be established by the testimony that there has been a gradual reduction in cane planting on the island of Vieques for several years.

My conclusion is that defendants have suffered no depreciation in the value of the lands or properties on the Island of Puerto Rico and that the property not taken in Vieques has suffered no severance damages.

I find that the sum of \$235,459.00 deposited by the Government as just compensation for the land actually taken in Vieques is not just compensation for the land taken.

I find that the land taken had a market value at the time of taking of \$380,000.00. A judgment in accordance with this opinion will be entered.

In reaching my conclusion I have considered and thoroughly studied all the evidence including other sales of land and also the history of the sugar industry in Vieques. According to the opinion of the Circuit Court of Appeals in this case it does not necessarily follow that severance damages must be awarded even though the testimony sustains that there has been a severance. That language when applied to the facts of this case, convinces me that while there has been a severance in the legal sense such severance has caused no compensable damage to the market value of the properties not taken.

It may be conceded that defendants have suffered a business loss or the loss of future profits but this is not compensable.

Defendants did not claim damages for any business loss or

No 2714 Civil
h. 9am

IN THE DISTRICT COURT OF THE UNITED STATES FOR PUERTO RICO

Julio 1/42.

United States of America,
Petitioner

v.

No. 2714 Civil

7936.6 acres of land, more
or less, situated in the
Municipality of Vieques,
Puerto Rico, Eastern Sugar
Associates, et al.,
Defendants

Condemnation Proceedings

Filed June 26, 1942

JUDGMENT

This cause coming on to be heard at this term of Court upon the motion of the petitioner, the United States of America, to enter a judgment on the Declaration of Taking filed in the above-entitled case on June 26, 1942 for an order fixing the date when possession of the property herein described is to be surrendered to the United States of America, and for an order for recordation of title, and upon consideration thereof and of the condemnation petition filed herein, said Declaration of Taking, the statutes in such case made and provided, and it appearing to the satisfaction of the Court:

First: That the United States of America is entitled to acquire property by eminent domain for the purposes set out and prayed in said petition;

Second: That a petition for condemnation was filed at the request of the Acting Secretary of the Navy, acting for and in the capacity of the Secretary of the Navy, the authority empowered by law to acquire the lands described in said petition, and also under authority of the Attorney General of the United States;

Third: That said petition and Declaration of Taking state the authority under which, and the public use for which said lands were taken; that the Secretary of the Navy is the person duly authorized and empowered by law to acquire lands such as are described in the petition for the military purposes described in the Declaration of Taking, as authorized by law, and that the Attorney General of the United States is the person duly authorized by law to direct the institution of such condemnation proceedings;

Fourth: That a proper description of the land sought to be taken, sufficient for identification thereof, is set out in said Declaration of Taking, in the petition for condemnation, and in

use of the persons entitled thereto, upon and at the time of the filing of said Declaration of Taking;

Eighth: That a statement is contained in said Declaration of Taking that the amount of the ultimate award of compensation for the taking of said property, in the opinion of the said Acting Secretary of the Navy, will be within any limits prescribed by Congress as to the price to paid therefor; it is therefore, this 26th day of June, 1942

ADJUDGED, ORDERED AND DECREED, that the title to the two (2) parcels of land situate in the Municipality of Vieques, Puerto Rico, shown on the maps attached to the Declaration of Taking, and described in Exhibit "1" of this Judgment, containing a total area of 7936.6 acres of land, more or less, together with all buildings, improvements and appurtenances thereunto belonging, vested in the United States of America upon the filing of said Declaration of Taking and the depositing in the Registry of this Court of the sum of \$235,460, in fee simple, subject to the following reservation:

1. The right of the owners or lessees of the lands taken to retain their base production (commonly called "sugar quota") under existing law on land which they may now own or hereafter acquire in lieu of the lands hereby taken.

(The said lands are deemed to have been condemned and taken for the use of the United States of America and the right to just compensation for the property taken, upon the filing of the Declaration of Taking and making of the deposit, vested in the persons entitled thereto, and the amount of compensation shall be ascertained and awarded in this proceeding as established by judgment herein pursuant to law.

That the United States of America is entitled to the possession of the premises described hereinafter in Exhibit "1" and known as Estate Santa María, ten days after service of a copy of this Judgment, of the petition for condemnation and of the summons upon the defendants in possession of said premises or if no defendants are in actual possession thereof, then ten days after the posting of a copy of this Judgment at a conspicuous place upon said property, the United States and its agents are hereby authorized to take possession thereof. With respect to all the rest of the property subject of condemnation herein, the United States and its agents are entitled to take full and complete possession thereof forty five (45) days after said service of process. This cause is held open for such other and further orders, judgments and decrees as may be necessary in the premises.

It is hereby ordered that the Registrar of Property of Humacao, Puerto Rico, proceed to record in the name of the United States of America the fee simple (dominio) title to the two parcels of land described in Exhibit "1" of this Judgment. Said title is to be recorded free of any and all charges, liens, encumbrances or defects

EXHIBIT "1"

The land herein taken and condemned consists of two non-contiguous areas designated as "Parcel A" and "Parcel B".

PARCEL A:

The description of Parcel "A" with its record origin and identity is as follows:

RURAL: Parcel of land situated in the Municipality of Vieques, consisting of 6213.53 acres, more or less, equivalent to 6397.65 cuerdas, equivalent to 2514 hectares, 53 ares, and 24 centiares, bounded on the North by the Atlantic Ocean; on the East by lands of the United States acquired from Juan Angel Tió and lands of Alois A. Fix, Tomás Ramírez and Manuel Quiñones; on the South by the Caribbean Sea, and on the West by the balance of the principal estate from which this parcel is segregated, the Puerto Ferro road, land of the United States acquired through the Puerto Rico Reconstruction Administration and lands of the Succession of Legillow, Jovito González, Daniel St. Villiers, Francisco Lujan, and land of the Municipality of Vieques.

The above described parcel is composed of two tracts of land, herein designated as Tracts "A" and "B", which appear recorded in the Registry of Property of Humacao, Puerto Rico, with the descriptions set forth below, and a third tract designated herein as Tract "C", which is to be segregated from a recorded piece.

A- "RUSTICA: Denominada 'Santa María', antes 'Pacencia', que radica en el término municipal de Vieques y barrio de su nombre, compuesta de DOS MIL CUERDAS de terreno, equivalentes a setecientas ochenta y seis hectáreas, siete áreas y noventa y dos centiares, dedicadas a la producción de cañas de azúcar, pastos y bosques, lindando por el Norte, con el mar; por el Este y Sur con la estancia Destino de la Sucesión Díaz, con terrenos de la Sucesión de don Juan Luján, antes de don Carlos Boldt, con la hacienda Campo Asilo de los señores V. Mourraille y Martínez, con la ídem Campaña de don Mateo Luchetti, con la estancia Piedra Hueca de don Enrique Nerón y Longpré, antes de don Manuel Sixto y con el pueblo. Enclavan en dicha finca diversos edificios y maquinarias en ruina."

C- "RUSTICA: Denominada 'Puerto Real No. 2', radicada en los barrios de Puerto Real y Puerto Ferro de Vieques, compuesta de CUATRO MIL TREINTA CUERDAS con noventitres céntimos de otra, colindante: Por el Norte, con Sucesión de Rafael Quiñones, José B. Benítez, Puerto Rico Reconstruction Administration, Carlos Le Brun, Clemente Díaz, Ildefonso Leguillou, Sucesión Bonet y Moullac, José J. Benítez, Gabriel y Esteban Díaz, Carlos Ortiz, el camino real y la Sucesión de Pantaleón Ortiz; Sur, con Vieques Sugar Company; Este, con Ensenada Honda y la ribera marítima, y Oeste, con el resto de la finca principal."

Tract "C" is to be segregated from the property denominated in the Registry as 'Puerto Real No. 2', and which is recorded with the following description:

P. No. 69
"RUSTICA: Denominada 'Puerto Real No. 2', radicada en los barrios de Puerto Real y Puerto Ferro de Vieques, compuesta de CINCO MIL NOVECIENTOS CINCUENTICINCO CUERDAS con ochenta centavos de otra, pero que por segregación ha quedado reducida a CINCO MIL OCHOCIENTOS CINCUENTICINCO CUERDAS con setenta y nueve centavos de otra, colindante: Por el Norte, con Sucesión de Rafael Quiñones, José B. Benítez, Puerto Rico Reconstruction Administration, Carlos Le Brun, Clemente Díaz, Ildefonso Leguillou, Sucesión Bonet y Moullac, José J. Benítez, Gabriel y Esteban Díaz, Carlos Ortiz, el camino real y la Sucesión de Pantaleón Ortiz; Sur, con Vieques Sugar Company; Este, con Ensenada Honda y la ribera marítima; y Oeste, con Vieques Sugar Company, Sucesión Pérez, Sucesión Rafael García y Carlos Ortiz."

Tracts "B" and "C" form part of and are to be segregated from those tracts of the consolidated estate "Eastern Sugar Estates" which are situated in Vieques, and which appear recorded in fee simple (dominio) title in favor of Eastern Sugar Associates, a trust, at pages 89 and 91 of Volume 25 of Vieques, property No. 850, 1st inscription.

PARCEL B:

This parcel is denominated "Cabeza del Esto" or "Punto del Esto", and appears recorded in the Registry of Property of Humacao under the following description:

75
"RUSTICA: Radicada en el barrio Puerto Diablo de Vieques, compuesta de MIL SETECIENTAS CUATRO CUERDAS

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE DISTRICT OF PUERTO RICO

United States of America,
Petitioner

v.

7936.6 acres of land, more
or less, situated in the
Municipality of Vieques,
Puerto Rico, Eastern Sugar
Associates, et al.,

Defendants

NO. 2714 CIVIL

filed June 26, 1942

DECLARATION OF TAKING

WHEREAS, it has become necessary that the lands
which are the subject of condemnation in the above entitled
proceeding be taken for immediate public use by the United
States of America for the establishment of fleet operating
facilities and Marine Corps operating area, Vieques, Roosevelt
Roads, Puerto Rico, upon the filing of this declaration of
taking,

NOW, THEREFORE, I, James Forrester, Acting Secretary

cause to be filed this declaration of taking, pursuant to said Acts of Congress and any acts amendatory thereof or supplementary thereto, and by virtue of authority thereof, do hereby state that I have selected for acquisition seven thousand, nine hundred thirty-six and six tenths (7936.6) acres of land, more or less, situated in the Municipality of Vieques, Puerto Rico, which said lands are shown on P. W. Drawing No. 167 entitled "Fleet Operating Facilities, Roosevelt Roads, Puerto Rico, Area to be Acquired Northeast Coast of Vieques Island", and P. W. Drawing No. 535 entitled "Fleet Operating Facilities, Roosevelt Roads, Puerto Rico, Area to be Acquired East End of Vieques Island", which are attached hereto as Exhibit "A" and "B" respectively, and made a part of this declaration of taking. Said lands are more particularly described as follows:

Two non-contiguous parcels containing a ~~total~~ of 7936.6 ~~acres~~ of land more particularly described as follows:

(Bearings refer to the magnetic North with a declination of $6^{\circ} 25'$ East of North, and distances as expressed in meters refer to the standard meter equivalent to 39.37 United States inches.)

PARCEL "A"

Beginning at point C1 as shown on Exhibit "A", said point being a post set in the ordinary high tide line at the Atlantic Ocean at the most Northwesterly corner of that certain land of the United States, containing an area of 3207.3 acres, more or less, acquired from Juan Angel Tio and

Thence South $89^{\circ} 03'$ East, a distance of 1238.97 meters to point 56-1 which is a post on the Westerly line of land of Alois A. Pix; thence departing from the boundary of said land of the United States and following along said Westerly line of land of Alois A. Pix, South $0^{\circ} 17'$ West, a distance of 1228.75 meters to point No. 56-1 which is a rail at the most Southwesterly corner of said land; thence along the Southerly line of said land of Alois A. Pix and land of Tomas Ramirez, South $77^{\circ} 06'$ East, a distance of 1220.18 meters to point No. 56-2 which is a rail;

Thence along the Southerly line of said land of Tomas Ramirez and land of Manuel Quinones, North $60^{\circ} 08'$ East, a distance of 460.20 meters to point No. 56-3 which is a jaguey tree; thence along the Southerly line of said land of Manuel Quinones, North $84^{\circ} 30'$ East, a distance of 153.35 meters more or less, to point No. 56-4 which point is in the ordinary high tide line of the Caribbean Sea as defined along the Southerly shore of the Island of Vieques; thence along said high tide line in a general Westerly direction following the shore of said Island of Vieques to point No. 57 which point is on the shore line of the Bay known as Puerto Secuito;

Thence North $52^{\circ} 19'$ East, a distance of 234.30 meters more or less, to point 58 which is a rail adjacent to the Easterly line of the Puerto Ferro road; thence along the Easterly line of said road north $0^{\circ} 16'$ West, a distance of 1742.62 meters to point 59 which is a jaguey tree; thence North $27^{\circ} 56'$ East, a distance of 963.39 meters to point No. 60; Thence North $17^{\circ} 57'$ East, a distance of 689.27 meters to point No. 61 which is a jaguey tree on the Southerly line of land of the United States acquired through the Puerto Rico Reconstruction Administration; thence along the Southerly boundary of said land of the United States South $73^{\circ} 22'$ East, a distance of 134.38 meters to point No. 62 which is a post; thence South $32^{\circ} 43'$ East, a distance of 302.40 meters to point No. 63 which is a stone; thence South $50^{\circ} 34'$ East, a distance of 114.12 meters to point No. 64 which is a rail;

Thence South $87^{\circ} 57'$ East, a distance of 239.03 meters to point No. E14 which is a yuma tree; thence North $19^{\circ} 46'$ East, a distance of 71.97 meters to point No. E15 which is a yuma tree; thence North $73^{\circ} 19'$ East, a distance of 77.63 meters to point No. E16 which is a guayacan tree; thence North $2^{\circ} 13'$ West, a distance of 180.91 meters to point No. E17 which is a jaguey tree; thence North $1^{\circ} 34'$ East, a distance of 386.78 meters to point No. E18 which is a post on the Southerly line of land of Jovito Gonzalez known as "El Destino".

Thence along the boundary of said land of Jovito Gonzalez, South $86^{\circ} 35'$ East, a distance of 104.88 meters to point E19 which is a post; thence North $8^{\circ} 13'$ East, a distance of 39.02 meters to point No. E20 which is a moca tree; thence North $30^{\circ} 38'$ East, a distance of 69.99 meters to point No. E21; thence North $1^{\circ} 17'$ East, a distance of 298.86 meters to point No. E22; thence North $46^{\circ} 40'$ West, a distance of 374.46 meters to point No. E23; thence North $85^{\circ} 21'$ West, a distance of 432.43 meters to point No. E24 which is a jaguey tree; thence South $14^{\circ} 23'$ East, a distance of 204.92 meters to point No. E25 which is a jaguey tree; thence South $13^{\circ} 44'$ West, a distance of 843.59 meters to point No. E26 which is a stake; thence South $87^{\circ} 58'$ West, a distance of 213.60 meters to point No. E27 which is a stake; thence North $51^{\circ} 54'$ West, a distance of 24.35 meters to point No. E28 which is a pendula tree; thence North $41^{\circ} 03'$ West, a distance of 402.34 meters to point No. E29; thence North $40^{\circ} 32'$ West, a distance of 271.31 meters to point No. E30 which is an almoeigo tree;

thence North $38^{\circ} 34'$ West, a distance of 40.63 meters to point No. E31 which is a jaguey tree on the Easterly line of the Puerto Rerro Road; thence along the Easterly line of said road, the following courses and distances: North $4^{\circ} 27'$ East, a distance of 133.11 meters to point No. E32 which is a moca tree; thence North $19^{\circ} 39'$ West, a distance of 85 meters to point No. E33; thence North $39^{\circ} 20'$ West,

Thence North $1^{\circ} 00'$ East, a distance of 99.13 meters to point No. E42 which is an almecigo tree; thence North $4^{\circ} 53'$ East, a distance of 39.42 meters to point No. E43;

Thence North $51^{\circ} 01'$ East, a distance of 6.44 meters to point No. E44; thence North $35^{\circ} 03'$ East, a distance of 114.29 meters to point No. E45 which is a palo blanco tree; thence North $26^{\circ} 38'$ East a distance of 45.74 meters to point No. E46 which is a moca tree;

Thence North $56^{\circ} 07'$ East, a distance of 45.10 meters to point No. E47 which is a moca tree; thence North $72^{\circ} 03'$ East, a distance of 35.45 meters to point No. E48 which is a oachimba tree;

Thence North $51^{\circ} 47'$ East, a distance of 47.86 meters to point No. E49 which is a moca tree; thence North $40^{\circ} 29'$ East, a distance of 29.17 meters to point No. E50;

Thence South $84^{\circ} 21'$ West, a distance of 26.03 meters to point No. E51; thence North $63^{\circ} 45'$ West, a distance of 213.42 meters to point No. E52; thence North $37^{\circ} 30'$ West, a distance of 42.07 meters to point No. E53;

Thence North $45^{\circ} 40'$ West, a distance of 14.43 meters to point No. E54; thence North $69^{\circ} 54'$ West, a distance of 22.13 meters to point No. E55; thence North $36^{\circ} 38'$ West, a distance of 28.27 meters to point No. E56;

Thence North $11^{\circ} 35'$ West, a distance of 25.94 meters to point No. E57; thence North $15^{\circ} 14'$ West, a distance of 8.56 meters to point No. E58;

Thence North $2^{\circ} 35'$ East a distance of 27.26 meters to point No. E59; thence North $68^{\circ} 09'$

Thence North $87^{\circ} 53'$ West, a distance of 52.29 meters to point No. E65 which is a stake; thence North $4^{\circ} 14'$ East, a distance of 22.88 meters to point No. E66;

Thence North $26^{\circ} 32'$ East, a distance of 77.49 meters to point No. E67 which is a stake; thence North $1^{\circ} 01'$ East, a distance of 253.06 meters to point No. E68;

Thence North $16^{\circ} 58'$ West, a distance of 36.77 meters more or less to point No. E69 which is in the ordinary high tide line of the Atlantic Ocean on the Northerly shore of Vieques Island;

Thence Easterly along said ordinary high tide line, a distance of 3,350 meters more or less to point C1 which is the point of beginning.

Following is a boundary description of the above described land:

HEREAB: Parcel of land situated in the Municipality of Vieques, consisting of 5213.53 acres, more or less, equivalent to 6397.65 cuerdas, equivalent to 2514 hectares, 53 ares, and 24 centiares, bounded on the North by the Atlantic Ocean; on the East by lands of the United States acquired from Juan Angel Tio and lands of Alois A. Pla, Tomas Ramirez and Manuel Quinones; on the South by the Caribbean Sea, and on the West by the balance of the principal estate from which this parcel is segregated, the Puerto Perro road, land of the United States acquired through the Puerto Rico Reconstruction Administration and lands of the Succession of Legillow, Jovito Gonzalez, Daniel St. Villiers, Francisco Lujan, and land of the Municipality of Vieques.

meters more or less to point No. 32 which is a post set in the ordinary high tide line of the Atlantic Ocean on the Northerly shore of Vieques Island at the Northeasterly corner of said land of Simons;

Thence along said ordinary high tide line and following the irregular shore line of the Island of Vieques in Easterly, Southerly and Easterly directions to point No. 31, which is the point of beginning.

The above described land consists of all that portion of Vieques Island lying Easterly of the Fortuna Estate of Miguel Simons above referred to.

Following is a boundary description of the above described land:

MUNICIPAL: Parcel of land in the Municipality of Vieques, consisting of 1723.07 acres of land, more or less, equivalent to 1774.13 cuerdas, equivalent to 697 hectares, 30 ares and 33 centiares, bounded on the North, East and South by the sea, and on the West by the Fortuna Estate of Miguel Simons.

And I do declare said lands to be taken under authority of the aforesaid acts of Congress; that the use to which said lands are to be put is the same as authorized by said acts; and that the estate hereby taken in said lands for the public use aforesaid is in fee simple, reserving to the owners of the land herein taken, their right of base production (commonly called "sugar quota"), under existing law on land which they may now or hereafter acquire, in lieu of

meters more or less to point No. 32 which is a post set in the ordinary high tide line of the Atlantic Ocean on the Northerly shore of Vieques Island at the Northeastern corner of said land of Simons;

Thence along said ordinary high tide line and following the irregular shore line of the Island of Vieques in Easterly, Southerly and Easterly directions to point No. 31, which is the point of beginning.

The above described land consists of all that portion of Vieques Island lying Easterly of the Fortuna Estate of Miguel Simons above referred to.

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And I do declare said lands to be taken under authority of the aforesaid acts of Congress; that the use to which said lands are to be put is the same as authorized by said acts; and that the estate hereby taken in said lands for the public use aforesaid is in fee simple, reserving to the owners of the land herein taken, their right of base production (commonly called "sugar quota"), under existing law on land which they may now or hereafter acquire, in lieu of

(2313,460.00), which said sum having been appropriated by Congress is hereby deposited into the registry of the court for the use and benefit of the persons entitled thereto, and that: the names and addresses of the owners of said property or interest therein, and the amount of just compensation for said lands, and improvements thereon which are hereby taken, are shown on Schedule "A" which is attached hereto and made a part of this declaration of taking.

I am of the opinion that the ultimate award for the taking of said lands will be within the limits prescribed by Congress.

IN WITNESS WHEREOF, the petitioner, by and through the said James Forrestal, Acting Secretary of the Navy, acting for or in behalf of the Secretary of the Navy, has caused this declaration of taking to be signed and the seal of the Navy Department to be affixed hereto on the 9th day of June, 1942, in the city of Washington, District of Columbia.

UNITED STATES OF AMERICA

By _____
James Forrestal
Acting Secretary of the Navy

(SEAL)

SCHEDULE "A"

The names and addresses of the persons having title to or other interest in the lands described in the within declaration of taking, and the amounts estimated to be fair compensation for each respective ownership, including improvements, are as follows:

Name and Address	Parcel Number	Acres	Estimated Fair Compensation
Eastern Sugar Associates, a trust executed in the State of Maryland, with offices at Caguas, Puerto Rico.	A and B	6,213.83 1,723.07	\$235,450.00

MORTGAGE:

In favor of
The National City Bank
of New York.

LIS PENDENS:

A notation of a lis pendens appears in the Registry of Property, but the suit to which it refers has been voluntarily dismissed.

The People of Puerto Rico, San Juan, Puerto Rico;)	For any and all right, title and interest in and to the lands herein taken, or appurtenances thereunto belonging.	1.00
Municipality of Vieques, Vieques, Puerto Rico.)		



DEPARTMENT OF THE NAVY

U.S. NAVAL STATION
FPO MIAMI 34051-3001

11011
Ser 18TM-3/4780
17 Dec 87

From: Commanding Officer, U.S. Naval Station, Roosevelt Roads
To: Commander, Atlantic Division, Naval Facilities Engineering
Command (242B), Norfolk, VA 23511

Subj: EXCESS LAND FOR VIEQUES LANDFILL

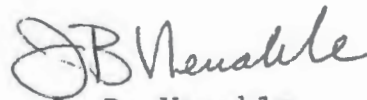
Ref: (a) LANTNAVFACENGCOM ltr 4500 EMA Vieques 241B of 2 Jul 87
(b) PHONCON LANTNAVFACENGCOM (E. Jicha)/NAVSTA ROOS RDS
(C. Nieves) of 1 Dec 87

Encl: (1) Survey Drawing (reproducible)
(2) Legal Description (Metes and Bounds) of area to be
excessed
(3) Site Plan

1. Enclosures (1) and (2) were revised and are forwarded in
accordance with references (a) and (b).

2. An easement for access to the landfill through Government
property as shown in enclosure (3), is required. We will
initiate action on the easement upon completion of the ongoing
excessing action.

3. Our point of contact is Mr. Cesareo Nieves, Realty Specialist, at
A/V 831-3048/4156/4238 or commercial (809) 865-2000, extensions 3048/
4156/4238.


J. B. Venable
By direction

Copy to: (w/o encls)
COMNAVAIRLANT (Code 61)
CINCLANTFLT (N4422)
COMNAVACTSCARIB (Code 008)

METES AND BOUNDS DESCRIPTION
SANTA MARIA TRACT, VIEQUES, PUERTO RICO
TO BE DEDICATED AS CITY DUMP

Beginning at Control Point E-32 (Recovered U.S. concrete monument shown on NAVFAC Drawing No. 4094798), adjacent to Km. 1.3 of public road PR 997; thence, leaving said point and running North east approximately 1,024 meters, more or less, passing thru intermediate points E-32 A thru H to a point, said point being identified as Control Point No. 5 also shown in NAVFAC Dwg. No. 4110607; thence on the latter drawing, leaving said point and running Southeast approximately 1088.75 meters, more or less, passing thru intermediate points 101 thru 109 and 109A to a point, said point being identified as point No. 4; thence, leaving said point and running Northeast approximately 481.15 meters, more or less, passing thru points No. 111 and No. 113 to a point, said point being identified as point No. 960, thence, leaving said point and running Northeasterly on course N00 -02'-13"E, a distance of approximately 148.97 meters to a point, said point being identified as point No. 15C known as the True Point of Beginning as shown in the City Dump Survey Drawing prepared by the Commonwealth of Puerto Rico - Department of Transportation and Public Works.

The tract of land located in the ward of Santa Maria, Municipality of Vieques, Puerto Rico, bounded on the north by Campana Road and lands of the government of the United States of America; on the south by lands of the United States of America; on the east by Campana Road and lands of the United States of America, and on the west by lands of the Commonwealth of Puerto Rico.

Said tract is more particularly described, by metes and bounds as follows:

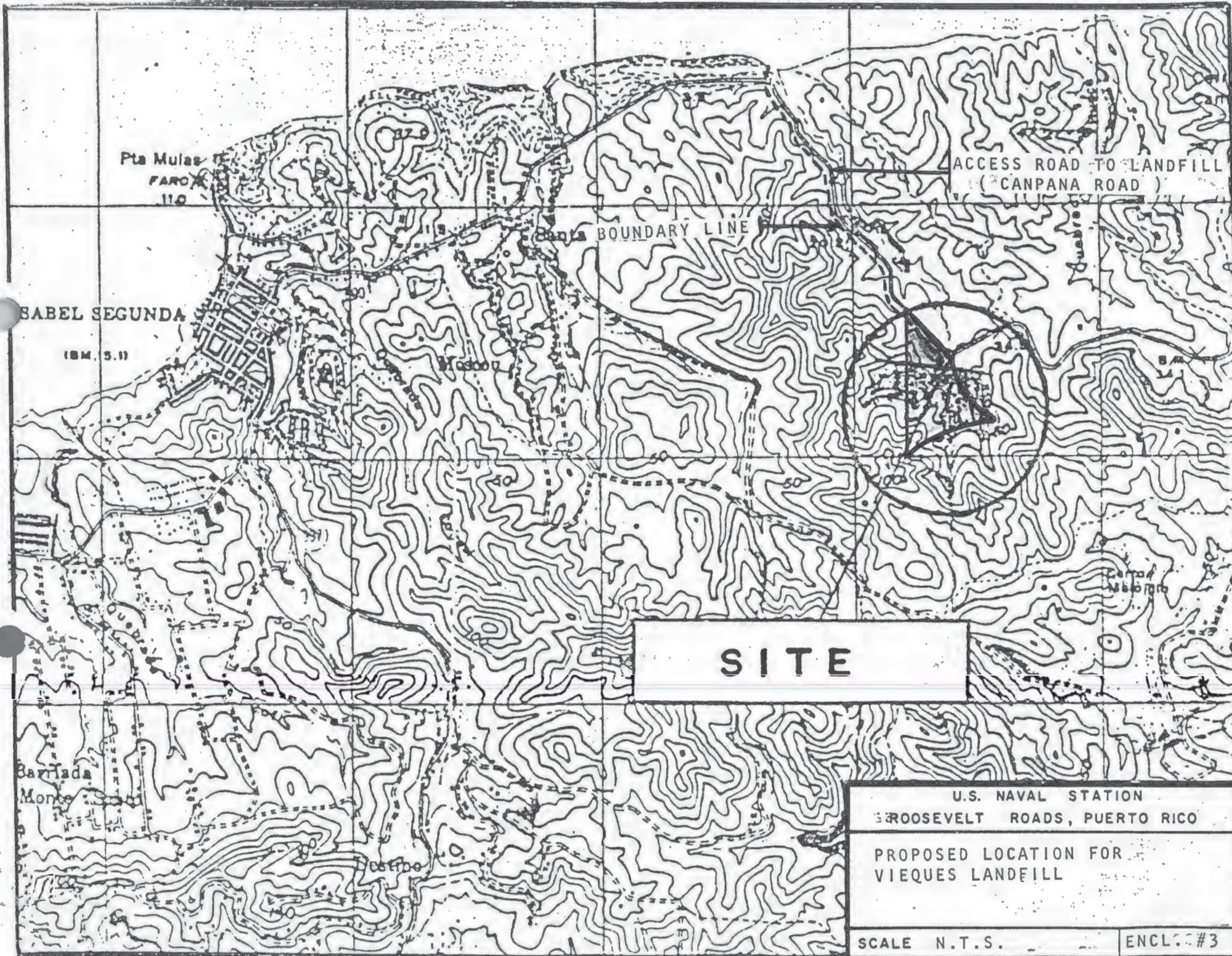
Beginning at point 15C;

thence, N00	- 02'-13"	E	151.030	meters to Point 113A
thence, N00	- 02'-03"	E	72.673	meters to Point 114
thence, N00	- 23'-09"	W	103.294	meters to Point 1706
thence, N00	- 00'-15"	W	296.008	meters to Point 1705
thence, N00	- 32'-33"	E	50.472	meters to Point 1704
thence, N00	- 00'-02"	E	7.011	meters to Point 1E
thence, S50	- 14'-52"	E	82.594	meters to Point 2E
thence, S36	- 46'-10"	E	91.882	meters to Point 3E
thence, S06	- 54'-35"	E	14.462	meters to Point 4E
thence, S02	- 49'-03"	E	55.540	meters to Point 5E
thence, S10	- 12'-48"	E	32.710	meters to Point 6E
thence, S30	- 52'-21"	E	22.061	meters to Point 7E
thence, S42	- 25'-13"	E	17.893	meters to Point 8E
thence, S47	- 09'-31"	E	68.668	meters to Point 9E
thence, S46	- 40'-47"	E	198.810	meters to Point 10E

thence, S40 - 26'-20" W 43.598 meters to Point 9C
thence, S43 - 28'-49" W 59.679 meters to Point 10C
thence, S82 - 26'-43" W 74.215 meters to Point 11C
thence, S79 - 42'-20" W 110.037 meters to Point 12C
thence, S56 - 16'-19" W 72.500 meters to Point 13C
thence, S28 - 50'-19" W 61.850 meters to Point 14C
thence, S09 - 02'-55" W 36.870 meters

to the True Point of Beginning 15C, containing 25.9063 acres, more or less, and being as delineated on the Commonwealth of Puerto Rico - Department of Transportation and Public Works, Drawing, entitled "Survey Government To Be Dedicated As City Dump, Vieques, Puerto Rico", signed by Mr. Virginio Cruz Rivera, Surveyor, License No. 5782, on May 13, 1987, as revised by Mr. Pascual Quinones, P.E., of U.S. Naval Station, Roosevelt Roads, Puerto Rico on November 30, 1987, and attached hereto and made a part hereof as Exhibit "A".

* Note: Bearings are referred to Magnetic North.



JOHN T. H. H. SECRETARY
50-619408

Reg. No. Bureau 45/4
Punta Ignacion of No. 17X1413.001-34

DEPARTMENT OF THE NAVY July 6, 1942 *117289.30*

WASHINGTON

Sir:

Pursuant to the authority of the Act of Congress approved March 23, 1941 (Public Law 22, 77th Congress; 55 Stat., 49), and the appropriation contained in the Act approved March 17, 1941 (Public Law 13, 77th Congress; 55 Stat., 34), the Secretary of the Navy has selected for acquisition 601.68 acres of land, more or less, in the Ward of Los Machos, Municipality of Ceiba, Puerto Rico, for the establishment of fleet operating facilities, Vieques, Puerto Rican Area.

In my opinion, it is necessary that these lands be acquired by the United States of America by condemnation proceedings under judicial process for the use aforesaid under the authority above mentioned and pursuant to the Acts of August 1, 1888 (25 Stat., 357; U.S.C., title 40, sec. 257), and February 26, 1931 (46 Stat., 1421; U.S.C., title 40, sec. 258a), and supplementary and amendatory acts. The appropriation chargeable is 17X1413, "Fleet Operating Facilities, Vieques, Puerto Rican Area," subhead .001, "Security of and protected fleet anchorage including breakwater, dredging, development of limited repair facilities, buildings and accessories and acquisition of land, \$35,000,000.00".

In view of the necessity for immediate acquisition of this property in the interest of the national war effort, it is considered impracticable to negotiate with the owners of the area to be acquired, as the time consumed in such negotiations would greatly delay final acquisition. Therefore, it is requested that you cause proceedings to be commenced for the condemnation in fee simple of the lands described in the enclosed declaration of taking, subject to the right of the owners thereof, to remove buildings and improvements located on the lands thereby taken, within a period of time designated by the court.

It is requested that the enclosed declaration of taking be filed in the cause and that possession of the lands be obtained at the earliest practicable date.

A check in the amount estimated to be the just compensation for the taking of said lands is submitted herewith, together with a receipt therefor. It is requested that the receipt be signed and returned to the Office of the Judge Advocate General of the Navy.

JAG:U:DWA:cje
SO-619408

For the convenience of the United States Attorney, the Commandant, Tenth Naval District, San Juan, Puerto Rico, by copy of this letter, is instructed to cooperate fully in this matter.

Very truly yours,

JAMES PORRESTAL
Acting

Enclosures (4)

The Honorable,
The Attorney General.

CC - ComTen
BuY&D
OinCofC, ContrHOy-3680 NAS,
San Juan, P.R.

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE DISTRICT OF PUERTO RICO

United States of America,
Petitioner

v.

601.63 acres of land, more
or less, in the Ward of Los
Rachos, Municipality of Caguas,
Puerto Rico, Jorge Bird Arias,
et al.,

Defendants

NO. 2782 CIVIL

(Filed July 14, 1942).

DECLARATION OF TAKING

WHEREAS, it has become necessary that the lands which are the subject of condemnation in the above entitled proceeding be taken for immediate public use by the United States of America for the establishment of fleet operating facilities, Vieques, Puerto Rican Area, upon the filing of this declaration of taking,

NOW, THEREFORE, I, James Forrestal, Acting Secretary of the Navy, acting for and in the capacity of the Secretary of the Navy, under and pursuant to the provisions of the Acts of Congress approved March 23, 1941 (Public Law 22, 77th Congress; 55 Stat., 49); March 17, 1941 (Public Law 13, 77th

Congress; 55 Stat., 34); August 1, 1883 (25 Stat., 357; U.S.C., title 40, sec. 257); and February 26, 1931 (46 Stat., 1481; U.S.C., title 40, sec. 258a), do hereby make and cause to be filed this declaration of taking, pursuant to said acts of Congress and any acts amendatory thereof or supplementary thereto, and by virtue of authority thereof, do hereby state that I have selected for acquisition six hundred one and sixty-eight hundredths (601.68) acres of land, more or less, in the Ward of Los Machos, Municipality of Ceiba, Puerto Rico, which said lands are shown on white-print of P. W. Drawing No. 46, entitled "Fleet Operating Facilities, Roosevelt Roads, Puerto Rico, Ensenada Honda Map of Property Parcels No. 72 to 74 incl", which is attached hereto as Exhibit "A" and made a part of this declaration of taking. Said lands are more particularly described as follows:

Beginning at point No. 9-26 as shown on Exhibit "A", which point is the most Southwesterly corner of land of Jorge Bird Arias, et al., shown as parcel No. 72, is the most Northwesterly corner of land of the United States acquired from Serralles, Barasorda and Belaval and is on the Easterly line of the railroad right of way of the Fajardo Development Company;

Thence along said Easterly railroad right of way line the following courses and distances:

North $35^{\circ} 25'$ East a distance of 1254.84 feet to point No. 72-1; thence North $35^{\circ} 24'$ East a distance of 514.98 feet to point No. 72-2; thence North $35^{\circ} 28'$ East a distance of 483.15 feet to point No. 72-3; thence North $35^{\circ} 23'$ East a distance of 207.26 feet to point No. 72-4; thence North $31^{\circ} 54'$ East a distance of 138.08 feet to point No. 72-5; thence North $24^{\circ} 01'$ East a distance of 115.15 feet to point No. 72-6; thence North $17^{\circ} 09'$ East a distance of 131.13 feet to point No. 72-7; thence North $8^{\circ} 37'$ East a distance of 174.98 feet to point No. 72-8;

Thence North $5^{\circ} 33'$ East a distance of 133.10 feet to point No. 72-9; which point is the most Northwesterly corner of parcel No. 72 above referred to and is the most Westerly corner of parcel No. 73;

Continuing thence along said Easterly railroad right of way line the following courses and distances:

feet North $5^{\circ} 14'$ East a distance of 235.06 to point No. 73-1; thence North $5^{\circ} 53'$ East a distance of 489.95 feet to point No. 73-2; thence North $7^{\circ} 02'$ East a distance of 164.49 feet to point No. 73-3; thence North $5^{\circ} 54'$ East a distance of 163.42 feet to point No. 73-4; thence North $4^{\circ} 45'$ East a distance of 162.91 feet to point No. 73-5; thence North $5^{\circ} 54'$ East a distance of 491.74 feet to point No. 73-6; thence North $7^{\circ} 03'$ East a distance of 164.87 feet to point No. 73-7; thence North $5^{\circ} 54'$ East a distance of 493.95 feet to point No. 73-8;

Thence North $5^{\circ} 54'$ East a distance of 469.96 feet to point No. 73-9; which point is the Northwesterly corner of said parcel No. 73 and the Southwesterly corner of parcel No. 74; Continuing thence along said Easterly right of way line, North $5^{\circ} 53'$ East a distance of 2381.67 feet to point No. 74-1 which point is on the Southerly bank of the Majagua River and is the most Northwesterly corner of said parcel No. 74;

Thence departing from said Easterly right of way line, and following along said Southerly bank of the Majagua River the following courses and distances:

South $47^{\circ} 36'$ East a distance of 111.14 feet to point No. 74-2; thence North $59^{\circ} 41'$ East a distance of 180.51 feet to point No. 74-3; thence South $62^{\circ} 52'$ East a distance of 103 feet to point No. 74-4; thence South $18^{\circ} 54'$ East a distance of 210.55 feet to point No. 74-5; thence South $44^{\circ} 11'$ East a distance of 104.95 feet to point No. 74-6;

Thence North $68^{\circ} 42'$ East a distance of 157.56 feet to point No. 74-7 which point is on the ordinary high tide line of the Caribbean Sea as established in the Majagua Bay at the mouth of the Majagua River;

Thence along said ordinary high tide line in a general Southeasterly direction and along the sand bars and mangrove swamps composing the shore line of the Caribbean Sea in this vicinity and following said shore line along those certain points or promontories known as point Figuera or Figuerita and continuing along the shore of that certain inlet known as "Port Medio Mundo" to point No. 9-6 as shown on Exhibit "A", said point being the intersection of the Northerly boundary of that certain piece or parcel of land acquired by the United States from Serralles, Barasorda and Belaval with the ordinary high tide line of the Caribbean Sea;

Thence along said Northerly line of said land of the United States North $83^{\circ} 43'$ West a distance of 1,630 feet more or less to point No. 9-5 which is a fence post; thence North $83^{\circ} 43'$ West a distance of 2,353.32 feet to point No. 9-4 which is a tree; thence North $83^{\circ} 37'$ West a distance of 1227.27 feet to point No. 9-3 which is a ceiba tree; thence North $83^{\circ} 26'$ West a distance of 370.93 feet to point No. 9-26 which is the point of beginning.

Following is a boundary description of the above described land:

RURAL: Parcel of land in the Ward of Los Machos, Municipality of Ceiba, Puerto Rico, containing an area of 601.63 acres, more or less, equivalent to 619.51 cuerdas, equivalent to 243 hectares, 49 ares and 18 centiares, bounded on the North by the Southerly bank of the Majagua River which bounds that portion of the property of the Succession of Louis de Celis from which a part of this area is segregated; on the East by the Caribbean Sea; on the South by land of the United States acquired from Serralles, Barasorda and Belaval and on the West, by the Easterly line of the railroad right of way of the Fajardo Development Company.

And I do declare said lands to be taken under authority of the aforesaid acts of Congress; that the use to which said lands are to be put is the same as authorized by said acts; and that the estate hereby taken in said lands for the public use aforesaid is in fee simple, subject to the right

✓ of the owners thereof, to remove buildings and improvements located on the lands hereby taken, within a period of time designated by the court.

And I, James Forrestal, Acting Secretary of the Navy, acting for and in behalf of the Secretary of the Navy, do hereby state that the sum of money estimated by me to be just compensation for all of said lands and appurtenances thereunto belonging, is One Hundred Seventeen Thousand, Two Hundred Eighty-Nine and 30/100 Dollars (\$117,289.30), which said sum having been appropriated by Congress is hereby deposited into the registry of the court for the use and benefit of the persons entitled thereto, and that the names and addresses of the owners of said property or interest therein and the amount of just compensation for said lands which are hereby taken are shown on Schedule "A" which is attached hereto and made a part of this declaration of taking.

I am of the opinion that the ultimate award for the taking of said lands, will be within the limits prescribed by Congress.

IN WITNESS WHEREOF, the petitioner, by and through the said James Forrestal, Acting Secretary of the Navy, acting for and in behalf of the Secretary of the Navy, has caused this declaration of taking to be signed in its name and has caused the seal of the Navy Department to be affixed hereto on the 6th day of July, 1942, in the city of Washington, District of Columbia.

Seal of Navy Department

UNITED STATES OF AMERICA

By (s) James Forrestal
James Forrestal
Acting Secretary of the Navy

(SEAL)

SCHEDULE "A"

The names and addresses of the persons having title to or other interest in the lands described in the within declaration of taking, and the amounts estimated to be fair compensation for each respective ownership, are as follows:

Name and Address	Parcel Number	Acres	Estimated Fair Compensation
------------------	---------------	-------	-----------------------------

Jorge Bird Arias, Manuela Cerra Becerril, his wife, Kings Court, Santurce, Puerto Rico;	72	260.73	\$ 52,619.80
---	----	--------	--------------

Ignacio Bird Acosta,
Ithaca, New York;

Rafael Bird Acosta,
Pajardo, Puerto Rico;

Concepcion Bird Acosta,
Canovanas, Puerto Rico.

LEASES:

no { The Fajardo Sugar Company
of Puerto Rico,
Fajardo, Puerto Rico;
(Expired but uncanceled lease)

no { Rafael Calderon Rivera,
Ceiba, Puerto Rico;
(Expired but uncanceled lease)

Fajardo Sugar Growers Associations,
Fajardo, Puerto Rico.

* Fajardo Sugar Growers Association, (crops) 460.00
Fajardo, Puerto Rico.

Ramon Colon, 65.00
Ceiba, Puerto Rico.

Viro Fonseca, 32.00
Ceiba, Puerto Rico.

Juana Colon, 36.00
Ceiba, Puerto Rico.

Name and Address	Parcel Number	Area	Estimated Fair Compensation
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(Parcel Number 72 continued)

Francisco Delgado, Ceiba, Puerto Rico.			27.00
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Atanacio Garcia, Ceiba, Puerto Rico.			72.00
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Gil Garcia Santos, Ceiba, Puerto Rico.			55.00
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DESCRIPTION

LEGAL: Parcel of land shown as Parcel No. 72 on Exhibit "A" situated in the town of Las Cañas, Municipality of Ceiba, Puerto Rico, consisting of 200.73 acres, equivalent to 200.46 cuerdas, equivalent to 105 hectares, 31 acres, 36 centiares, bounded on the North by the Santa Lucia estate of Jorge Bird Arias; on the East by Port Pedro, one of the Caribbean Sea; on the South by land of the United States acquired from Terralies, Sarasores and Belaval, and on the West by the railroad right of way of the Fajardo Development Company which separates this parcel from the balance of the principal estate from which it is segregated.

Jorge Bird Arias, Manuela Cerra Secorill, his wife, Kings Court, Santurce, Puerto Rico.	73	200.46	45,183.40
---	----	--------	-----------

LESSORS:

Fajardo Sugar Growers
Association,
Fajardo, Puerto Rico.
(Expired but uncanceled lease)

Fajardo Sugar Growers
Association,
Fajardo, Puerto Rico.

LITIGANTS:

Action brought by
Carlota Alquier viuda de
Sells Aguilera, and
Elena de Celis Alquier viuda de
Matta, against

Name and Address	Parcel Number	Acres	Estimated Fair Compensation
------------------	---------------	-------	-----------------------------

(Parcel Number 73 continued)

Ramon Mendez Cardona,
Carlota de Celis Alquier,
his wife,
to annul a foreclosure
proceeding brought by said
defendants.

MENTION:

Made by Registrar of Property of the
obligations assumed by Luis de Celis
to pay one fourth of the debts of the
partnership had between himself and
Ramon Mendez Cardona; one fourth of a
certain life annuity to Carlota Alquier
viuda de Celis; and the sum of \$1,250
to the Pajardo Sugar Company, represen-
ting one fourth of obligation incurred
by Ramon Mendez Cardona; and to pay
\$5,000 to the minors Celis Cabanillas.

Pajardo Sugar Growers Association, Pajardo, Puerto Rico.	4,340.40
Esteban Carmona, Ceiba, Puerto Rico.	30.00
Miguel Figueras, Ceiba, Puerto Rico.	36.00
Blas Medina, Ceiba, Puerto Rico.	200.00
Ventura Garcia, Ceiba, Puerto Rico.	27.00
Juan Rosales, Ceiba, Puerto Rico.	45.00
Lope Fonseca, Ceiba, Puerto Rico.	30.00

DESCRIPTION

RURAL: Parcel of land shown as Parcel No. 73 on
Exhibit "A", situated in the Ward of Los Machos,

Name and Address	Parcel Number	Acres	Estimated Fair Compensation
------------------	---------------	-------	-----------------------------

(Parcel Number 73 continued)

Municipality of Ceiba, Puerto Rico, consisting of 258.28 acres, equivalent to 266.55 cuerdas, equivalent to 104 hectares, 76 ares, 48 centiares, bounded on the North by the Providencia Estate of Providencia Perez Vda. de la Celis; on the East by the Caribbean Sea; on the South by Port Medio Mundo of the Caribbean Sea and the Tolonesa Estate of Jorge Bird Arias et al., and on the West by the railroad right of way of the Fajardo Development Company, which divides this parcel from the principal estate from which it is segregated.

Maria Providencia Perez Sanchez, viuda de Celis, Fajardo, Puerto Rico.

74

32.07 \$ 10,576.40

INTEREST:

Fajardo Sugar Growers Association, Fajardo, Puerto Rico.

HOLDERS OF A PORTUQUE

Fajardo Sugar Company of Porto Rico, Fajardo, Puerto Rico;

Federal Land Bank of Baltimore, San Juan, Puerto Rico;

Land Bank Commissioner, Ceiba, Puerto Rico.

THIS PARCELS:

Same as listed above under Parcel Number 73.

MENTION:

Same as listed above under Parcel Number 73.

Fajardo Sugar Growers Associations, Fajardo, Puerto Rico.

263.90

Eulogio Vazquez, Ceiba, Puerto Rico.

150.00

Name and Address

Parcel
number

Acres

Estimated Fair
Compensation

(Parcel Number 74 continued)

RURAL: Parcel of land shown as Parcel No. 74 on Exhibit "A", situated in the Ward of Los Machos, Municipality of Ceiba, Puerto Rico, consisting of 32.07 acres, equivalent to 34.30 cuerdas, equivalent to 33 hectares, 21 ares, 19 centiares, bounded on the North by the Southerly bank of the Majagua River which separates this parcel from the principal estate from which it is segregated; on the East by the Majagua Bay of the Caribbean Sea; on the South by the Santa Maria estate of Jorge Bird Arias, and on the West by the railroad right of way of the Fajardo Development Company which separates this parcel from the principal estate from which it is segregated.

People of Puerto Rico,)	For any and all right, title and interest in and to the lands herein taken or appurtenances thereunto belonging.	1.00
San Juan, Puerto Rico.)		

Total - -

501.68

117,889.30

ATTEST:

A true Copy

LESLIE G. DONOHUE,

Clerk U. S. Dist. Court

By

Sally A. Malinani
Deputy



DEPARTMENT OF THE NAVY

COMMANDER NAVAL AIR FORCE
UNITED STATES ATLANTIC FLEET
NORFOLK, VIRGINIA 23511-5188

TWK 10/28
File - RRDs Gen Cor
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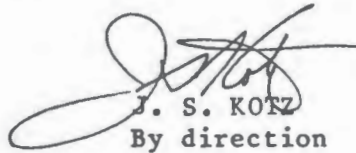
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SECOND ENDORSEMENT on USNAVSTA Roosevelt Roads ltr 11011 Ser 183-2/2383
of 18 Aug 86

From: Commander Naval Air Force, U.S. Atlantic Fleet
To: Commander, Atlantic Division, Naval Facilities Engineering Command
Via: Commander in Chief U.S. Atlantic Fleet

Subj: EXCESS LAND FOR VIEQUES LANDFILL

1. Forwarded, recommending approval.


J. S. KOTZ
By direction

Copy to:
COMNAVFORCARIB
USNAVSTA Roosevelt Roads
LANTNAVFACENGCOM (Advance)

2011

DETERMINATION OF SURPLUS (Excess Real Property and Related Personal Property)				1. GSA REGIONAL OFFICE Atlanta - 4		2. GSA CONTROL NUMBER 4-N-PR-453-C																									
				3. HOLDING AGENCY NUMBER NAVSTA - 4500		4. TYPE OF APPROVAL REQUIRED <input type="checkbox"/> A. REGIONAL ONLY <input checked="" type="checkbox"/> B. CENTRAL OFFICE & REGIONAL																									
				5. DATE REPORT OF EXCESS ACCEPTED November 30, 1987																											
6. PROPERTY IDENTIFICATION (P) Eastern Maneuver Area Puerto Ferro Ward Vieques Island, Puerto Rico				7. TYPE OF DETERMINATION (Check one) <input checked="" type="checkbox"/> A. ORIGINAL <input type="checkbox"/> B. CORRECTION (If B, C, or D are checked, explain details in Block 11.) <input type="checkbox"/> C. RESCISSION <input type="checkbox"/> D. OTHER																											
8. PROPERTY DETERMINED SURPLUS				9. PROTECTION AND MAINTENANCE OF PROPERTY																											
A. BUILDINGS, STRUCTURES, UTILITIES, AND MISC. FACILITIES				A. ANNUAL COST \$ -0-																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>USE</th> <th>NO. BUILDINGS</th> <th>AREA (Sq. Ft.)</th> <th>ACQUISITION COST</th> </tr> </thead> <tbody> <tr> <td>(1) OFFICE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(2) STORAGE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(3) OTHER (Specify)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(4) TOTAL SPACE</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="3">(5) TOTAL ACQUISITION COST.....</td> <td>\$</td> </tr> </tbody> </table>				USE	NO. BUILDINGS	AREA (Sq. Ft.)	ACQUISITION COST	(1) OFFICE				(2) STORAGE				(3) OTHER (Specify)				(4) TOTAL SPACE				(5) TOTAL ACQUISITION COST.....			\$	B. DATE GSA LIABLE FOR P&M COST			
USE	NO. BUILDINGS	AREA (Sq. Ft.)	ACQUISITION COST																												
(1) OFFICE																															
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(5) TOTAL ACQUISITION COST.....			\$																												
				10. FINDINGS (Check appropriate statements & explain in Block 11)																											
				<input type="checkbox"/> A. THE EXCESS PROPERTY HAS BEEN SCREENED AGAINST THE KNOWN DEFENSE AND CIVILIAN REQUIREMENTS OF THE FEDERAL GOVERNMENT. IT IS NOT REQUIRED FOR THE NEEDS AND RESPONSIBILITIES OF ALL FEDERAL AGENCIES AND IS DETERMINED TO BE SURPLUS PROPERTY.																											
				<input checked="" type="checkbox"/> B. THE REQUIREMENT FOR SCREENING OF THE EXCESS PROPERTY HAS BEEN WAIVED AND IT IS DETERMINED TO BE SURPLUS PROPERTY.																											
				<input type="checkbox"/> C. THE PROPERTY IS SUBJECT TO DISPOSAL BY THE HOLDING AGENCY.																											
				<input checked="" type="checkbox"/> D. THE PROPERTY IS SUBJECT TO DISPOSAL BY THE GENERAL SERVICES ADMINISTRATION.																											
B. LAND																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>GOVT'S INTEREST</th> <th>ANNUAL RENTAL</th> <th>AREA (Acres)</th> <th>ACQUISITION COST</th> </tr> </thead> <tbody> <tr> <td>(1) FEE</td> <td></td> <td>25±</td> <td>\$ 950.00</td> </tr> <tr> <td>(2) LEASED</td> <td>\$</td> <td></td> <td></td> </tr> <tr> <td>(3) OTHER (Specify)</td> <td></td> <td></td> <td>\$</td> </tr> <tr> <td>(4) TOTAL LAND</td> <td>\$</td> <td>25±</td> <td>\$ 950.00</td> </tr> </tbody> </table>				GOVT'S INTEREST	ANNUAL RENTAL	AREA (Acres)	ACQUISITION COST	(1) FEE		25±	\$ 950.00	(2) LEASED	\$			(3) OTHER (Specify)			\$	(4) TOTAL LAND	\$	25±	\$ 950.00								
GOVT'S INTEREST	ANNUAL RENTAL	AREA (Acres)	ACQUISITION COST																												
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(2) LEASED	\$																														
(3) OTHER (Specify)			\$																												
(4) TOTAL LAND	\$	25±	\$ 950.00																												
C. RELATED PERSONAL PROPERTY (Acquisition Cost) \$																															
D. GRAND TOTAL ACQUISITION COST OF PROPERTY DETERMINED SURPLUS (Lines A(5), B(4) and C)				\$ 950.00																											
11. REMARKS (Use reverse if more space is required)																															

No screening of the property to determine possible Federal need was conducted, having been determined by the Regional Administrator, Region IV, Pursuant to HB, Excess and Surplus Real Property, Section 2, Paragraph 64c (PBS P 4000.1), that such screening would serve no useful purpose.

This Determination of Surplus is limited solely to the Department of Health and Human Services per Central Office memo dated July 27, 1987. This property is made available to HHS for health purposes under Statute 40 U.S.C. 484 (k)(1)(B).

R/A - Mr. Eugene Jicha
Department of the Navy
Naval Facilities Engineering
Command
Norfolk, VA 23511-6287

CENTRAL OFFICE APPROVAL (When required)		REGIONAL OFFICE APPROVAL	
SIGNATURE AND TITLE	DATE	SIGNATURE AND TITLE	DATE
		PATRICIA E. BAILEY, DIRECTOR Office of Real Estate Sales(4DR)	12/8/87
GENERAL SERVICES ADMINISTRATION		GSA FORM 1452 (REV. 4-74)	

PROPOSED SANITARY LANDFILL

VIEQUES, P.R.
13 MARCH 1986



TITLE REPORT

RE: SANTA MARIA GRAZING AND
MARTINEAU TRACTS, VIEQUES, P.R.
1,829 Acres of DOD EXCESS LANDS
WITHOUT IMPROVEMENTS
HOLDING AGENCY NO. CARIB-183

This report is submitted pursuant to Section 101-47,202 of the Federal Property Management Regulations.

1. DESCRIPTION OF THE EXCESS PROPERTY:

The excess property to which this report relates comprises portions of U. S. Government-owned, U. S. Navy-controlled, unimproved lands known as the Santa Maria Grazing and Martineau Tracts, situate, respectively, in Wards Puerto Ferro and Puerto Real, Municipality of Vieques, Puerto Rico. The property consists of a combined total of 1,829 acres of land, more or less, shown as Parcels "A" and "B" on Real Estate Disposal Map, Drawing No. FEC 1,041,669 attached hereto as Exhibit "A". A metes and bounds description of the boundaries of Parcel "A" (Santa Maria Grazing Area) of the boundaries of Parcel "B" (Martineau Tract) are attached as Exhibit "B".

2. DATE TITLE VESTED IN THE UNITED STATES:

The land areas comprising the excess property are tracts or portions of tracts acquired by the United States in fee simple as follows:

<u>PARCEL NO.</u>	<u>TRACT NO.</u>	<u>ACREAGE</u>	<u>METHOD & DATE OF ACQUISITION</u>
"A" (SANTA MARIA GRAZING AREA)	A	683.00=	Portion of Parcel "A" in Declaration of Taking in condemnation proceedings No. 2714 entitled "U.S. of A. Vs. 7936 - 6 acres of land in the Municipality of Vieques, and Eastern Sugar Associates, et al, defendants, filed 26 June 1942 in the U.S. District Court of P. R.
"B" (MARTI- NEAU TRACT)	1,2,3 & 6	460.65 <i>NON EXCESS</i>	Portion of Tract 1 and Tracts 2, 3 and 6 in Declaration of Taking in condemnation proceedings No. 2300 entitled "U.S. of A. Vs 10,208.85 acres of land, in Wards Mosquito, Florida, Dove, etc., Municipality of Vieques, P. R., and Juan Angel Tio, et al, defendants", filed November 12, 1941 in the U. S. District Court for Puerto Rico.

<u>PARCEL NO.</u>	<u>TRACT NO.</u>	<u>ACREAGE</u>	<u>METHOD & DATE OF ACQUISITION</u>
"B"	26 thru 58	672.58	Portions of Parcels 26 and 27 and Parcels 28 through 58 in Declaration of Taking in Condemnation Proceedings No. 2487 Civil, entitled "U.S. of A. Vs. 686.96 acres of land in Wards Florida and Puerto Real, Municipality of Vieques, P. R., Josefina Bermudez et al, defendants", filed April 6, 1942 in the U.S. District Court for Puerto Rico.
"B"	Un-numbered	12.77	Declaration of Taking in Condemnation Proceedings No. 3211 Civil, entitled "U.S. of A. vs. 12.77 acres of land in the Ward of Puerto Real, Municipality of Vieques, P. R., Eulogio Cruz Velaz, et al, defendants", filed January 5, 1943 in the U. S. District Court for Puerto Rico.

3. RESERVATIONS OR RESTRICTIONS ON TITLE:

The estate taken in the above condemnation proceedings was the fee simple title subject to, as to Civil No. 2714, "the right of the owners or lessees of the lands taken to retain their base production (sugar quota); as to Civil No. 2300, (1) "reserving to the public the right to use existing public roads traversing the land until such time as title to adjoining lands to which such roads give access are acquired by the United States", (2) "reserving a right in Juan Angel Tio to harvest and remove from the land taken the growing sugar cane and other crops belonging to him" and (3) "reserving a right in said Juan Angel Tio to use the sugar factory and other necessary facilities now on the land to process the growing sugar cane now on the land into sugar and molasses"; as to Civil No. 2487, (1) "reserving to the owners of all buildings situated on the land taken, the right to remove such buildings within such time as may be designated by the Court", and (2) "reserving to the owners thereof, the right of base production (sugar quota)"; and as to civil No. 3211, "reserving to the owners thereof the right to remove such buildings as are situated on the lands taken, within such time as may be designated by the Court".

The reservations numbered one (1) in Civil No. 2300 became extinguished upon acquisition by the United States, under Condemnation Proceedings No. 2487, of title "to adjoining lands to which existing public roads gave access". The remaining reservations under Civil No. 2300 as well as the reservations under Civil No. 2714 and Civil No. 2487 were personal and became of no force or effect upon completion of the 1942 sugar cane harvest season or removal of buildings by tenants.

No other reservation, exception, condition or restriction on the Government's title to the excess property appear from the record.

4. ACTIONS AFFECTING TITLE:

Except for encumbrances resulting from the use grant mentioned in paragraph 6 below, there is no record of any action, thing or circumstance that occurred from the date of acquisition of the property by the United States to the date of this report, which in any way affected or may have affected the right, title and interest of the United States in and to the excess real property.

5. CIVIL AND CRIMINAL JURISDICTION:

The United States exercises exclusive civil jurisdiction over 460.65 acres within Parcel "B" of the excess property (Tracts 1, 2, 3 and 6 - in Schedule B-LAND-SF 113b), pursuant to the Act of Congress approved October 9, 1940 (54 Stat. 1083). The Commonwealth of Puerto Rico exercises exclusive civil jurisdiction over Parcel "A" (Santa Maria Grazing Area), the requirements of 54 Stat. 1083 not having been pursued as regards this parcel.

6. USE GRANTS:

In the exercise of control and jurisdiction over the excess property the Department of the Navy has made outgrants for use of portions of the excess property as follows:

a. Fifty (50) year easement, forty (40) feet wide, to the Puerto Rico Water Resources Authority for the construction, maintenance and operation of an overhead electric power transmission line over 2.71 acres of land within Parcel "A" (Santa Maria Grazing Area); and

b. Fifty (50) year easement, 40 feet wide, to the Puerto Rico Water Resources Authority for the construction, maintenance and operation of an overhead electric power transmission line over 3.50 acres of land within Parcel "B" (Martineau Tract).

The above described easements were jointly granted by indenture number NOy(R) 63040 dated 12 September 1952, a copy of which is attached to this report as Exhibit "C".

7. TITLE EVIDENCE:

There are attached as Exhibit "D", the following reproductions of title documents relating to the lands covered by this report of excess:

(Tract numbers correspond to the tracts listed in Column (b) of Schedule "B"-LAND, SF 118).

<u>TRACT NO.</u>	<u>GOVT-OWNED ACREAGE</u>	<u>EXCESS ACREAGE</u>	<u>TITLE DOCUMENTS</u>
"A"	7,936.60	683.0	D/T, Petition for Cond. judgment and Attorney General's final title opinion dtd April 21, 1948 in Civil No. 2714, forwarded with Exhibit "D" of title report under Report of Excess Carib-184.
"B"	10,208.85	460.63 (Tracts 1, 2, 3 & 6)	D/T, Petition for Cond., Judgment and Attorney General final title opinion dtd Sept. 30, 1942 in Civil No. 2300, forwarded with Exhibit "D" of title report under Report of Excess CARIB-184.
"C"	686.96	672.58 (Tracts 26 thru 58)	a) Declaration of Taking, Petition for Cond. and judgment in Cond. Proc. No. 2487 Civil. b) Attorney General Final Title Opinion dtd June 17, 1944.
"D"	12.77	12.77	a) Declaration of Taking, Petition for Cond. and judgment in Cond. Proc. No. 3211 Civil. b) Attorney General Final Title Opinion dtd April 24, 1943.

This report is dated: 16 FEB 1968

Prepared by: *Carlos F. Pesquera*
 CARLOS F. PESQUERA
 Real Estate DIVISION Director
 Caribbean Division, Naval Facilities
 Engineering Command
 Department of the Navy

METES & BOUNDS DESCRIPTION

MARTINEAU TRACT, VIEQUES, P. R.
PARCEL "B" OF REPORT OF EXCESS NO. CARIB - 183

Reference: Drawing No. FEC 1,041,669, entitled "VIEQUES ISLAND - REAL ESTATE DISPOSAL MAP"

All that tract of land situate in the Wards of Florida and Puerto Real, Municipality of Vieques, Puerto Rico, bounded on the north by lands of the Puerto Rico Ports Authority (Vieques Airport Site) and the waters of the Atlantic Ocean, on the east by lands formerly of Emilia Mourraille, Esteban Diaz, Eleuterio Ortiz, Eastern Sugar Associates and Pedro Felix, on the south by lands formerly of the Estate of Juana Marin, Eleuterio Ortiz, Pedro Felix, Jovito Gonzalez, the Estate of Monserrate Ortiz, Evaristo Morales, Antonio Rivera and Antonio Torres, and on the west by lands formerly of Antonio Rivera and Antonio Torres, Merigilda Torres and other lands of the United States of America.

The tract is more particularly described by metes and bounds, as follows:

"Beginning at Point 29-1, said point being a wooden hub in the ordinary high tide line of the Atlantic Ocean at the north-easterly corner of the tract;

thence, S 03°-11'-40"E, 5341.02 feet to Point 30-3;
thence, S 88°-41'-06"E, 1004.83 feet to Point 30-4;
thence, S 18°-43'-20"W, 1764.04 feet to Point 185-1;
thence, N 86°-15'-54"W, 652.87 feet to Point 30-5;
thence, N 86°-15'-54"W, 380.25 feet to Point 30-6;
thence, N 00°-56'-56"E, 207.69 feet to Point 30-7;
thence, N 87°-47'-36"W, 1501.92 feet to Point 30-8;
thence, S 02°-15'-49"E, 86.08 feet to Point 31-1;
thence, S 04°-41'-39"W, 750.79 feet to Point 31-4;
thence, S 88°-17'-33"E, 69.40 feet to Point 32-1;
thence, S 02°-10'-41"W, 707.54 feet to Point 32-2;
thence, S 03°-25'-28"E, 680.80 feet to Point 35-3;
thence, N 86°-10'-09"W, 651.08 feet to Point 35-4;
thence, S 01°-29'-16"W, 435.94 feet to Point 36-3;
thence, N 88°-43'-15"W, 623.55 feet to Point 36-4;
thence, Southerly, 420+ feet to Point 9b;
thence, N 87°-08' W, 1689.09 feet to Point 8b;
thence, S 11°-59' W, 330.90 feet to Point 7b;
thence, N 85°-15' W, 143.47 feet to Point 6b;
thence, Northerly, 450+ feet to Point 37-10;
which is a concrete post;
thence, N 87°-16'-54"W, 454.61 feet to Point 37-11;
thence, N 88°-54'-38"W, 289.27 feet to Point 37-12;

thence, N 88°-40'-28"W, 179.40 feet to Point 37-13;
 thence, N 00°-53'-38"E, 538.26 feet to Point 37-14;
 thence, N 88°-05'-29"W, 227.59 feet to Point 40-7;
 thence, N 06°-27' E, 208.84 feet to Point 40-6;
 thence, N 18°-20'-47"W, 135.21 feet to Point 52-4;
 thence, N 88°-31'-03"W, 732.80 feet to Point 52-5;
 which is an iron railroad rail;
 thence, N 00°-52'-38"E, 361.86 feet to Point 52-6,
 which is an iron railroad rail
 thence, N 84°-58'-58"W, 199.75 feet to Point 54-7,
 which is an iron railroad rail
 thence, N 00°-47'-13"W, 322.55 feet to Point 54-1;
 thence, N 03°-54" E, 4020 feet to Point 85;
 which is a point on the south boundary of the
 Vieques Airport Site with Coordinates Y=110,002.57,
 X = 826,154.42; thence along said boundary
 S 30°-19'-14"E, 68.14 feet to Point 84;
 thence, S 48°-19'-59"E, 29.92 feet to Point 83;
 thence, S 66°-05'-34"E, 47.45 feet to Point 82;
 thence, S 62°-48'-30"E, 294.19 feet to Point 81;
 thence, S 67°-44'-03"E, 66.88 feet to Point 80;
 thence, S 73°-08'-45"E, 51.01 feet to Point 79;
 thence, S 81°-18'-17"E, 63.39 feet to Point 78;
 thence, S 84°-38'-41"E, 40.29 feet to Point 77;
 thence, N 84°-35'-45"E, 42.79 feet to Point 76;
 thence, N 72°-36'-51"E, 263.49 feet to Point 75;
 thence, N 66°-16'-03"E, 41.00 feet to Point 74;
 thence, N 66°-27'-04"E, 67.23 feet to Point 73;
 thence, N 56°-42'-03"E, 850.61 feet to Point 72;
 thence, N 48°-07'-46"E, 109.45 feet to Point 71;
 thence, N 38°-01'-38"E, 44.33 feet to Point 70;
 thence, N 29°-03'-29"E, 704.04 feet to Point 69;
 thence, N 28°-14'-00"E, 265.17 feet to Point 68;
 thence, N 76°-38'-30"E, 1068.37 feet to Point 101;
 thence, N 13°-21'-30"W, 858.92 feet to Point I-62;
 being a point on the ordinary high tide line of the
 Atlantic Ocean;
 thence, easterly along the ordinary high tide line
 of the Atlantic Ocean to Point 29-1, the point of
 beginning

Bearings are referred to the Lambert Projection for
 Puerto Rico.

The area enclosed within the above described perimeter
 is 1,146 acres, more or less.

METES & BOUNDS DESCRIPTION

SANTA MARIA GRAZING AREA, VIEQUES, PUERTO RICO
PARCEL "A" OF REPORT OF EXCESS NO. CARIB-183

Reference: Drawing No. FEC 1,041,669 entitled "VIEQUES ISLAND - REAL ESTATE DISPOSAL MAP"

All that tract of land situate in the Ward of Puerto Ferro, Municipality of Vieques, Puerto Rico, bounded on the north by other lands of the United States of America and by the waters of the Atlantic Ocean; on the east and south by other lands of the United States of America; and on the west by State Road 997, lands of private owners and of the Municipality of Vieques.

The tract is more particularly described, by metes and bounds as follows:

"Beginning at Point E-36 on the easterly line of Puerto Ferro Road;

thence, N 2°-01'E, 299.89 meters to Point E-37;
thence, N63°-04'W, 7.57 meters to Point E-38;
thence, N 2°-51'E, 77.64 meters to Point E-39;
thence, N 1°-34'E, 118.65 meters to Point E-40;
thence, N 0°-28'E, 226.00 meters to Point E-41;
thence, N 1°-00'E, 99.13 meters to Point E-42;
thence, N 4°-53'E, 38.48 meters to Point E-43;
thence, N51°-01'E, 8.44 meters to Point E-44;
thence, N35°-03'E, 114.29 meters to Point E-45;
thence, N26°-38'W, 45.74 meters to Point E-46;
thence, N56°-07'W, 48.10 meters to Point E-47;
thence, N72°-08'W, 33.48 meters to Point E-48;
thence, N51°-47'W, 47.26 meters to Point E-49;
thence, N40°-29'W, 29.17 meters to Point E-50;
thence, S84°-21'W, 26.08 meters to Point E-51;

thence, northerly, easterly and southerly around the edge of unimproved and uncultivated Navy lands and southerly following the course of an intermittent stream 1341 meters, more or less, to a point near the southwesterly corner of the area;

thence, S 75°E, 213 meters, more or less, to a point at the intersection of the northern side of an unimproved road traversing the U. S. Naval Maneuver Area, Vieques, and the centerline of the Santa Maria Creek;

thence, northerly, 1524 meters, more or less, following the centerline of said creek to a point on the ordinary high tide line of the Atlantic Ocean;

thence, easterly along said high tide line 1000 meters, more or less, to a point due north from a curve on Campana Road; thence, Due South to the south side of Campana Road; thence, south-easterly along the southwesterly side of Campana Road 700 meters, more or less, to a point;

thence, Due South, 1400 meters, more or less, to a point on an unimproved road traversing the Naval Maneuver Area;

thence, northwesterly along said road 1200 meters, more or less, to a point;

thence, S 37°W 1000 meters, more or less, to a point E-32 on the easterly line of State Road 997;
thence, along the easterly line of said road, N 19°39'W, 85.00 meters to Point E-33
thence, along the easterly line of said road, N39°-28'W, 163.14 meters to Point E-34
thence, along the easterly line of said road, N 80°-17'W, 187.67 meters to Point E-35
thence, along the easterly line of said road, N 76° 46'W, 35.72 meters to Point E-36,
the point of beginning.

Distances are expressed in meters. Bearings are referred to the Magnetic North, with a declination of 6°25' West of North.

The area enclosed within the above described perimeter is 683 acres, more or less.



Office of the Attorney General
Washington, D.C.

April 21, 1948

APR 22 48 PM

SO4 22 65

Y + D



Honorable John L. Sullivan
Secretary of the Navy
Washington, D. C.

RECEIVED
NAVY DEPARTMENT
EXOS-ROUTING SECTION

My dear Mr. Secretary:

I have examined the title evidence and transcript of record in the condemnation proceeding entitled United States of America v. 7,936.6 Acres of land, more or less, situate in the Municipality of Vieques, Puerto Rico; Eastern Sugar Associates, et al., Civil No. 2714, in connection with the establishment of Fleet Operating Facilities and Marine Corps Operating Area, Vieques, Roosevelt Road, Puerto Rico.

The title report, prepared by Walter L. Newsom, Jr., Special Assistant to the Attorney General, is dated May 8, 1942, and is in satisfactory form.

I find that the condemnation proceeding has been regularly conducted, and that the fee-simple title to the land has vested in the United States of America, as stated in the opinion of this Department dated July 9, 1942.

I further find that on December 29, 1942, the court entered a judgment in the case in the amount of \$361,500.00. The sum of \$235,460.00 was deposited into the registry of the court as estimated compensation for the land at the time of the filing of the declaration of taking. The deficiency in the amount of \$126,041.00, with interest thereon in the amount of \$18,585.00, or a total sum of \$144,626.00, was deposited into the registry of the court on December 4, 1944.

From the above judgment, entered December 29, 1942, the landowners perfected an appeal to the Circuit Court of Appeals, and on June 26, 1944, the Circuit Court of Appeals for the First Circuit handed down an opinion reversing the opinion of the trial court and remanded the case for a re-trial. On January 24, 1947, upon re-trial of the case, the trial court entered a judgment in the amount of \$380,000.00 in favor of the condemnees. No appeal was taken from the above judgment by either the landowners or the Government, and the additional deficiency of \$18,500.00, with interest thereon, as set out in said judgment, being the total sum of \$23,745.88, was deposited into the registry of the court on

C40-20-VI-5

*Posted
Off
File
JLB.*

March 20, 1947. The above-mentioned judgment is now satisfied and the acquisition of the 7,936.6 acres, which constitute all of the lands in the proceeding, is completed.

Enclosed are the title report, the certificate of the clerk of the court, dated December 4, 1944, for the sum of \$144,626.00, the certificate of the clerk of the court, dated March 20, 1947, for the sum of \$23,745.88, the certificate of the clerk of the court, dated April 28, 1947, for \$538.72, the certificate of the clerk of the court, dated June 4, 1947, for the sum of \$20.69.

All Encl. Rec'd.
EX-105-Returning Section
There are also enclosed certified copies of the motion, dated March 22, 1948 and the order decreeing satisfaction of the judgment, entered on January 24, 1947.

Sincerely yours,

Tom C. Clark

Attorney General

SO4 22 65

METERS AND BOUNDS DESCRIPTION

SANTA MARIA TRACT, VIEQUES, PUERTO RICO, TO BE DEDICATED AS CITY DUMP

The tract of land situate in the ward of Santa Maria, municipality of Vieques, Puerto Rico, bounded on the north by Campana Road and other lands of the government of the United States of America; on the south by lands of the United States of America; on the east of Campana Road and other lands of the United States of America, and on the west by lands of the Commonwealth of Puerto Rico.

The tract is more particularly discribed, by meters and bounds as follows:

Beginning of point 1E on the north line of Campana Road;

thence, S50°-14'-52" E	82.594 meters to Point	2E
thence, S36°-46'-10" E	91.882 meters to Point	3E
thence, S06°-54'-35" E	14.462 meters to Point	4E
thence, S02°-49'-03" E	55.540 meters to Point	5E
thence, S10°-12'-48" E	32.710 meters to Point	6E
thence, S30°-52'-21" E	22.061 meters to Point	7E
thence, S42°-25'-13" E	17.893 meters to Point	8E
thence, S47°-09'-31" E	68.668 meters to Point	9E
thence, S46°-40'-47" E	198.810 meters to Point	10E
thence, S40°-26'-20" W	43.598 meters to Point	9C
thence, S43°-28'-49" W	59.679 meters to Point	10C
thence, S82°-26'-43" W	74.215 meters to Point	11C
thence, S79°-42'-20" W	110.037 meters to Point	12C
thence, S56°-16'-19" W	72.500 meters to Point	13C
thence, S28°-50'-19" W	61.850 meters to Point	14C
thence, S09°-02'-55" W	36.870 meters to Point	15C
thence, N00°-02'-13" E	151.030 meters to Point	113A

Encl. (2)

METERS AND BOUNDS DESCRIPTION

Page #2

SANTA MARIA TRACT, VIEQUES, PUERTO
RICO, TO DEDICATED AS CITY DUMP

Distance are expressed in meters.

Bearings are referred to the magnetic north.

The area enclosed within the above described perimeter is

104,813.6000 sq. mts. equivalents to 26.67405 cords

equivalents to 25.9063 acres.

Appendix F

From the VNTR Environmental Baseline Survey, Appendix B

Real Property Records

Transfer of Land and Facilities to the Department of Interior

Naval Facilities Engineering Command (NAVFAC). 2003. *Environmental Baseline Survey, Vieques Naval Training Range Vieques island, Puerto Rico*. April 1.



DEPARTMENT OF THE NAVY

U S NAVAL STATION ROOSEVELT ROADS

PSC 1008 BOX 3001

FPO AA 34051-3001

11011

Ser N46T16/ 0080

23 Jan 03

From: Commanding Officer, U.S. Naval Station, Roosevelt Roads
To: Commander, Atlantic Division, Naval Facilities Engineering
Command (OPBR-SF)

Via: (1) Commander, Navy Region Southeast, Jacksonville (N46F)
(2) Commander, U.S. Atlantic Fleet (N4682)

Subj: REPORT OF EXCESS REAL PROPERTY OF VIEQUES EAST, P.R.

Ref: (a) Public Law 106.398, as amended by Public Law 107-107

Encl: (1) Report of Excess Real Property (Standard Forms 118,
118a, and 118b)

1. Per reference (a), enclosure (1) is forwarded for the transfer of the land and facilities on the eastern portion of the Island of Vieques to the Department of Interior.

2. The Environmental Assessment and consultation with the Puerto Rico Historic Preservation Office have been completed. The Environmental Baseline Study will be completed in March 2003.

3. Point of contact is Mrs. Carmen D. Perea, Realty Specialist, Technical Management Division, Public Works Department, at DSN 831-3048 or commercial (787) 865-4152 extension 448.

JOHN R. WARNECKE

Copy to: (advance)
LANTNAVFACENGCOM (OPBR-SF)

BUILDINGS, STRUCTURES, UTILITIES, AND MISCELLANEOUS FACILITIES

1. HOLDING AGENCY NO.

2. PAGE 1 OF 7 PAGES
OF THIS SCHEDULE
GSA CONTROL NO. (GSA
use only)

SCHEDULE A - SUPPLEMENT TO REPORT OF EXCESS REAL PROPERTY

3. ANNUAL RENTAL

LINE NO. (a)	HOLDING AGENCY BUILDING NO. (b)	DESCRIPTION (c)	COST (d)	OUTSIDE DIMENSIONS (e)	FLOOR AREA (sf. ft.) (f) *	NO. OF FLOORS (g) *	CLEAR HEAD-ROOM (h) *	FLOOR LOAD RANGE (i) * PRN	RESTRICTION ON USE OR TRANSFER OF GOVERNMENT INTEREST (j)
1	200	ADMIN BLDG (1964)	9023	96 X 20	9023	1	(a)	202838	
2	243	MAINTENANCE BLDG (1962)	4424	83 x 73	6059	1	(b)	202780	
3	255	GARBAGE HOUSE (1962)	400	25 x 16	400	1	(c)	202781	
4	300	SEA CADET BLDG. (1964)	10740	100 x 40	4000	1	(a)	202842	
5	302	MAINTENANCE AUTO					(c)		
6	303	STGE/O/STORMC (1964)	16568	200 x 40	8000	1	(b)	202805	
7	304	TOOL STGE AGRO-VIEQUES INC. (1973)	513	15 x 15	225	1	(b)	202891	
8	401	PRNG BLDG (1958)	1886	45 x 25	1886	1	(a)	202784	
9	1005	GEN. BLDG. AND REPAIR SHOP F (1971)	105875	48 x 20	960	1	(c)	202575	
10	1100	SENTRY BOOTH (1960)	450	7 x 5	35	1	(c)	202789	
11	1102	PWR PLNT/VIDEO CAMERA SHACK (1965)	7500	8 x 8	64	1	(c)	202626	
12	1123	WATER POINT (1959)	7450	70 x 20	1400	1	(c)	202777	
13	1170	SW PUMP HOUSE					(c)		
14	1966	LIGHTHOUSE (VIEQUES) (1903)	35000	53 x 35	1855	1	(c)	202987	
15	2061	SEC. POLICE GUARDHOUSE (1981)	3600	25 x 13	325	1	(c)	203016	
16	4507	FIRE TRUCK SHED/SHELTER (1984)	4500	28 x 19	532	1	(c)	203264	
17	4508	FIRE EXTINGUISHER STGE SHLTR (1985)	300	4 x 4	16	1	(b)	203265	
18	4510	TRANSP/DSPTCH OFF BY B302 (1975)	8000	32 x 16	512	1	(a)	203268	
19	4512	WEATHER SHLTR BY HELO-FIELD (1984)	700	15 x 10	150	1	(c)	203270	
20	4523	MICRO-WAVE BLDG (1987)	11563	13 x 11	143	1	(c)	203480	
21	4524	DINING FACILITY (1989)	35700	48 x 24	1152	1	(c)	203485	
22	4525	GALLEY/DINING FACILITY (1989)	33600	48 x 24	1152	1	(c)	203486	
23	4526	BEQ (1989)	33600	48 x 24	1152	1	(c)	203487	
24	4527	BEQ (1989)	33600	48 x 24	1152	1	(c)	203488	
25	4528	BEQ (1989)	33600	48 x 24	1152	1	(c)	203489	
26	4529	BEQ (1989)	35700	48 x 24	1152	1	(c)	203484	
27	4530	BEQ (CB'S) (1989)	5280	48 x 24	1152	1	(c)	202775	
28	4531	EOD BOQ (1989)	187164	98 x 30	2789	1	(c)	203746	
29	4532	PW VEHICLE MAINT SHOP (1999)	585000		4000	1	(c)	203829	
30	4533	BATH HOUSE (TEMP) (2000)					(c)		
31	4534	DOG KENNEL (TEMP) (2001)					(c)		
32	4535	NEX/MWR HUT (TEMP) (2000)					(c)		
33	4536	MINI-MART HUT (TEMP) (2000)					(c)		
SUB-TOTAL (BUILDINGS)			\$1,211,736						

*Prefix figures with symbols to denote type of space, as follows: (a) for office; (b) for storage; (c) for other

2. PAGE 2 OF 7 PAGES
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3. ANNUAL RENTAL

*Prefix figures with symbols to denote type of space, as follows: (a) for office; (b) for storage; (c) for other

BUILDINGS, STRUCTURES, UTILITIES, AND MISCELLANEOUS FACILITIES

1. HOLDING AGENCY NO.

2. PAGE 3 OF 7 PAGES
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SCHEDULE A - SUPPLEMENT TO REPORT OF EXCESS REAL PROPERTY

3. ANNUAL RENTAL

LINE NO. (a)	HOLDING AGENCY BUILDING NO. (b)	DESCRIPTION (c)	COST (d)	OUTSIDE DIMENSIONS (e)	FLOOR AREA (sf. ft.) (f)*	NO. OF FLOORS (g)*	CLEAR HEAD-ROOM (h)*	FLOOR LOAD RANGE (i)* PRN	RESTRICTION ON USE OR TRANSFER OF GOVERNMENT INTEREST (j)
1	637	RNGE WRNG LGHT TWR EL FARO (1986)	39350				(c)	203229	
2	638	RNGE WRNG LGHT CERRO MUERTO (1986)	39350				(c)	203230	
3	751	DOUBLE WATER STORAGE TANK (1968)	5920				(b)	202874	
4	752	WATER STORAGE TANK (1968)	5920				(b)	202875	
5	753	WATER STORAGE TANK (1968)	5920				(b)	202876	
6	754	WATER STORAGE TANK (1968)	5920				(b)	202877	
7	755	WATER STORAGE TANK (1968)	5920				(b)	202878	
8	1001	BEACON LIGHT AT OP #2 (1972)	2035				(c)	202504	
9	1002	H LANDING PAD CERRO MATIAS (1970)	5555	20 x 50	873 sy		(c)	202506	
10	1003	WEAPONS RANGE TWR C.MATIAS (1971)	908	10 x 10	100	1	(c)	202516	
11	1004	WIND DIRCT IND ATOP OP-1 (1971)	594				(c)	202517	
12	1006	POTABLE WATER STORAGE TANK (1971)	3750				(b)	202582	
13	1013	POTABLE WATER STORAGE TANK (1969)	2000				(b)	202616	
14	1017	RADAR TRCK ANTNA ATOP ROC (1977)	2999				(c)	202620	
15	1018	M.W. ANTENNA ATOP ROC (1976)	1000				(c)	202621	
16	1024	CISTERN UNDRGRND PTO FERRO (1903)	32904				(c)	202988	
17	1025	OLD NORTH SMALL CRFT RAMP (1978)	2000	40 x 16			(c)	203520	
18	1026	OLD SOUTH SMALL CRFT RAMP (1978)	2000	40 x 16	640		(c)	203521	
19	1028	LANDING CRAFT RAMP (NORTH) (1985)	159306	165 x 50	8250		(c)	203318	
20	1029	LANDING CRAFT RAMP (SOUTH) (1985)	60000	110 x 20	2200		(c)	203316	
21	1035	CISTERN UNDERGRND PTO FERRO (1913)	2500		3740		(c)	202989	
22	1103	MARINES BUNKER OP7 (1970)	2000				(c)	202627	
23	1126	WATER TANK AT WATER POINT (1961)	2500				(c)	202869	
24	1130	WATER TANK AT WATER POINT (1967)	2500				(c)	202870	
25	1131	WATER TANK AT WATER POINT (1967)	2500				(c)	202871	
26	1132	GRND LVL POTABL WATER TANK (1975)	46982				(c)	202897	
27	1133	GRND LVL POTABL WATER TANK (1975)	46982				(c)	202896	
28	1150	CAMP GARCIA RUNWAY (1948)	106772				(c)	203070	
29	1151	CAMP GARCIA TAXIWAY (1948)	43364				(c)	203071	
30	4501	WIND SOCH/HELO-LANDING FIELD (1983)	1825				(c)	203241	
31	4504	UNLEADED GAS TANK (ELEV) (1975)	8000				(c)	203254	
SUB-TOTAL (STRUCTURES)			\$649,276						

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BUILDINGS, STRUCTURES, UTILITIES, AND MISCELLANEOUS FACILITIES

1. HOLDING AGENCY NO.

2. PAGE 4 OF 7 PAGES
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SCHEDULE A - SUPPLEMENT TO REPORT OF EXCESS REAL PROPERTY

3. ANNUAL RENTAL

LINE NO. (a)	HOLDING AGENCY BUILDING NO. (b)	DESCRIPTION (c)	COST (d)	OUTSIDE DIMENSIONS (e)	FLOOR AREA (sf. ft.) (f)*	NO. OF FLOORS (g)*	CLEAR HEAD-ROOM (h)*	FLOOR LOAD RANGE (l)* PSF	RESTRICTION ON USE OR TRANSFER OF GOVERNMENT INTEREST (j)
32	4505	MOTOR GAS TANK (ELEV) (1983)	3500				(c)	203255	
33	4506	DIESEL FUEL STGE TANK (ELEV) (1983)	4800				(b)	203256	
34	4514	NONPOTBL TNK BY LATR B#4513 (1985)	850				(c)	203272	
35	4516	VEHICULAR BRIDGE (1980)	37500		63 sy		(c)	203276	
36	4517	VEHICULAR BRIDGES (1986)	47500		100 sy		(c)	203277	
37	4539	SENTRY HOUSE (TEMP) (2001)					(c)		
38	4540	OBSERVATION TOWER (TEMP) (2000)					(c)		
39	4541	OBSERVATION TOWER (TEMP) (2000)					(c)		
40	4542	OBSERVATION TOWER (TEMP) (2000)					(c)		
41	4543	OBSERVATION TOWER (TEMP) (2000)					(c)		
42	4544	OBSERVATION TOWER (TEMP) (2000)					(c)		
43	4701	WATER TANK BY BOATHOUSE C.M. (1985)	1500				(c)	203321	
44	4707	LUBRICAND STGE (DIESEL) (1986)	31784				(b)	203353	
45	4709	STRAFF TGET EAST RNGE (1981)	1157				(c)	203214	
46	4710	BOMB DISPOSAL MAG (1988)	68500	9 x 7	68		(c)	203523	
47	4715	SMOKE-SOUND ROCKT SMLTR MAG (1988)	68500	9 x 7	68		(c)	203522	
48	200A	COMMEMORATIVE MARKER (1964)	75				(c)	202810	
49	RNGA1	SMALL ARMS RANGE (1956)	3290				(c)	202815	
50	RNGA2	SMALL ARMS RANGE (1956)	3159				(c)	202816	
51	RNGA3	SMALL ARMS MG (1956)	2700				(c)	202817	
52	RNGA4	HAND GRENADE RANGE (1956)	272				(c)	202818	
53	RNGA4A	RIFLE GRENADE (1956)	380				(c)	202819	
54	RNGA5	RANGE 3.5 ROCKET (1956)	1890				(c)	202820	
55	S201A	FLAGPOLE (1962)	60				(c)	202807	
56		OPEN STORAGE ENG LOT (1958)	250	400 X 300	13333 sy		(c)	202811	
57		FLAGPOLE(4 TOTAL) (1970)	300				(c)	202802	
58		HELO-PAD (1950)	1000		1111 sy		(c)	203245	
59		BASKETBALL COURT BY B#300 (1983)	2500				(c)	203248	
60		SIDEWALKS CONCRETE (1958)	3432	1489 X 3	496 sy		(c)	202812	
SUB-TOTAL (STRUCTURES)			\$284,899						

*Prefix figures with symbols to denote type of space, as follows: (a) for office; (b) for storage; (c) for other

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3. ANNUAL RENTAL

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3. ANNUAL RENTAL

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*Prefix figures with symbols to denote type of space, as follows: (a) for office; (b) for storage; (c) for other

LAND

1. HOLDING AGENCY NO.

2. PAGE 7 OF 7 PAGES
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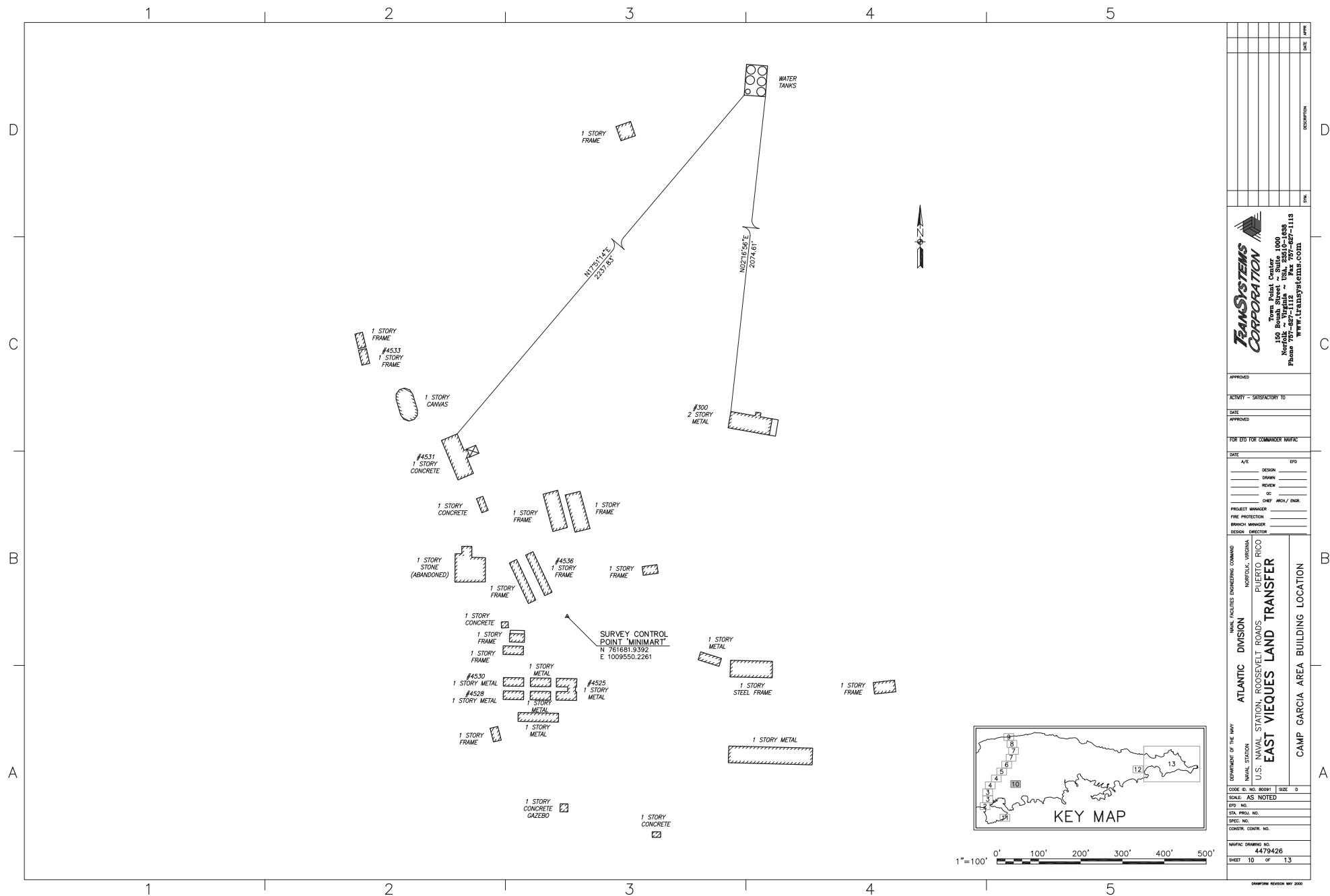
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SCHEDULE D - SUPPLEMENT TO REPORT OF EXCESS REAL PROPERTY

LINE NO.	TRACT NO.	NAME OF FORMER OWNER OR LESSOR AND ADDRESS	TRACT ACQUIRED (Acres or sq. ft.) (d)	EXCESS REAL PROPERTY			TYPE OF CONSTRUCTION (h)	RESTRICTIONS ON USE OR TRANSFER OF GOVERNMENT INTEREST (i)
				ACRES OR SQUARE FEET (e)	COST (f)*	ANNUAL RENT (g)		
1	1	Civil Case 2300, Parcel 5 Recorded in Vol 28, Page165-184, Property #1021, Humacao, PR Property Registry on 19 May 1942	3,207.8	3,207.8	\$119,170			Easement No. EO-0575 PRASA Water Transmission Main (.09 acre) Exp. 8 Feb 2040
2	5	Civil Case 2714 Recorded in Vol 29, Page 61, Property #1043, Humacao, PR Property Registry on 22 Jul 1942	7,936.6	6,590.708 7	\$350,692			License No. LIC-O-0880 Puerto Rico National Guard Bldg. 401 Exp. 31 Aug 2004
3	9A	Civil Case 6108 Recorded in Vol 32, Page 157, Property # 1173, Humacao, PR Property Registry on 1 Mar 1951	4,057.718	4,057.718	\$486,521			Use Agreement No. AO-0106 U.S. Coast Guard Navigational Aid (.01 acre) Exp. Indefinite
4	9B	Civil Case 6108 Recorded in Vol 32, Page 151, Property #1172, Humacao, PR Property Registry on 1 Mar 1951	282.11	254.1563	\$ 30,473			
TOTAL			15,484.228	14,110.383	\$986,856			

NOTE: *Proration of original acquisition cost.



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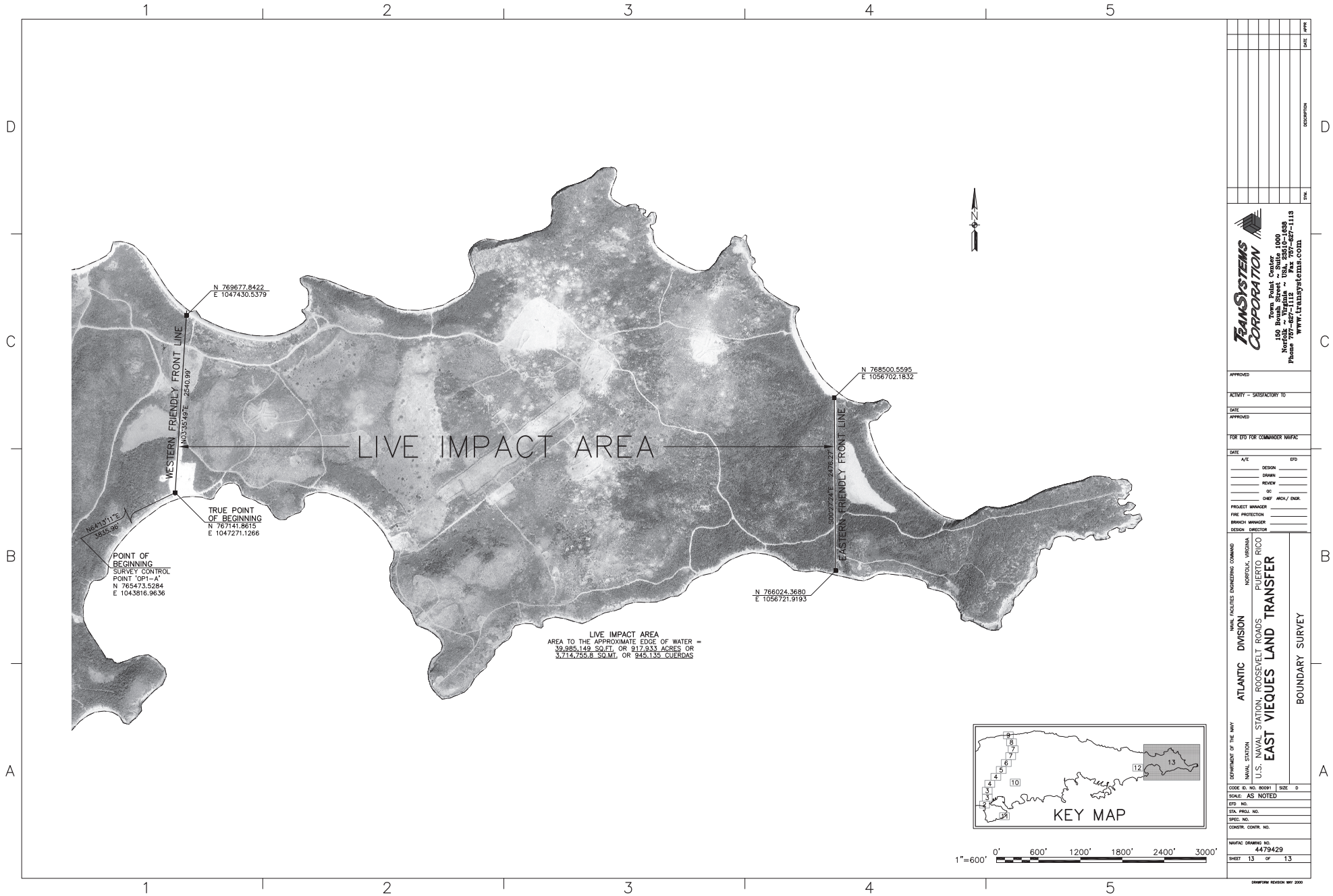
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COMPTON REVISION MAY 2011



Appendix G

Responses to Regulator Comments

**Responses to EPA Comments on the
Draft Preliminary Assessment Report for Per- and Polyfluoroalkyl Substances
Dated May 2019**

**Atlantic Fleet Weapons Training Area – Vieques
Former Naval Ammunition Support Detachment and
Former Vieques Naval Training Range
Vieques, Puerto Rico**

General Navy Observation and Response

A number of the comments refer to the presence of a structure (e.g., helicopter hangar), use of a particular chemical or substance (e.g., hydraulic fluid, automobile wax), or performance of a particular activity (e.g., storage) as rationale for including a site/area for further investigation solely because of its potential PFAS association. While it is true that PFAS have been used in a wide variety of commercial and industrial products since the 1950s, their presence is essentially ubiquitous where humans are present and conducting such everyday activities as wearing clothing, popping popcorn, cooking with a frying pan, and waxing a car. The objective of the PFAS PA is not to evaluate the types of contributions from unregulated activities that occur throughout the country regardless of location. The objective of the PFAS PA is to determine, based on review of historical records, interviews, and observations, whether past military training and support activities resulted in known or likely PFAS releases that warrant further investigation via an SI. To that end, the Navy has identified sites where the lines of evidence suggest a PFAS release occurred or potentially occurred and proposes those sites be carried forward to an SI because if there has been a release(s), those sites are the ones most likely to demonstrate PFAS contamination. On December 5, 2019, representatives from the Navy, EPA, PRDNER, and USFWS (Vieques Technical Subcommittee) met to discuss the Draft PFAS PA Report, with emphasis on sites recommended to be carried forward to an SI. The Subcommittee reached consensus to perform the SI on those sites recommended by the Navy in the Draft PA Report and four additional sites discussed and concurred upon during the meeting, as detailed in the following responses to comments. Following completion of the sampling and evaluation of the results, the Navy and regulatory agencies will have the opportunity to reconvene and discuss whether any additional characterization is warranted, including whether any additional sites/areas should be considered.

GENERAL COMMENTS

1. Provide CD ROM with all the references cited in PA report before the next sub-committee meeting.

Navy Response: References have been placed on a CD and provided to Technical Subcommittee representatives.

2. The Draft PA report is missing a series of the key elements¹ that should be provided in the SAP-SI such as:
 - Insufficient site descriptions, operational histories, and waste characteristics for each site.
 - Site type (hangar, fire station, testing area, etc.);
 - Site status (active or inactive);
 - Years of operation and summary of operational history;
 - Latitude and longitude coordinates;
 - Physical characteristics (dimensions, size, structures, buildings, borders, drainage patterns, etc.);
 - Identification of nearby drinking water wells, Residences, and other sensitive receptors (schools, daycares, hospitals, etc.);
 - Sensitive environments (wetlands, etc.);
 - Current and former owners and site activities;

¹ EPA PA Guidance, September 1991 and EPA guidance document, Federal Facilities Remedial Preliminary Assessment Summary Guide, dated July 21, 2005 (the PA Summary Guide).

- Types of waste generated, quantities, etc.; and,
 - Past regulatory activities, removals, investigations and analytical data presented in tabular form and discussed.
- Information about migration pathways and exposure pathways for each site:

Groundwater Use and Characteristics

- Identification of private wells within a 4-mile radius (locations, distance, populations served, etc.);
- Distance to the nearest drinking water well;

Surface Water Use and Characteristics

- Site locations with respect to floodplains and information on the flood frequency;
- Identification of surface water bodies within 15 downstream miles (types, characteristics, etc.)
 - include ephemeral streams;
- Identification of drinking water intakes within 15 downstream miles (locations, populations served, etc.);
- Identification of fisheries, wetlands, and other sensitive environments within 15 downstream miles;
- Distance to the nearest surface water body (including ephemeral streams);

Soil Exposure Pathways

- Number of people living within a 2000-foot radius and number of workers within a 200-foot radius;
- Identification of schools and/or day care facilities within a 200-foot radius;
- Populations within a 1-mile radius;
- Identification of terrestrial sensitive environments;

Air Exposure Pathways

- Populations within a 4-mile radius; and
- Identification of acreage of wetlands and sensitive environments within a 4-mile radius.

Note: the above list of example deficiencies is not exhaustive.

Navy Response: As noted in the referenced guidance, “The PA approach described in this guidance is generally applicable to a wide variety of sites. However, because of the variability among sites, the amount of information available, and the level of investigative effort required, it is not possible to provide guidance that is equally applicable to all sites.”

Further, as described in the referenced guidance, the amount of information generated via the PA, coupled with the SI, is intended to help determine whether sites warranted listing on the NPL. As acknowledged by EPA Specific Comment 17, this PA is exclusively for PFAS. Vieques is already on the NPL, so the purpose of the PFAS PA was to determine whether a release(s) of PFAS may have occurred warranting further investigation. As such, with respect to the “key elements” listed above, the information available and relevant/applicable to the PFAS PA objective has already been included in the PA Report.

SPECIFIC COMMENTS

EPA Specific Comments are provided in the comment section of the pdf file containing the DRAFT PA PFAS Report dated May 2109. Note that there are comments in the text as well as in the references.

Executive Summary

1. Page iii, second set of bullets, last bullet: Expand acronym AOCs.

Navy Response: Edit made as requested. The revision has also been made to the Spanish version of the Executive Summary.

2. Page iii, paragraph following second set of bullets: Update “10 sites” to include additional sites recommended for further evaluation.

Navy Response: Please see the General Navy Observation and Response at the beginning of this response-to-comment document as well as responses to comments on specific additional sites recommended for inclusion. The referenced paragraph has been revised to include the four additional sites concurred upon at the December 5, 2019 Technical Subcommittee meeting for inclusion in the SI.

3. Page iv, last paragraph, first sentence “No groundwater on the island...”: Revise to: “Site reconnaissance of the sites/areas indicates the potential for exposure to PFAS containing media, if present, is low to non-existent; therefore, a rapid response is not necessary. Groundwater is not known to be used as a source of drinking water on the island. Public water wells were closed in 19XX (specify year). It is not known, if there are private wells used for drinking water purposes. However, if PFAS are detected in the groundwater at the SI stage; then, efforts to identify private drinking water wells will be made within a 4-mile radius* of the detected contamination as per EPA PA/SI guidances. The SI will evaluate if there is a release of PFAS to the environment that may pose a threat to human health and environment.”

*The 4-mile radius terminology can be changed to reflect that 'efforts will be made as per EPA PA/SI guidances'.

Navy Response: Current information from an island resident indicates there are no private water supply wells on Vieques. The first sentence of the last paragraph of the Executive Summary has been revised to read: “Site reconnaissance of the sites/areas indicates the potential for exposure to PFAS containing media, if present, is low to non-existent; therefore, a rapid response is not necessary. Groundwater is not used as a source of public drinking water on the island and there are no known private wells used for drinking water purposes. Groundwater withdrawal on Vieques for public potable use (formerly conducted via 14 public water supply wells located in the alluvial coastal plain near Esperanza and potentially 6 water supply wells located in the northwestern portion of Vieques) was discontinued in 1978. Since that time, potable water for the island population has been supplied via a pipeline from the Rio Blanco filtration plant in eastern Puerto Rico. However, if PFAS are detected in groundwater at the SI stage, then efforts to confirm the absence of private drinking water wells will be made within a 4-mile radius of the detected contamination, per Environmental Protection Agency (EPA) PA/SI guidance. The SI will evaluate if there has been a release of PFAS to the environment that may pose a threat to human health and/or the environment.”

This revision has also been made to the Spanish version of the Executive Summary and the second, third, and fourth sentences of the revised text above has been added to the first paragraph of Section 2.2.3.

4. Page iv, last paragraph, second sentence: Are you planning to do a full human health risk assessment at the SI stage?

Navy Response: The last two sentences of the last paragraph have been revised to read: “If PFAS are detected during the PA, the SI will include a human health risk screening for groundwater, soil, surface water, and/or sediment (as applicable based on media detections). Additionally, if formal, regulatory-based ecological screening values (ESVs) become available for PFAS compounds, the SI will include an ecological risk screening for surface soil, surface water, and/or sediment (as applicable based on media detections).”

This revision has also been made to the Spanish version of the Executive Summary.

5. Page iv, last paragraph, second sentence. Expand acronym ESVs.

Navy Response: Please see response to EPA Specific Comment 4.

Resumen Ejecutivo

6. Page v, second set of bullets, last bullet: Expand acronym AOCs.

Navy Response: Please see the response to EPA Specific Comment 1.

7. Page v, paragraph beginning “Se evaluaron 56 sitios...”, second sentence. Update “10 sitios” to include additional sites recommended for further evaluation.

Navy Response: Please see the response to EPA Specific Comment 2.

8. Page vi, last paragraph, first sentence “El agua...” Revise to reflect changes made to the English version.

Navy Response: Please see the response to EPA Specific Comment 3.

9. Page vi, last paragraph, second sentence. Expand acronym ESVs.

Navy Response: Please see the response to EPA Specific Comment 4.

Executive Summary Figures

10. Update Figures ES-2, ES-3, 2-2, and 2-3 to include additional potential PFAS sites discussed herein. Where in these maps are OP-1 and Cerro Matias?

Navy Response: Regarding additional potential PFAS sites, please see the response to EPA Specific Comment 2. OP-1 and Cerro Matias have been added to Figures ES-3 and 2-3 as they are within the Former VNTR.

Table of Contents

11. Revise Section 4 to include additional sites recommended for further evaluation.

Navy Response: Please see the response to EPA Specific Comment 2.

12. Appendix A includes documents associated with real estate, deeds, and property transfer. See pages 60, 65-215 of this PDF file. These documents should be in an appendix of its own. Revise report to:

- 1) Add an appendix for the documents mentioned above.
- 2) Update the references associated with the deeds throughout the report.

Navy Response: The requested revisions have been made.

Section 1

13. Section 1.2.2, second paragraph, “potential for release”: Foaming of the runway was an aviation safety practice that consisted of spreading a layer of fire suppression foam on an airport runway/taxiway to prevent fires prior to an emergency landing. Foaming activities could impact surface water drainage areas.

Revise text to include the potential for foaming activity to have occurred prior to any potential emergency landing even if a release or fire did not actually occur.

Navy Response: The requested information has been added to the second paragraph with respect to potential use at Navy installations in general. It also has been added that there is no report of this use on Vieques and that, in general, the Navy kept records of when this was performed and no such records were found for Vieques.

14. Section 1.2.2, second paragraph, “fire training areas”: Add “firefighting demonstrations in runways/taxiways” as shown in page 254 of this pdf file. This should be also added in the facility background, see comment in page 20 of this pdf file.

Navy Response: The phrase “fire training areas” has been revised to read “firefighting training/demonstration areas.” However, the referenced demonstration was in 1967, 2 years before the MILSPEC specifying use of AFFF. The following has been added at the end of the second paragraph: “A fire and rescue demonstration was performed by the crash crew at the Garcia airfield in 1967, 2 years before the military specification (MILSPEC) specifying use of PFAS in AFFF was issued and there were no reports of its use during the demonstration. In fact, if foam had been used in the demonstration, it would almost surely have been protein foam. Therefore, this activity was unlikely to be a source of a PFAS release.” This information has also been added to Section 2.1.

15. Section 1.2.2, third paragraph, “AFFF in Firefighting Training and Fire Suppression”:

- 1) The following information from <https://apps.Dtic.mil/dtic/tr/fulltext/u2/a429103.pdf> shows that the Navy started using fluorinated foam in 1967.

"In 1967, two basic types of foam were available in the US Navy. One type was termed protein foam since it consisted of a hydrolyzed protein base; the other type was called "Light Water," and was composed of a mixture of fluorinated surfactants. Both types came in concentrated liquid form, and six parts of concentrate were mixed with ninety-four parts of water to create firefighting foam. The two types of foam were fully compatible, but the Navy planned to gradually phase out the protein foam since it had a limited shelf life. The Light Water concentrate could be stored indefinitely before use.

2) Beginning in the early 1960s, Navy Research Lab conducted research on fire suppression that eventually led to one of the most far-reaching benefits to worldwide aviation safety -- the development of aqueous film-forming foam (AFFF). From: <https://www.nrl.navy.mil/accomplishments/materials/aqueous-film-foam>."

It is stated in page 254 of this pdf file that Camp Garcia Airfield was used for fire firefighting demonstrations. AFFF could have been used in those drills to demonstrate the AFFF effectiveness in suppressing fires quickly and thoroughly. Airfield/helopads have to be included in the study since AFFF may have been used in the base since 1967.

Revise text to include the potential use of PFAS by the Navy as early as 1967.

Navy Response: 3M corporation first tested PFAS-containing AFFF in the early 1960s and began marketing it to the Navy and others in 1964. However, the Navy did not patent it until 1966 and the MILSPEC requiring its use was not issued until 1969. While use within the Navy between 1964 and 1969 is possible, its use on Vieques during the referenced 1967 firefighting demonstration is not likely; however, based on the potential use of AFFF at the Garcia Airfield (not based on records, but based on use within the Navy at other installations), this site will be retained for further investigation under an SI, as concurred upon at the December 5, 2019, Technical Subcommittee Meeting.

16. Section 1.4, second sentence: Eliminate sentence or revise to reflect that:

-Groundwater is not known to be used as a potable source on Vieques. If PFAS are detected in samples collected as part of this initiative; then, efforts will be made to identify private drinking water (DW) wells.

-add that there are no active public DW wells (if you want specify and/or Navy DW wells).

Navy Response: The second sentence has been updated to be consistent with the response to EPA Specific Comment 3.

17. Section 2.1 Facility Background: This is an initiative exclusively for PFAS.

Add a section under 'facility background' to describe AFFF usage in Vieques based on historical knowledge, interviews, and SOPs or directives provided by the Navy to the bases. Include information about how and where was the AFFF used, handled, managed, mixed, procedures on dilution, where was the product diluted, applications, storage, trucks flushing activities, fire & rescue demonstrations, firefighting stations, etc.

AFFF SOPs play an important role in allowing us to understand how the material was used and what can be expected in terms of environmental release. For example, the following information provides a description of how the 5-gallon, described in Mr. Ortiz interview in Appendix D, container of fluorinated surfactants concentrate was used on a Navy vessel in 1967. Info obtained from:

<https://apps.dtic.mil/dtic/tr/fulltext/u2/a429103.pdf>

"... several means of generating and delivering firefighting foam. The simplest piece of equipment used was a mechanical-foam nozzle with a pickup tube.

A firefighting hose was connected to the nozzle, and the pickup tube was inserted into a five-gallon foam concentrate container. When the hose was charged, water flowing through the nozzle would create suction, drawing the concentrate up into a mixing chamber in the nozzle. The mixing chamber was sized to mix air, water, and foam concentrate together in the proper proportions to create firefighting foam. The mechanical-foam nozzle would empty a five-gallon foam container in about ninety seconds, producing approximately 660 gallons of foam in that time. Additional concentrate cans could be placed nearby if more foam was required."

The document goes on into describing usage of 50-gallon containers in a navy vessel

...small proportionates had fifty-gallon liquid concentrate tanks, while the larger stations had 300-gallon tanks. The high-capacity foam stations serving the hangar and flight decks could produce 5,700 gallons per minute of foam at maximum output. The 300-gallon foam concentrate tank would be emptied in just over five minutes at this rate. Sailors would have to continuously empty five-gallon cans of concentrate into the liquid foam tank (at the rate of fifty-seven gallons per minute) to keep each high-capacity foam station operating."

A 5-gallon AFFF concentrate produced 660 gallons of foam sprayed in 90 seconds. 300-gallon tanks produced 5700 gallons per min of foam.

Navy Response: Section 2.1 has been updated to describe potential AFFF usage in Vieques.

18. Section 2.2.3, first paragraph, first sentence "two aquifers" –

-Include a figure(s) showing the location of these two aquifers. Reference the figure(s) to the text.

-Page 226 of this pdf file shows a series of fresh water wells. Where they owned by the Navy? Are they included in this section?

Navy Response: A figure has been added showing the two aquifers and the first sentence of Section 2.2.3 has been revised to reference the figure. Locations of the 14 former potable water supply wells in the Valle de Esperanza aquifer found in the historical records evaluation have been included on the figure. No record has been found regarding the well use or ownership of the wells on pdf page 226. Nonetheless, there is a 1989 USGS report that indicates a well field was developed in the Valle de Resolución aquifer in the 1960s and the map on pdf page 226 is dated 1969, so it is possible those are the wells referred to in the USGS report. Those six wells have been included in the figure and associated text has been added to Section 2.2.3.

Drinking water (DW) wells.

-Indicate if there were DW wells drilled outside of the two aquifers.

-If positive; provide information about the aquifer; number of wells, ownership, amount of GPD withdrawn from aquifer, year of well(s) decommission.

-Include historical figure for the well(s), if any. Reference figure to the text.

Navy Response: Please see the response above. Any information found potentially relevant to the PFAS PA has been added to Section 2.2.3.

Non-potable wells.

-Include historical information of non-potable wells used by the Navy throughout the island.

-Provide information about the aquifer, number of wells, ownership, amount of GPD withdrawn from aquifer, year of well(s) decommission.

-Indicate if there is any active non-potable well. If positive; then, include well information described above.

-Include figure for non-potable wells, if any. Reference figure to the text.

Navy Response: Please see the response above. Any information found potentially relevant to the PFAS PA has been added to Section 2.2.3.

19. Section 2.2.3, first paragraph, first sentence, "Valle de Resolución" -Provide a brief description of the Valle de Resolución aquifer.

-Include historical information about drinking water (DW) wells drilled in Valle de Resolución aquifer; such as: number of DW wells; well ownership, amount of GPD withdrawn from the aquifer; year when the wells were taken out of service.

--Provide a historical figure (such as the one in page 226 of this pdf file) showing the locations of the Navy and PRASA wells. Reference figure to the text.

Navy Response: As available and relevant to the PFAS PA, this information has been added to Section 2.2.3.

20. Section 2.2.3, first paragraph, sentence “The Valle de Esperanza aquifer formerly supplied water to Camp Garcia and Observation Post 1.” - Provide historical figure showing location of these wells in Valle Esperanza aquifer. Reference figure to the text.

-Revise text to include number of DW water wells, ownership, amount of GPD pumped from this aquifer, year of well decommission if different than the 2000 mentioned in the last sentence.

Navy Response: As available and relevant to the PFAS PA, this information has been added to Section 2.2.3.

21. Section 2.2.3, first paragraph, sentence “the Puerto Rico Aqueduct and Sewer Authority (PRASA) managed a series of 16 wells, which pumped approximately 450,000 gallons of water per day. These wells were taken out of service in 1978.” The previous statement indicates that water supply to OP 1 and Camp Garcia was from the Valle Esperanza Aquifer.

Clarify if the PRASA wells were also drilled in the same aquifer.

-Include a historical figure showing the location of the PRASA wells.

Navy Response: As available and relevant to the PFAS PA, this information has been added to Section 2.2.3.

22. Section 2.3, “migration pathways”: Add a footnote to indicate that the migration and exposure pathways will be fully evaluated at the SI stage.

Navy Response: The following sentence has been added after the first sentence in Section 2.3: “For sites recommended for further investigation in this PA Report, potential migration and exposure pathways, as well as receptors, will be considered during preparation of the PFAS SI Sampling and Analysis Plan (SAP) to ensure appropriate evaluation during the PFAS SI.”

23. Section 2.3.1, second paragraph, “migration pathways”: Please clarify that every site recommended for further investigation in this PA report will have its own migration pathway evaluation in the SAP-SI.

Navy Response: Please see the response to EPA Specific Comment 22.

24. Section 2.3.1, second bullet “inland lagoons, and offshore areas”: Add ephemeral streams.

Navy Response: The previous (first) bullet has been revised to read: “Direct release of PFAS to surface and/or subsurface soil” and the second bullet has been revised to read: “Overland flow of PFAS in runoff via drainage ditches/ephemeral streams to downgradient terrestrial . . .”

25. Section 2.3.1, fourth bullet “lagoons and offshore areas”: Add ephemeral streams.

Navy Response: There is no significant groundwater discharge to streams in Vieques, which is why streams on the island are ephemeral rather than perennial. Ephemeral streams flow as a result of precipitation rather than baseflow provided by groundwater discharge.

26. Section 2.3.2, second paragraph, “Groundwater”: It is known that nowadays there are no Navy or public drinking water wells on the island. For PA/SI purposes, the groundwater pathway also evaluates potential contamination to private wells that may be used for drinking water (DW) purposes. EPA guidance on this issue is to identify drinking water wells at the PA stage. However, on this instance, my recommendation is: 1) to sample all of the sites identified in this report as needing further investigation; 2) wait for the analytical results; 3) determine which sites are contaminated with PFAS; 4) Identify DW wells around sites contaminated with PFAS following the Target Distance Limits* (TDL) in the EPA PA/SI guidance for groundwater targets. Use a phase approach begin to identify private water wells by conducting a door to door survey within a 1-mile radius from the site; 5) collect samples on private wells, if any, to determine if a rapid response is needed; 6) if PFAS are detected in those wells; then, expand the door to door survey; 6) follow up based on findings. This information has to be included in the PA report.

Revise the groundwater exposure scenario, accordingly.

Please note that, regardless of the current use of groundwater on Vieques, groundwater evaluation within the potential source areas and offsite (not only downgradient) will be necessary at sites where there is a potential PFAS release. The ongoing evaluation should ensure that no degradation of the groundwater quality has resulted from PFAS.

Navy Response: Please see the response to EPA Specific Comment 3. Additionally, the following has been added to the end of the “Groundwater” subsection of Section 2.3.2: “If PFAS are detected in groundwater at the SI stage, then efforts to confirm the absence of private drinking water wells will be made within a 4-mile radius of the detected contamination, per EPA PA/SI guidance.”

27. Section 2.3.2, Soil, “Residents, construction workers, maintenance/industrial workers, and trespassers”: Add recreational users and visitors.

Navy Response: Recreational users and visitors have been added as requested.

28. Section 2.3.2, Sediment, “Current and future maintenance workers and trespassers/visitors and future residents and construction workers”: add recreational users.

Navy Response: Recreational users have been added as requested.

29. Section 2.3.2, Surface Water, “Current and future maintenance workers and trespassers/visitors and future residents and construction workers”: add recreational users.

Navy Response: Recreational users have been added as requested.

30. Section 2.3.2, Biota, “fish and fowl tissue.”: PFAS constituents have been found in birds/eggs, cow meat, and milk. The latter is of particular note should cattle graze at the sites. Land crabbing is a known issue at some sites.

Include: birds eggs, crabs, cow meat, and milk.

Navy Response: Please note the referenced sentence simply provides examples of potential biota. As noted in the response to EPA Specific Comment 22, for the sites that will be carried through to the SI, the SI SAP, which will be submitted for regulatory review, will consider specific potential exposure and receptor scenarios.

31. Section 2.3.3, “Ecological Receptors”: PFAS can be highly mobile in the environment, especially in groundwater and surface water.

In order to fully evaluate any potential onsite and offsite ecological receptors and migration pathways, the SAP SI and SI should describe details of the ecological receptors and types of exposure pathways and assess secondary areas potentially beyond the site-specific boundaries relevant to every site.

*Secondary areas potentially beyond the site-specific boundaries have to be evaluated at each site proposed for further investigation on all pathways as per EPA's PA/SI guidance.

Navy Response: Comment noted. Please see the response to EPA Specific Comment 22.

32. Section 2.3.3, second paragraph, “birds and mammals”: Add land crabs.

Navy Response: Please note the referenced sentence simply provides examples of potential upper trophic level receptors. As noted in the response to EPA Specific Comment 22, for the sites that will be carried through to the SI, the SI SAP, which will be submitted for regulatory review, will consider specific potential exposure and receptor scenarios.

33. Section 2.3.3, second paragraph, “drinking”: change to ‘surface’ water.

Navy Response: The word “drinking” has been changed to “surface” in the referenced sentence.

34. Section 2.3.3, third paragraph, “as fish”: add crabs, etc.

Navy Response: Please note the referenced sentence simply provides an example of potential receptors for which bioaccumulation may occur. As noted in the response to EPA Specific Comment 22, for the sites that

will be carried through to the SI, the SI SAP, which will be submitted for regulatory review, will consider specific potential exposure and receptor scenarios.

35. Section 2.3.3, third paragraph, “drinking”: change to ‘surface’ water.

Navy Response: The word “drinking” has been changed to “surface” in the referenced sentence.

36. Section 2.3.3, fifth paragraph, “and animal species”: Add aquatic species.

Navy Response: The last paragraph of Section 2.3.3 has been revised to include “aquatic species” and listed aquatic plant and animal species have been added to Appendix B.

37. Section 3.1.1, “Internet Records”: Though the internet is a good source to find quick easy information, there may be accidents/incidents not uploaded to the web. Therefore, although a good tool, it cannot be used to rule out sites because no information was found on the web.

Navy Response: As demonstrated by Sections 3.1.1 through 3.1.5, Section 3.2, and Section 3.3, multiple sources of information were consulted to develop the findings, conclusions, and recommendations in the PA Report.

38. Section 3.2, second paragraph, “using standardized questionnaires.”: The interviews leave a lot of questions unanswered. Did the interviewer follow up with questions to clarify the interviewee statements?

See Appendix D for follow up questions.

Navy Response: As noted previously, multiple information sources were consulted to develop the findings, conclusions, and recommendations in the PA Report. The interviews were just one line of evidence. Please also see the responses to comments on Appendix D.

39. Section 3.2, second paragraph, “standardized”: The same questionnaire was not used for the interviews.

Navy Response: The word “standardized” has been deleted from the referenced sentence.

40. Section 3.2, first bullet, second dash, “Believes”: remove word.

Navy Response: The word “Believes” has been removed from the first bullet, second dash.

41. Section 3.2, first bullet, third dash, “trucks”: Add: fire trucks **containing AFFF** were...

Navy Response: The first bullet, third dash was revised as requested.

42. Section 3.2, first bullet, fifth dash, “(5-gallon)”: Historical usage of 5-gallon foam concentrate as of 1967 in the Navy obtained from: <https://apps.dtic.mil/dtic/tr/fulltext/u2/a429103.pdf>

“... several means of generating and delivering firefighting foam. The simplest piece of equipment used was a mechanical-foam nozzle with a pickup tube.

A firefighting hose was connected to the nozzle, and the pickup tube was inserted into a five-gallon foam concentrate container. When the hose was charged, water flowing through the nozzle would create suction, drawing the concentrate up into a mixing chamber in the nozzle. The mixing chamber was sized to mix air, water, and foam concentrate together in the proper proportions to create firefighting foam. The mechanical-foam nozzle would empty a five-gallon foam container in about ninety seconds, producing approximately 660 gallons of foam in that time. Additional concentrate cans could be placed nearby if more foam was required.

Navy Response: The quoted information is noted, but as described in Appendix D, AFFF from the 5-gallon containers was transferred to the fire trucks. There is no indication AFFF was utilized in Vieques in the manner described in the master’s thesis.

43. Section 3.2, first bullet, sixth dash “Equipment was cleaned/decontaminated”:

-What type of equipment was cleaned/decontaminated? If it is just the firetrucks; then substitute the word 'equipment' for firetrucks.

-The word 'equipment' can be a host of items. What kind of equipment was washed with the AFFF flushed from the truck once a month?

-Clarify.

Navy Response: The referenced dash has been revised to read (based on interview record): “The fire trucks were cleaned/decontaminated by flushing once a month, but no foam was used.”

44. Section 3.2, first bullet, sixth dash, “without foam”: Remove term 'without foam'. It is irrelevant since AFFFoam was flushed from the trucks once a month.

Navy Response: Please see the response to EPA Specific Comment 43. While the phrase may be irrelevant, it is consistent with the interviewee’s response and therefore will be retained. However, none of this information was used to eliminate the fire station or motor pool from consideration as a potential PFAS source area; both areas were recommended for further investigation via an SI.

45. Section 3.2, first bullet, eighth dash, “training pits”: See comments in the actual interview Appendix D

Navy Response: Please see responses to comments on Appendix D.

46. Section 3.2, first bullet, eleventh dash, “not”: Ortiz's answer in page 268 and 269 of this pdf file was:

"It is possible that some AFFF was inadvertently released on the ramp in front of the fire station."

Revise text.

Navy Response: Inadvertent typo. The word “not” has been deleted.

47. Section 3.2, first bullet, twelfth dash: See related comments on page 269 of this pdf file.

Navy Response: As noted previously, the bulleted list was produced from the interviewee responses. Please also see responses to related comments on page 269.

48. Section 3.2, second bullet, third dash, “Blood Meal Foam only”:

-What is the 'Blood Meal Foam'?

-Add a footnote to this term.

Navy Response: The key element of that bullet is that the Marine Corps did not use AFFF on Vieques. Blood meal foam would be a protein-based foam. While the form of protein in the protein-based foam may or may not actually been “blood meal,” that a protein-based foam was used is by the Marine Corps prior to 1975 is consistent with the type of foam most commonly used prior to the MILSPEC and likely even after for a period of time until land-based operations made the transition to AFFF.

49. Section 3.3, first paragraph, first sentence, “Site reconnaissance”: It is unclear if each site was visited and evaluated.

-Revise to indicate whether site visits/reconnaissance were conducted at each proposed site for further evaluation in the form of an SI.

-If site visits/reconnaissance were conducted at each proposed site; then, revise the report to summarize the information gained from these visits, include site figures/sketches and photographic documentation.

Other sites identified for an SI

-Conduct site visits/reconnaissance to the other potential PFAS sites recommended for further investigation in our comments.

-Revise the report to summarize the information gained from these visits, include site figures/sketches and photographic documentation.

-Revise text to add new information.

Navy Response: Of the 14 sites recommended for SI, 7 were visited during the PA site reconnaissance. Former NASD SWMUs 6 and 7 and Former VNTR SWMU 1 were not specifically visited during the reconnaissance because those sites were waste disposal sites that underwent removal/remedial action so there is no additional information that could be gathered regarding PFAS use, disposal, or release from a site visit. Further, historical studies/actions/monitoring at these sites, as well as PI 5 and the runway area, SWMU 20, and PAOC K, have sufficiently documented the sites' physical conditions. In addition, during preparation of the SI SAP for these sites, additional site reconnaissance will be performed to help provide the rationale for sample locations. Section 3.3 has been revised with this information.

- 50. Table 3-1 Note:** This note implies that the Draft PA Report is based solely on interviews and site reconnaissance and not on historical documentation. Going through the list it also seems that the file search conducted was based solely on "PFAS." The statement on this note does not reflect some information obtained from other sources such as: "building used for firefighter training purposes" (based on this statement it seems that the PMC, 2000 report is not part of this list) and/or information associated with firefighting demonstrations in the Camp Garcia airfield in Appendix C. Revise report to discuss this lack of information and how it directly impacts the ability of the document to meet the objectives outlined in Section 1.1 (Preliminary Assessment Objectives). What keywords were used for this file search. Clarify.

Navy Response: There are several errors associated with Tables 3-1 and 3-2 contained in the Draft PFAS PA Report, but the search was not based solely on "PFAS"; it was appropriately based on finding the types of information pertinent to evaluate the potential for PFAS release. The Table 3-1 inserted into the report was an example list of types of documentation that can be considered when performing a search of historical documents potentially associated with PFAS. The example list is not intended to be a minimum, maximum, or exact listing of the types of documentation to be evaluated. It is recognized that not all documents in the example list are necessarily applicable or available to a particular Naval facility and additional documents not on the example list may be applicable and available. The table is ultimately intended to be a list of documents applicable and available for the specific facility. Therefore, the table has been replaced with the Vieques-specific list of documents evaluated during the PFAS PA. The information presented in the PA Report is based on significant historical documentation in addition to site reconnaissance and interviews.

Regarding the "Note" referenced in the comment, it applies to Table 2 and, therefore, should have been at the bottom of that table. As stated in Section 3.1.1, the search terms (keywords) used for the internet records search are listed in Table 3-2. The "Note" was intended to footnote that table with a statement that the internet search using those keywords produced no records relevant to the Vieques PFAS PA. The "Note" has been moved to the bottom of Table 3-2 and revised to read: "Note: An internet search using the search terms (keywords) in this table produced no historical documentation relevant to the Vieques PFAS PA."

- 51. Table 3-2:** Table 3-2 seems to be a partial list of search terms (only search terms 29-60). Is this a typo on the numbering system? Table 3-1 ends in #28. Clarify or provide a complete list of the key terms used to identify potential PFAS releases and obtain information on physical investigations and identification of potential pathways and receptors to those areas. The following search terms should be included: nozzle, runway, suppression, suppressant, training, ansulite, hangar, helicopter, helo, helipad, AFFF storage, AFFF handling areas, pump houses, LCU (and the expanded acronym too), motor pool. Expand search and include findings in the report.

Navy Response: Please see the response to EPA Specific Comment 50. Additionally, the referenced line numbers are a typo and not intended to be a continuation of the line numbering in Table 3-1. Table 3-2 has been updated to correct the line numbering and to include the additional search terms requested in the comment. Further, an additional internet search was performed using the requested search terms. The additional search produced no historical documentation relevant to the PFAS PA.

- 52. Section 4, "Findings and Recommendations":** The following comments apply to the sites identified for further investigation in the form of an SI.

1) Provide consistent information regarding surface covers at each site (e.g., paved, grassy, bare soil, etc.). Some site descriptions include surface cover information, while others are missing this information.

- Revise to include information regarding surface covers at those sites moving forward in the form of an SI.

2) Provide site-specific sketches for each site moving forward to an SI. See comment in Section 4.2.1.

3) The report includes statements indicating a known groundwater flow direction at many of the sites proposed for further evaluation. Similarly, figures in the report display the estimated groundwater and surface water flow directions.

- Clarify if groundwater flow directions are known or estimated or observations made on site visits for each site evaluated.

- If estimated, revise PA report to indicate that the groundwater flow directions are unknown but estimated based on surface elevation, geology, distance to nearest water body, etc.

- If known provide groundwater elevation data and potentiometric surface maps or provide reference to support such statements in the SAP SI.

- Include at least a figure displaying the potentiometric surface maps for groundwater at both the NASD and VNTR areas to support the direction of groundwater flow.

- As indicated previously, groundwater evaluation within the potential source areas (not only downgradient) will be necessary at sites where evidence indicates a potential PFAS release.

4) Secondary areas of concern are located beyond the boundary of each potential area of concern (e.g., streams, ponds, lagoons, bays, and the Valle de Resolución and Valle de Esperanza groundwater aquifers, ecological receptors, etc.).

- Revise the PA report to discuss how potential exposure of ecological receptors to secondary areas of PFAS contamination will be addressed.

- Ensure that all applicable secondary areas of potential PFAS contamination within each area of concern are included in the forthcoming SAP SI.

5) Revise report to include additional sites recommended for an SI in Table 4-1.

Navy Response: Regarding 1) above, the site descriptions have been updated to provide consistent information regarding surface cover.

Regarding 2) above, any site-specific feature relevant to the PFAS evaluation discussed in the text or interviews that is not already contained in Figures 4-1 through 4-9 and whose location is known or can be estimated has been added to the figures; where the locations or features are approximate or assumed, that information has been qualified. Please also note that during preparation of the SI SAP for these sites, additional site reconnaissance will be performed and, as warranted, more detailed figures produced to help provide the rationale for sample locations.

Regarding 3) above: Wherever groundwater flow and surface water flow are discussed or shown on figures, the information has been updated to clarify the basis for the direction of flow (e.g., determined based on actual measurements, estimated based on topography, etc.). For any site where piezometric surface maps were historically prepared, the information has been added to the figures.

Regarding 4) above: The objective of the PA Report is not to develop how potential contamination will be addressed, but instead to identify sites or areas where an historic PFAS release is deemed possible such that further investigation via an SI is warranted. The details of the further investigation, together with the associated rationale, will be included in the forthcoming SI SAP, as indicated in the comment.

Regarding 5) above: Please see the responses to comments on specific sites in Table 4-1 recommended for inclusion for the rationale for why their inclusion is or is not warranted.

53. Section 4.1.1, first paragraph, “Figure 4-1”: Add Appendix E.

Navy Response: The parenthetical text at the end the first sentence of Section 4.1.1 has been revised to read: “(Figures 2-2 and 4-1 and Appendix A and Appendix E).” Note: Appendix numbers may change as a result of final comment responses, so the actual appendix containing the photographic log may be different.

54. Section 4.1.1, second paragraph, “fires”: after fires add: 'and extinguished during training operations'.

Navy Response: Text revised as requested.

55. Section 4.1.4, last sentence, “Master HHRA and Master ERA protocols (CH2M, 2018)”: Section 2.3.3 Ecological Receptors notes that currently there are ecotoxicological data available from the literature for some PFAS compounds for soil and water exposures. This information should be provided as part of a revised Master SOP for ecological risk. Further, the Tri-Services have been working on reviewing existing literature to develop an ecotoxicological database of PFAS compounds. As new studies become available, the Master SOP should be updated to reflect the most current information.

Revise Master SOPs accordingly

Navy Response: As has been done in the past, in order to avoid issuing revised Master protocols every time a screening level changes, updates are issued when a significant number of revisions are warranted such that continuing to explain deviations in SAPs and reports becomes cumbersome. The same process will be followed for PFAS given that numerous studies are underway and frequent changes in screening values may be forthcoming. In the meantime, modifications to the Master protocols will be included in SAPs and utilized in the associated reports. The last sentence of Section 4.1.4 has been revised to read: “The investigation approach . . . Master Human Health Risk Assessment (HHRA) and Master ERA protocols (CH2M, 2018), as applicable to the site and as modified, if necessary, to account for new PFAS screening levels/protocol that have been promulgated or otherwise adopted industry-wide.”

56. Section 4.2.1, first sentence: Section 4.2.2 states that AFFF concentrate was stored in 5-gallon containers in an onsite Conex located less than 100 feet southwest of the NASD Former Fire Station Building 2046, that AFFF was loaded into fire trucks on the ramp of this fire station, and that fire trucks were washed on the ramp; however, these site features are not depicted on Figure 4-2. Include a site-specific sketch figure displaying the location of relevant site features such as the ones described above and other features such as: tanks holding AFFF, location of foam canons or spray nozzles, AFFF storage areas, floor drains, suspected runoff areas. As discussed previously, revise report to include site-specific sketch figures that depict relevant site features for each site moving forward to the SI stage. Include the site sketch reference to the text.

Navy Response: Please see the response to EPA Specific Comment 52 #2). Given that the primary objective of the PA is to determine sites/areas where there was the potential for a PFAS release, the information provided in the PA Report for this site is sufficient for making the determination it should be further evaluated via a PFAS SI. The detail requested in the comment is not necessary to identify this site as a potential PFAS release site and, therefore, is not necessarily collected at the PA stage because it can be collected as part of SI planning. As part of developing the SI SAP, additional reconnaissance will be performed and more detailed information from historical documentation, to the extent it is available and applicable, will be included in the SI SAP to help provide the rationale for the sampling and evaluation approach. At that time, more detailed figures will be developed, as warranted, that provide locations of known/identified features relevant to a potential PFAS release. It is likely some features mentioned by an interviewee are no longer present, but the sampling approach can be developed to account for these uncertainties.

57. Section 4.2.1, second sentence, “storage sheds southwest of the building contained hoses and fire extinguishers” phrase: Identify this area in Figure 4-2 or in a site specific sketch.

Navy Response: Please see the response to EPA Specific Comment 56.

58. Section 4.2.1, last sentence, “rum distillery” phrase: Provide in contact info of actual owners mentioned in this report.

Navy Response: There is no contact information of owners provided in the PA Report.

59. Section 4.2.2, first sentence, “interview portions of this PA provided no definitive evidence of a release of AFFF” Ortiz stated that “firetrucks were filled with AFFF” and “fire trucks were flushed once a month...”

Even if no ‘additional’ foam was used, when the trucks were flushed, AFFF was released into the environment. Therefore, a release of AFFF is suspected at this site.

Revise text accordingly throughout the report, where applicable.

Navy Response: The Navy concurs with the commenter that a release of AFFF is suspected at this site, which is why the site was recommended for an SI. However, there is currently no definitive evidence of release. Therefore, while that part of the sentence will remain as written, the first and second sentences of Section 4.2.2 have been revised to read: “The document review . . . at the former fire station. However, information obtained during an interview suggest there is the potential AFFF was released to the environment in this area. Information obtained during an interview indicated . . . ”

60. Section 4.2.2, third sentence: Identify location of conex boxes in Figure 4-2 or in a site specific sketch and in Appendix E, photos and historical imagery.

Navy Response: Please see the response to Comment 52 #2).

61. Section 4.2.2, second to last sentence, “cleaned” ADD: “/flushed into a ramp”

Navy Response: Please note the interviewee made no statement that the trucks were flushed onto the ramp. Nonetheless, the following has been added at the end of Section 4.2.2: “Given likely truck cleaning procedures and that no disposal records for AFFF were identified, it is likely flushing occurred onto the ramp during cleaning.”

62. Section 4.3.1, first sentence, “Figure 4-3”: Add Appendix E.

Navy Response: The parenthetical text at the end the first sentence of Section 4.3.1 has been revised to read: “(Figures 2-2 and 4-3 and Appendix E).” Note: Appendix numbers may change as a result of final comment responses, so the actual appendix containing the photographic log may be different.

63. Section 4.4.1 first paragraph, first sentence, regarding WWTP:

- Provide a description of the facility, including a description of the concrete vault (page 307 of this pdf file) and/any other structure as seen in site reconnaissance.
- Include information on aeration and separation tank for bio-treatment as mentioned in rationale Table 4-1, page 42 of this pdf file.
- Provide a brief description of how sludge in the WWTP was managed and/or disposed.
- Identify the sludge management areas in Figure 4-2 and historical imagery in Appendix E.
- Area of investigation should be expanded based on historic imagery dated 1985 (see remarks on Appendix E page 310 of this pdf file).

Navy Response: A description of the facility has been added, including that the WWTP was a pre-fabricated unit that included an aeration tank and a separation tank and that sludge from the treatment plant was pumped to a vacuum truck for offsite disposal (Phase II RFA Report, Kearney et. al., 1988). Note: There are two Phase II RFA Reports, one for the former NASD and one for the former VNTR. The reference in the previous sentence refers to the one for the former NASD, which has been added to the Section 6 list of references. While the Phase II RFA Report does not provide a final disposition location of solids generated at AOC B, the SI/ESI Report (CH2M, 2010a) indicates solids from the SWMU 10 settling tank were pumped out and transported to drying beds at the former Naval Station Roosevelt Roads (currently Naval Activity Puerto Rico). It is reasonable to assume the same was done for the solids removed from AOC B. Further, as stated in the response to EPA Specific Comment 56, more detailed information, to the extent it is available and

applicable, will be included in the SI SAP to help provide the rationale for the sampling and evaluation approach. The area of investigation, including the rationale, will be included in the SI SAP.

64. Section 4.4.1, third sentence, “Figures 2-2 and 4-2”: Add Appendix E.

Navy Response: The parenthetical text at the end the third sentence of Section 4.4.1 has been revised to read: “(Figures 2-2 and 4-2 and Appendix E).” Note: Appendix numbers may change as a result of final comment responses, so the actual appendix containing the photographic log may be different.

65. Section 4.5.1, header: Refer reader to Appendix E.

Navy Response: Text has been added to Section 4.5.1 referring reader to Appendix E.

66. Section 4.5.1, second sentence, “Figure 4-5”: Potential former VNTR motor pool is not delineated in Figure 4-5. Revise figure to include the approximate site location. If site location is not known, then delineate the area of concern that will be included in the SI. See next comment and additional remarks in page 41 of this pdf file to include in the assessment Bldg 340, which is north of Bldg 330 along with the area identified by Mr. Ortiz as the location of the motor pool.

Navy Response: The interviewee circled an area on a map where he recalled the former motor pool being located. That is the location pointed to by the “VNTR Motor Pool” label in Figure 4-5. Recognizing the area would have been large enough to manage multiple vehicles and to account for vegetation and other ground features observed in the historical aerial imagery around this point, an approximate area of the Potential Former VNTR Motor Pool Area was presented on the historical aerial imagery in Appendix E. This approximated boundary has been added to Figure 4-5 with a note that its boundary is approximated based on interviewee input and historical aerial imagery.

67. Section 4.5.1: Revise report to include building 340 to the north of Bldg 330. See additional remarks in Table 4-1, page 41 of this pdf file.

Navy Response: To clarify, neither Building 330 nor 340 remains, as shown in the later-year aerial imagery in Appendix E. No historical information has been found regarding the use of Building 340. Therefore, unless information confirming its use was not as the motor pool is found prior to or during preparation of the SI SAP, the former fire department/motor pool study area will include the area of former Building 330, the area of former Building 340, and the area south of former Building 330 discussed in the response to EPA Specific Comment 66. The study area and details of the study will be included in the SI SAP.

The following sentence has been added to the end of Section 4.5.1: “No historical information has been found regarding the use of Building 340 (shown in **Figure 4-5**, but no longer present). However, given its close proximity to the former fire department building (Building 330) and that historical imagery shows no structure in the area referred to by the interviewee, it is possible Building 340 was associated with the motor pool.”

68. Section 4.5.2: Add “Building 340” after “possible motor pool” in the first sentence.

Navy Response: The first sentence has been revised to read: “The document review . . . at the possible motor pool (area south of former Building 330 and/or area of former Building 340).”

69. Section 4.5.3, first sentence, after “(fire truck maintenance area)”: Add Bldg. 340 or

Navy Response: The requested clarification has been added to Sections 4.5.1 and 4.5.2 as shown in the responses to the previous two comments. The referenced sentence in Section 4.5.3 as currently written provides the intended clarification (i.e., “fire truck maintenance area”).

70. Section 4.6.1, first paragraph, first sentence, “Figures 2-3 and 4-6”: Add Appendix E.

Navy Response: The parenthetical text in the first sentence of former Section 4.6.1 (now Section 4.7.1) has been revised to read: “(Figures 2-2 and 4-6 and Appendix E, the large outlined area).” Note: Appendix numbers may change as a result of final comment responses, so the actual appendix containing the photographic log may be different.

71. Section 4.6.1, first paragraph, sixth sentence: Expand acronym (RFA).

Navy Response: The sentence has been revised to read: “The 1988 and 1995 RCRA Facility Assessments (RFAs) . . .”

72. Section 4.6.1, first paragraph, sixth sentence: Figure 4-6 delineates SWMU 10 area consisting of 4 lagoons to the North and to an odd shape area to the South that seems to be a series of infiltration percolation beds (or trenches/'leaching field'). Imagery date: 1970.

Provide more information about the area South of the lagoons. If this area was used as an infiltration percolation beds; then, include a description of the percolation beds.

See additional info in the following two comments.

Navy Response: The information provided in former Section 4.6.1 (not Section 4.7.1) is summarized from the references provided in that section and likely represents the available information. As noted in the responses to EPA Specific Comments 52 #2), 56, and 63, the information contained in the PA Report is sufficient to make the determination the site warrants a PFAS SI and that more detailed information, to the extent it is available and applicable, will be included in the SI SAP to help provide the rationale for the sampling and evaluation approach. The area of investigation, including the rationale, will be included in the SI SAP.

73. Section 4.6.1, first paragraph, seventh sentence: Figure 4-6 aerial photo dated 1970 (page 332 of this pdf file) shows the 'linear scars'. This field looks like a typical infiltration percolation bed 'system' with a weird shape that seems to extend to the wetland area close to Bahia Tapón (see Imagery date:1970 and General Site Plant page 225 of this pdf file).

The sketch in page 225 and the imagery in page 332 show how the SE portion of the 'linear scars' were close to Bahia Tapón. The wetland area and Bahia Tapón should be included in the SAP-SI.

Navy Response: The SI area of investigation, together with the rationale, will be included in the SI SAP.

74. Section 4.6.1, first paragraph, eighth sentence: Delete “no historical evidence has been found that wastewater was discharged to the land southeast of the lagoons.” This portion of the sentence does not match with previous statements; such as, 1988 and 1995 RFA indicated lagoons discharged to land; 2000 report described the area as 'a series of linear ground scars and ditches'; the aerial photo dated 1962 looks like a typical 'infiltration percolation' beds used as part of sewage treatment systems; there is a layout that shows 'an effluent line' southeast of the lagoons (see Appendix A has a "General Site Plan, page 225 of this pdf file).

Revise report accordingly.

Navy Response: The referenced sentence has been revised to read: “Although it is possible . . . the Current Conditions Report indicated the effluent from the final polishing lagoons was chlorinated in the chlorine contact chamber and then discharged to the sea (CH2M, 2001).”

75. Section 4.6.1, first paragraph, ninth sentence: Revise report to add the two interviews mentioned in this paragraph to the Interview Log section.

Include copies of the interviews in Appendix D.

This comment applies to any interview mentioned in this report.

Navy Response: Please note some interview references in the PFAS PA Report are language pulled directly from historical reports, not the interviews conducted specifically for the PFAS PA Report that are compiled in Appendix D. For example, the next-to-last sentence of the first paragraph of former Section 4.6.1 (now Section 4.7.1) is a direct quote of a sentence from the SI/ESI Report (CH2M, 2010a). The information is from a 2008 phone conversation with the former NSRR Water Operations Manager during the SI/ESI planning, not an interview specifically related to the PFAS PA. Nonetheless, a summary of the telephone call has been added to Appendix D.

Additionally, the 2019 interview referenced in the last sentence of the first paragraph of former Section 4.6.1 (now Section 4.7.1) was not intended to be specifically associated with PFAS; it was simply to ask the former NSRR Water Operations Manager if he knew where solids removed from the settling tank at SWMU 10 were disposed and the sentence reflects his response. Nonetheless, a summary of the telephone call has been added to Appendix D and the sentence has been revised to read: "In April 2019, the former Water . . . Contractor was asked about the disposition of solids removed from the SWMU 10 settling tank and he stated that solids were . . . " and moved to the second paragraph.

- 76.** Section 4.6.1, first paragraph, last sentence: This sentence is repeated in the next paragraph. Neither paragraph described the settling tank as part of the wastewater management system. There is only a brief statement in the second paragraph about how 'solids were removed in?? a settling tank'.

It is not clear if the settling tank was associated with the original sewage treatment lagoons (1950s-1974) or the 'lined' lagoons (1974-2000) or the new lagoon (2000-2003?). The tank is not seen in the historical imagery provided in Appendix E.

- Revise text to determine if the sentence has to be eliminated from one of the paragraphs.
- Revise text to include information about the settling tank within the wastewater treatment process associated with the old lagoons, the converted lagoons, and the new lagoon.
- Clarify location of the settling tank (at what stage of the 'treatment process' was the settling tank?).
- Identify location of the settling tank in Figure 4-6.
- Provide a brief description of how sludge was managed and/or disposed.

Navy Response: Please see the response to EPA Specific Comment 75. The referenced sentence was intended for the second paragraph; the first occurrence of the sentence has been deleted. Other than the referenced sentence, the entirety of the second paragraph is verbatim from historical documents, as indicated by the document references. There is no known additional information regarding the settling tank other than some references to solids being removed from a settling tank associated with SWMU 10, so its location is unknown. Other than the chlorination building (AOC G), no tank structure was observed during past investigations at SWMU 10. Regardless of the uncertainties associated with the presence or exact location of a settling tank at SWMU 10, the site has been identified for further investigation via a PFAS SI and the locations of the lagoons and chlorination tank (which would be the most likely locations to detect a PFAS release) are known. Further, as indicated in the response to EPA Specific Comment 56, if more detailed information is found that is applicable to the PFAS SI, it will be included in the SI SAP.

- 77.** Section 4.6.1, second paragraph, fourth sentence: It is presumed that the site reconnaissance would have been sufficient to make this determination.

Revise this sub-section to clarify:

- 1) whether a site recon was conducted at this area;
- 2) if the lagoons were covered with soil fill (based on observations made during a site recon);
- 3) There is only one photo for AOC G in Appendix E. Include pictures of the actual conditions of the 4 lagoons? Aerial view in google maps show the lagoons (imagery date as of 12/18/2017 (<https://earth.app.goo.gl/WA9nUH>)).

Navy Response: Regarding 1): Please see the response to EPA Specific Comment 49.

Regarding 2): The fourth sentence of the second paragraph of former Section 4.6.1 (now Section 4.7.1) has been revised to read: "No historical documentation was found stating the lagoons were covered with soil fill once they became inactive and sampling conducted as part of the Phase I RCRA Facility Investigation and Expanded Site Inspection indicated the surficial material within the former lagoons was historical sludge (CH2M, 2010a)."

Regarding 3): Additional photos are available in CH2M (2010a). As noted in the response to EPA Specific Comments 52 #2), additional reconnaissance will be performed during preparation of the SI SAP during which additional photographs will be taken. The information provided in the PA Report is sufficient for identifying SWMU 10 and AOC G as potential PFAS source areas warranting further study via an SI.

- 78.** Section 4.6.1, second paragraph, sixth sentence: Solids can be stir in a tank or remove from a tank. Please explain further or revise text. Provide reference.

Navy Response: The sentence was intended to mean a settling tank was used to remove solids from the waste stream prior to entering the lagoon. For clarification, the sentence has been revised to read: “This lagoon received only liquid sanitary waste; a settling tank was used to remove solids from the waste stream prior to effluent discharge to the lagoon (CH2M, 2010a).”

- 79.** Section 4.6.1, second paragraph, seventh sentence: See comment on the last sentence of previous paragraph. Revise accordingly.

Navy Response: Please see the response to EPA Specific Comment 76.

- 80.** Section 4.6.1. Page 4-5, paragraph 2, line 16, “The results indicated that it is...”; Revise text to eliminate 'unlikely and 'CERCLA related' wording. The sentence is too ambiguous. If the site was sampled, we should know if there was a release, the contaminants of concern, and concentrations detected on the samples; we should know if it poses or not a threat to the human health and environment; and if a remedial action was needed or taken (instead of 'unlikely' or 'if one did it did not result in contamination').

Revise text to reflect the outcome of the 2010 analytical results, e.g., 'The 2010 results indicated that a release of XYZ hazardous substances has occurred/has not occurred at the site; or the results indicate that these XYZ contaminants are below the ARARs or below specific benchmarks; or several metals were detected at elevated levels and explain the remedial action taken; or for example TCE was detected in groundwater but concentrations do not pose a risk to human health and the environment; etc. Be concise but more specific.

This applies to other references made to sampling data.

Navy Response: The referenced wording is consistent with the statement made in Section 6.4 of the SI/ESI Report (CH2M, 2010a), which was approved by EPA. Please also note that the presence of a release does not necessarily mean it is CERCLA-related; chemicals can be present as a result of influences outside the scope of CERCLA or any other regulatory framework. However, in that the site was not evaluated for PFAS at that time, but will be in the SI, the sentence has been revised to read: “The results indicated that it is unlikely a CERCLA-related release of these chemicals occurred at the site or, if a CERCLA-related release of these chemicals did occur, it did not result in contamination of soil or groundwater at concentrations posing an unacceptable risk to human or ecological receptors, leaching concern for groundwater, or maximum contaminant level (MCL) exceedance. However, PFAS chemicals were not part of historical investigations.”

This clarification has been made elsewhere in the PA Report, as applicable.

- 81.** Section 4.6.1, last paragraph, fifth sentence: Delete “RCRA Facility Assessment” but retain “RFA.”

Navy Response: Revision made as requested.

- 82.** Section 4.6.1, last paragraph, second-to-last sentence: See last comment on previous paragraph. Revise accordingly.

Navy Response: Please see the response to EPA Specific Comment 80.

- 83.** Section 4.6.1, last paragraph, last sentence: Figure 4-6 has a photo.

- Provide a description of the photo.
- Provide a date of photo. It is not clear if the photo was part of a recent site reconnaissance or from another site visit.

- There is an arrow pointing towards AOC G, but the arrow is in SWMU 10.
- Clarify if the photo is part of SWMU 10 or AOC G. (e.g., Figure 4-5 has a clear line pointing towards Bldg 330).

Revise report accordingly.

Navy Response: The structure in the photo is the chlorination contact chamber at AOC G. The requested information has been clarified in Figure 4-6.

84. Section 4.6.2, second sentence: Delete “(though not necessarily on Vieques).” Irrelevant – as per the interview, AFFF was used in Vieques.

Navy Response: The requested revision has been made.

85. Section 4.7.3, second sentence: Identify Kiani Lagoon in Figure 4-7.

Navy Response: The requested revision has been made.

86. Section 4.8.2, last sentence: “SWMU 6” should be “SWMU 7.”

Navy Response: “SWMU 6” has been corrected to “SWMU 7” in former Section 4.8.2 (now Section 4.9.2).

87. Section 4.9.1, second paragraph, first sentence: As stated before, revise report to log this in the Interview Log section. Include copies of the interview in Appendix D.

Navy Response: The language was intended to be directly from the EBS (NAVFAC, 2003), which did not attribute the information to interviewees. The sentence in former Section 4.9.1 (now Section 4.10.1) has been revised to match the one in the EBS and now reads: “One 5-ton dump truck was used every day, 5 days per week, to transport waste to this site.”

88. Section 4.9.3, first paragraph, second sentence: Revise “Figure 4-7” to “Figure 4-9.”

Navy Response: “Figure 4-7” has been corrected to “Figure 4-9” in former Section 4.9.3 (now 4.10.3).

89. Section 4.9.3, first paragraph, last sentence: Add a description of the ephemeral streams.

Navy Response: A description of the ephemeral streams at SWMU 1 has been added to former Section 4.9.3 (now Section 4.10.3).

90. Section 4.9.3, second paragraph, second sentence: Overland flow and surface runoff flow to the ephemeral stream may not likely encounter waste since 2015 to the present.

However, there was 'exposed surface debris across the landfill' since the its closure in 1978 to 2015 when the debris was removed.

Therefore, for over 37 years, overland flow may have come in contact with the 'exposed surface debris' from 'across the landfill' potentially carrying PFAS to the nearest surface water bodies.

Revise text to include surface water pathway as a potentially impacted media.

Navy Response: The second sentence has been revised to read: “Because overland flow and flow through the ephemeral stream would not have encountered surficial waste following its removal in 2015, surficial transport of PFAS (if present) would not have been likely since that time. However, during the time debris was exposed on the landfill surface, if AFFF or other PFAS-containing materials occurred within the landfilled waste, surficial transport of PFAS could have occurred.”

91. Table 4-1 (page 1), header: Add a sentence stating any remedial/removal action taken at each site, e.g., TCRA, NTCRA, PA/SI, RI/FS, etc., if applicable.

Navy Response: The requested information has been added for each site, as applicable.

92. Table 4-1 (page 1), NASD Former Fire Station Building 2046 at the Public Works Area, fifth sentence: Clarify/Specify, what type of equipment was deconed/cleaned monthly.

Navy Response: Please see the response to EPA Specific Comment 43. The phrase “equipment cleaning” in Table 4-1 has been revised to read: “fire truck flushing” to be consistent with the interview record.

93. Table 4-1 (page 1), NASD Former Fire Station Building 2046 at the Public Works Area, fifth sentence: As mentioned before trucks were filled with AFFF; therefore, a release of AFFF to the environment is suspected. Please revise text accordingly.

Navy Response: The phrase “but no foam was reported to be used at any site” has been deleted.

94. Table 4-1 (page 1), NASD Former Fire Station Building 2046 at the Public Works Area, sixth sentence: Which page in the Appendix? Revise text to add page #.

Navy Response: “(Appendix A)” has been revised to “(Appendix A, first page of Table B-1 from EBS).”

95. Table 4-1 (page 1), Potential Former VNTR Motor Pool Area and Former Fire Department Building 330: Area of study should be expanded to include the adjacent Bldg 340, which is North of the Former Fire Department Bldg 330, and the area identified by Jose Ortiz as the former VNTR Motor Pool Area.

The rationale to include Bldg 340 is based on observations from the Historic Imagery in Appendix E. None of the 10 aerial photographs from 1959 to 2007 shows any indication that a building existed in the area identified by Mr. Ortiz as the Motor Pool Area.

It is more likely that Motor Pool operations took place within a roof structure rather than in the open field. Since the exact location of the Motor Pool is unknown Bldg 340 should be included in the study. The area identified by Mr. Ortiz should be also assessed due to uncertainty of what took place in that area and/or if washing/cleaning/decon operations may have also taken place in that open field.

The term 'Motor Pool' should be added to the search terms in Tables 3.1 and 3.2.

-Update the report and Tables with findings of the Motor Pool search.

-Evaluate and include other motor pool areas/auto shops/PW maintenance areas in the VNTR and NASD for further investigation.

-Add the evaluated areas to this table and table 5-1.

Navy Response: Please see the response to EPA Specific Comment 67 regarding expanding the area. Please also note that the reason the two motor pool areas at the former NASD and the former VNTR were added is because an interviewee indicated the fire trucks were serviced at those motor pool areas. The PA process does not typically include evaluation of sites without any reason to suspect potential use or release. A thorough review of records, internet searches, and interviews was completed to identify areas where AFFF and other PFAS-containing materials were used or released. Based on this, there is no reason or historical information that would suggest the need for including additional motor pool/auto shops/public works maintenance areas in the SI solely because they are motor pools, auto shops, or public works maintenance areas, especially without first characterizing the sites where PFAS releases would be more likely (i.e., the sites recommended in the Draft PA Report and updated based on the comment responses). Regarding adding “motor pool” to the search, please see the response to EPA Specific Comment 51.

96. Table 4-1 (page 1), Potential Former VNTR Motor Pool Area and Former Fire Department Building 330: Correct the citation of “Building 300” to “Building 330.”

Navy Response: The requested revision has been made.

97. Table 4-1 (page 1), VNTR PI 5: Include this area for further investigation in the form of an SI. See note below for the VNTR Camp Garcia Runway. Revise report accordingly.

Navy Response: With respect to the note below regarding the Camp Garcia runway, please see the response to EPA Specific Comment 14. The information contained in that comment response, which has been added to Table 4-1, provides further evidence that a PFAS release at the site is extremely unlikely. Nonetheless, because evidence of use of runways for spray testing (not necessarily with AFFF) on Navy facilities was found,

the Camp Garcia runway, including PI 5, has been added to the list of sites recommended for an SI, as concurred upon at the December 5, 2019, Vieques Technical Subcommittee Meeting.

98. Table 4-1 (page 1), VNTR PI 5: Revise to Yes.

Navy Response: Please see the response to the previous comment.

99. Table 4-1 (page 1), VNTR PI 5: Revise report to include information about the surface water drainage area for the runway. Revise report to include information about the fire department. Include a map/figure/sketch identifying these areas.

Navy Response: As noted in the table, the site was part of an SI conducted in 2009 and documented in the SI/ESI Report (CH2M, 2010a). During the SI, soil samples were collected throughout the surface water drainage area. This information has been added to Table 4-1. Nonetheless, the table (and associated text and figures) has been revised to include PI 5 in the list of sites recommended for an SI.

Other than the statement from the EBS, there is no known information about a fire department being present at the former Camp Garcia runway. It was a statement made by an interviewee during early reconnaissance activities following the Navy's cessation of active training and attempts to corroborate the information have produced no evidence that a fire department was located at this site, which is supported by the absence of structures in historical aerial photographs between 1959 and 2005 (CH2M, 2010a) and the presence of the fire department at Camp Garcia, located approximately ½ mile north of the former runway. This information has been added to Table 4-1.

100. Table 4-1 (page 1), VNTR PI 5: Revise the PA report to log this in the Interview Log section and include copies of the interview in Appendix D.

Navy Response: The information from the interview(s) is from the EBS (NAVFAC, 2003). No interview logs are contained or referenced in the EBS.

101. Table 4-1 (page 1), VNTR PI 5: Delete the word "Additionally" from the next-to-last sentence and delete "provide additional evidence that a release related to fuel or fire did not occur at the site." Briefly explain the sampling results in general terms. Indicate what type of follow-up action (removal, remedial) was needed or taken after the SI, if any. For example, 'sampling results show that there is no threat to human health and environment,' or 'sampling results indicated that levels detected on the media (specify media) were below environmental standards/below MCLs, etc.,' or 'the following contaminants XYZ were detected on XYZ above cleanup standards, if applicable state what kind of remedial action was taken. Use similar language to explain findings associated with the 2009 report.

Navy Response: The word "Additionally" has been deleted. The referenced sentence has been revised to read: "With respect to constituents detected and their concentrations, the vast majority of non-inorganics were non-detect, none of the remaining exceeded human health or ecological screening levels, and the inorganics were wholly or primarily attributable to background; no unacceptable human health or ecological risk was found and the dataset as a whole provides a line of evidence that a fuel release or fire did not occur. Detailed evaluation of the data collected during the SI can be found in Section 10 of the SI/ESI Report (CH2M, 2010a)."

There is no 2009 report. The 2009 SI was documented in the SI/ESI Report (CH2M, 2010a).

102. Table 4-1 (page 1), Hangars and Other Structures with AFFF Suppression Systems (Including Tank Farms): Clarify if other hangars, beside the one described in SWMU 20, existed in the former NASD or VNTR.

Navy Response: No other hangars are known to have existed.

103. Table 4-1 (page 1), NASD Former Fire Station Building 2046 at the Public Works Area: Site was counted twice. As shown in Table 5-1, the original # of sites were 9 not 10.

Navy Response: Table 4-1 is set up as categories of sites/structures/features (see category headers in gray) that are potential PFAS source areas. Based on that, NASD Former Fire Station Building 2046 at the Public

Works Area was not counted twice; it falls into two categories – “Fire Stations and Fire Truck Parking Areas” and “AFFF Storage Areas.” The reason there were 10 sites is that AOC G and SWMU 10 are different sites; they are combined for the evaluation purposes due to their association. The site number has been revised to include additional four sites the Navy and regulatory agencies concurred will be included in the SI.

- 104.** Table 4-1 (page 1), NASD AOC A: Expand acronym for IRFNA/MAF-4. Include term in the list of acronyms/abbreviations. Provide basic info on the IRFNA/MAF-4 drone fuel. If applicable, add a sentence stating that ‘a PA/SI, RI/FS, remedial/removal action was taken, if any. If sampling was conducted, briefly explain the results obtained as described in other posts.

Navy Response: Please note the site was incorrectly identified in Table 4-1 as “AOC A.” The site is “SWMU 5.” This has been corrected in Table 4-1. AOC A was a water supply well used for cattle located approximately 1 mile southeast of SWMU 5.

“IRFNA/MAF-4” is defined as “Inhibited Red Fuming Nitric Acid/Mixed Amine Fuel #4.” The acronym has been added to the report list of acronyms. SWMU 5 was the location of a one-time disposal (1975) of 7,000 lbs of IRFNA/MAF-4 on the ground near Building 22, which is a former magazine. SWMU 5 was investigated in 2000, including collection of soil samples for VOCs, SVOCs, and explosives. With the exception of one detection of benzo(a)pyrene (88 µg/kg), all analyses were non-detect. This constituent is not a component of IRFNA/MAF-4, but is a component of asphalt and the sample was collected adjacent to an asphalt road. The well at AOC A was also sampled in 2000 for VOCs, SVOCs, pesticides, PCB, and inorganics. Nothing other than inorganics was detected. Based on the above information, the sites were closed with no unacceptable risk and no action necessary. A summary of this information has been added to Table 4-1.

- 105.** Table 4-1 (page 1), VNTR SWMU 20 (formerly PI 4): When was the ‘large hangar’ demolished? Use historical imagery for this purpose, if needed. If the hangar existed in the 1970s; then, this area should be included for further assessment. If sufficient documentation cannot be obtained; then include this area for further investigation. Clarify whether potential sources of AFFF other than fire suppression systems (e.g., AFFF storage, washing or rinsing of fire engines) were possibly associated with these buildings. Revise report accordingly.

Navy Response: The structure is still present in a 1981 aerial photograph, but not present in a 1983 aerial photograph. However, the presence of a helicopter hangar does not by itself warrant sampling. Although no records of a fire suppression system or storage/use of AFFF at the hangar were found, SWMU 20 has been added to the recommended SI list, as concurred upon by the Navy and regulatory agencies at the December 5, 2019, Vieques Technical Subcommittee meeting.

- 106.** Table 4-1 (page 1), NASD SWMU 5: Add a sentence stating if any assessment or remedial/removal action was taken at this site.

Navy Response: The following sentence has been added: “Based on data collected at the site during the Expanded PA/SI and the associated human health and ecological risk assessments (CH2M, 2000), no unacceptable risks were identified and no action was deemed necessary (PREQB, 2007).” Both citations in the sentence have been added to the References section.

- 107.** Table 4-1 (page 1), NASD Helicopter Pad near MOV compound: One interviewee indicated 50 gallons of AFFF were stored on each of 2 fire trucks in support of the helicopter pads on NASD and VNTR. While it is stated that there are no records of fires, crashes, or fire training at these areas, the lack of reported fires, crashes, or fire training is insufficient to confirm that AFFF was not used in these areas. Include this and any other helicopter pad in the base as an area for further investigation. Revise report accordingly.

Navy response: It is specifically the absence of these types of records that provides a line of evidence for why further investigation is not warranted at any former helicopter pad on Vieques. It is not normal protocol to create records when incidents/significant events do not happen; records are created when those things happen. In fact, a significant quantity of records of fires, crashes, and fire training exist throughout Navy facilities. Notably, records of each of these types of events have been found for NSRR (now designated NAPR),

where much of the training and related activities conducted on Vieques originated and were supported. For example, crashes are reported both at NSRR and in the waters offshore of Vieques, but not on Vieques, which is significant evidence that records were being kept, but that crashes did not occur on Vieques. Further, while there is evidence the Navy utilized runways for spray testing (not necessarily with AFFF), no records have been found that helicopter pads were used in this manner. As noted in the General Navy Observation and Response, once the SI data are collected, the Navy and regulatory agencies will have the opportunity to reconvene and discuss whether any additional characterization is warranted, including whether any additional sites/areas should be considered.

108. Table 4-1 (page 1), PFAS usage and releases in the 60's and 70's cannot be ruled out in these areas. As previously mentioned, foaming runways was routinely done at airfields. Significant legacy PFAS concerns have been found at air bases or airports, not only in the U.S., but worldwide. Page 254 of this PDF file has information about fire and rescue demonstrations at the Garcia Airfield in the 1967. There are several online references indicating that the Navy using fluorinated foam since 1967 (additional info and a link is provided in page 254). Include the VNTR Camp Garcia Runway and associated surface water drainage areas, such as VNTR PI 5 and other surface water drainage areas associated to the runway/taxiway/helipads as areas that need to be further investigated for PFAS. Revise report accordingly.

Navy Response: Regarding the fire and rescue demonstration at the Camp Garcia airfield in 1967, please see the responses to EPA Specific Comments 14 and 15. With respect to the Camp Garcia runway and PI 5, please see the responses to EPA Specific Comments 97 and 101. Please also see the response to EPA Specific Comment 105 regarding SWMU 20. However, it should be noted, as stated in EPA Specific Comment 13, "foaming of the runway was an aviation safety practice that consisted of spreading a layer of fire suppression foam on an airport runway/taxiway to prevent fires prior to an emergency landing." No record of emergency landings, crashes, fires, or use of AFFF at the Camp Garcia airfield has been found. Further the interviewee that provided information regarding AFFF use in Vieques (Ortiz) was the same interviewee that provided that information for NAPR. For NAPR, he identified where training using AFFF was performed. Therefore, had training with AFFF been utilized at Vieques for training, it is reasonable to assume he would have provided that information.

109. Table 4-1 (page 2), Area: Include for further investigation the following areas:

- Helipad/Heliport close to runway in Camp Garcia. See Figure titled 'General Site Plan' in Appendix A page 225 of this pdf file.
- Any other helipads/helo landing pads in the base, e.g., there are 2 helo landing pads with the #2048 in NASD, and #1002 in Cerro Matias (is this OP1?), Helo pad with no # (Appendix A: highlighted in green).
- Surface water drainage areas associated with Helipads in VNTR and NASD.
- Identify migration pathways.
- Include figure/map/sketched in the report.

Evaluate other potential sites highlighted in green. See Appendix A pages 61, 63, 64, 216-225, 260 of this pdf file:

- Provide more information about the sites highlighted in green.
- Add them to the list of evaluated sites in Table 4-1 and Table 5-1
- Identify location of these sites in Figures 2-2 and 2-3.
- Evaluate these areas accordingly.

Navy Response: Regarding the helipads, as noted previously, simply the presence of a helipad is not justification for carrying forward the helipads to an SI. There is no evidence a crash or fire training ever occurred at the helipads and an interviewee stated filling and flushing/cleaning of the fire trucks intended to

support the helipads took place at the fire stations. Further, fire training was reportedly conducted at AOC H, which is proposed for investigation via an SI in the PA Report.

Regarding the areas highlighted in green in Appendix A, please see the General Navy Observation and Response at the beginning of this response-to-comment document. Specifically, with respect to Building 2038, this is likely AOC B with the EBS inadvertently referring to it as Building 2030 in a paragraph that describes it; figures in the EBS indicate the Building labeled 2038 is the same as the location of AOC B, which is recommended for further investigation via an SI in the Draft PA Report. Regarding the septic tanks, as noted in Section 6.10.2 of the EBS (PMC, 2000), they operated as no-discharge holding tanks that when full their contents were pumped into a tank truck and discharged to the WWTP (AOC B). Regarding the various public works shops and maintenance/storage areas, their presence alone does not warrant an SI without some lines of evidence demonstrating a PFAS release either occurred or likely occurred. Further, if there had been a spill or if PFAS-containing materials were stored/used at these locations, empty containers/rags/spill-cleanup materials would likely have ended up at the landfill or dump sites. Rather than investigating all shops, a more efficient manner in which to evaluate the potential for there have to been spills or disposal of used containers of PFAS-containing materials is to investigate the landfill and dumps, which is recommended in the PA Report. As noted in the General Navy Observation and Response, once the SI data are collected, the Navy and regulatory agencies will have the opportunity to reconvene and discuss whether any additional characterization is warranted, including whether any additional sites/areas should be considered.

- 110.** Table 4-1 (page 2), VNTR Helicopter Pad at OP 1: Include this area for further investigation. Interview with firefighter showed that AFFF used in the firetrucks were assigned to this area. Include figure/sketches associated with this area.

Navy Response: Please see the responses to EPA Specific Comments 105, 107, and 109.

- 111.** Table 4-1 (page 2), NASD AOC B: Former Wastewater Treatment Plant: Page 307 of this pdf file shows a concrete vault. The vault was not Include in this paragraph nor in the description provided in Section 4.4. Include a description of the vault. Include the vault in Figure 4-2. What was this vault used for within the WWTP process? Include a sketch/figure showing location of the aeration/separation tank.

Navy Response: Please see the response to EPA Specific Comment 63. As noted in the Final No Further Action Report for Nine Sites (CH2M, 2003; added to References section), the WWTP consisted of an aeration tank and a separation tank. The concrete vault can be seen in Figure 6-1 of CH2M (2003). It was located approximately 80 feet southeast of the sewage treatment lagoons. The location of the former pre-fabricated WWTP has been identified in Figure 4-2 and the associated aerial photos in Appendix E.

- 112.** Table 4-1 (page 2), VNTR SWMU 10 and VNTR AOC G: If applicable, revise text based on comments provided in pages 36-37.

Navy Response: Text consistent with the responses to EPA Specific Comments 74 through 80 has been added to Table 4-1.

- 113.** Table 4-1 (page 2), VNTR PI 10: Provide CD ROM with references associated with VNTR PI 10 site and VNTR PI 11. Revise PA report to log this in the Interview Log section and include copies of the interview in Appendix D.

Navy Response: With respect to the CD ROM, please see the response to EPA General Comment 1. With respect to the reference to interviews, the language is directly from the EBS (NAVFAC, 2003), where the results of information gathered from interviewing staff familiar with the facility and its history were documented in Table 4-4 of the EBS; no individual interview logs are included in the EBS or known to have been produced.

- 114.** Table 4-1 (page 2), PI 11: Provide more information about this sanitary wastewater outfall (also seen in the General Site Plan) and this pipeline, Appendix A page 225 of this pdf file). Refer reader to the General Site Plan in Appendix A. Revise the PA report to log this in the Interview Log section and include copies of the interview in Appendix D.

Navy Response: Additional information has been added to Table 4-1, including referring the reader to the General Site Plan. Regarding interviews, please see the response to EPA Specific Comment 113.

- 115.** Table 4-1 (page 2), NASD AOC J: Provide CD ROM with references.

Navy Response: Please see response to EPA General Comment 1.

- 116.** Table 4-1 (page 2), NASD AOC R: Provide CD ROM with references:

Navy Response: Please see the response to EPA General Comment 1.

- 117.** Table 4-1 (page 3), VNTR SWMU 12: There is no evidence of the disposal of empty cans containing AFFF, other than Mr. Ortiz's reference that containers were taken home by fire fighters to be used for water storage. Revise the text to include timeframe when this area was used as a solid waste staging area. Include this area for further evaluation since it was used to stage wood/trailers/metal dumpsters and metal cans.

Navy Response: SWMU 12 was a temporary staging area for domestic-type garbage generated at OP-1 with no known storage of hazardous materials. Information in the EBS (NAVFAC, 2003) and PA/SI Report (CH2M, 2008) indicate it was utilized between 1962 and the early 2000s, taken out of use around the time the Navy ceased training operations. There is no reason to believe empty cans of AFFF would have been staged there, especially considering Mr. Ortiz indicated filling of fire trucks was performed at the fire stations, not at OP-1; there would be no reason for empty cans of AFFF to be carried from where the filling was performed up to SWMU 12 for staging. It is much more reasonable to assume empty cans not reused were disposed of in the facility landfill or dumps, which are recommended for SI in the Draft PA Report.

- 118.** Table 4-1 (page 3), VNTR PAOC X: Provide reference in CD ROM.

Navy Response: Please see the response to EPA General Comment 1.

- 119.** Table 4-1 (page 3), VNTR PI 14: Revise PA report to log this interview in the "Interview Log" section and include copies of the interview in Appendix D.

Navy Response: Please see the response to EPA Specific Comment 113 regarding interviews.

- 120.** Table 4-1 (page 3), VNTR SWMU 6/7: Provide CD ROM with references cited in the PA report. Eliminate 'insignificant' releases. Instead, provide a brief description of findings indicating if the site pose or do not pose threat to health and/or environment. Indicate remedial or removal action taken at the site, if any.

Navy Response: Regarding references on CD ROM, please see the response to EPA General Comment 1. The referenced sentence in the "Rationale" column has been revised to read: "Soil data collected at the sites and analyzed for VOCs, SVOCs, herbicides, pesticides, PCBs, explosives, and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2010a)." Detailed evaluation of the data collected during the ESI and previous investigations can be found in Sections 5 and 6 of the SI/ESI Report (CH2M, 2010a).

- 121.** Table 4-1 (page 3), Car Washes and Auto Hobby Shops header: These sites: NASD SWMU 14, VNTR PI 8, VNTR PAOC J, VNTR PAOC K, VNTR PAOC T/PAOC U are identified as being present at the former VNTR and NASD. The potential for fire trucks to have been washed or serviced in these areas is not discussed. Therefore, the potential for releases of AFFF to have occurred at these areas is unclear. Revise report to evaluate the potential for fire trucks to have been washed or serviced in these areas. If sufficient documentation cannot be obtained, revise the Draft PA Report to carry these sites forward for further investigation as part of the SI. Provide references in CD ROM.

Navy Response: The reason the potential for fire trucks to have been washed or serviced in these areas is not discussed is because evidence was found that they were washed and serviced elsewhere while no evidence was found that they were washed or serviced in the referenced areas. It is unclear to what documentation the commenter is referring. It is not common or standard protocol for records to document what does not occur at sites/areas. The absence of information stating fire trucks were washed or maintained at the referenced

sites is a line of evidence that those activities did not occur there. Conversely, information was obtained stating where fire trucks were cleaned and maintained, and those areas are recommended for investigation during an SI. Nonetheless, as concurred upon at the December 5, 2019, Vieques Technical Subcommittee meeting, the Navy and regulatory agencies concurred upon adding PAOC K to the list of sites for inclusion in the SI to address the potential for fire trucks containing AFFF to have been cleaned at the wash rack. Additionally, as stated in the General Navy Observation and Comment at the beginning of this response-to-comment, it is recommended the SI focus on those areas where a PFAS release is known or most likely to have occurred. Then, once the data are collected and evaluated, the Navy and regulatory agencies can reconvene to discuss the results and whether any additional characterization is warranted, including whether any additional sites/areas should be considered.

Regarding providing references on CD ROM, please see the response to EPA General Comment 1.

- 122.** Table 4-1 (page 3), NASD SWMU 14: Clarify if the firefighting nozzles and hoses were potentially cleaned in this area. Delete “minor” from the next-to-last sentence and delete the last sentence.

Navy Response: Please see the response to EPA Specific Comment 121. Information from that response has been added to the “Rationale” column and based on that, the existing text should remain.

- 123.** Table 4-1 (page 3), VNTR PI 8: Revise rationale to include this site for further assessment. The site was a motor pool. See comment made on Former VNTR motor Pool and Bldg 330. Revise PA report to log this in the Interview Log section and include copies of the interview in Appendix D. From the third-to-last sentence, eliminate ‘relative insignificant’ releases. Instead provide a brief description of findings indicate if the site pose or do not pose threat to health and/or environment or mention the action taken, if any. The phrase at the end of the last sentence implies that a release occurred at the site.

Navy Response: With respect to including this site for further assessment, please see the responses to EPA Specific Comment 121. Please see the response to EPA Specific Comment 113 regarding interviews. The third-to-last sentence has been revised to read: “Further, there is no evidence that fire trucks were washed or serviced in this area while evidence was found that they were washed and serviced elsewhere. It is not common or standard protocol for records to document what does not occur at sites/areas. The absence of information stating fire trucks were washed or maintained at the referenced sites is a line of evidence that those activities did not occur there. Conversely, information was obtained stating where fire trucks were cleaned and maintained, and those areas are recommended for investigation during an SI. Soil data collected at the site and analyzed for VOCs, SVOCs, herbicides, pesticides, PCBs, TPH, and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2010a).” Detailed evaluation of the data collected during the SI and previous investigation can be found in Section 13 of the SI/ESI Report (CH2M, 2010a). Regarding the reference to the last sentence, that was not the intention of the last sentence. The next-to-last sentence has been revised to read: “Based on the above . . . or released at the site.”

- 124.** Table 4-1 (page 3), VNTR PAOC J: Data collected in 2010 was not analyzed for PFAS. Provide a brief description of sampling findings, indicate if the site pose or do not pose threat to health and/or environment or mention the action taken, if any.

Navy Response: The second sentence of the “Rationale” column has been revised to read: “However, no other . . . were found. Soil data collected at the site and analyzed for VOCs, SVOCs, pesticides, PCBs, and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2009).” Detailed evaluation of the data collected during the PA/SI/ESI can be found in the PA/SI Report (CH2M, 2008) and SI/ESI Report (CH2M, 2009).

- 125.** Table 4-1 (page 3), VNTR PAOC K: Data collected in 2003 was not analyzed for PFAS. Provide a brief description of sampling findings, indicate if the site pose or do not pose threat to health and/or environment or mention the action taken, if any.

Navy Response: The second sentence of the “Rationale” column has been revised to read: “Soil data collected at the site and analyzed for VOCs, SVOCs, pesticides, PCBs, and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2009). However, PFAS chemicals were not part of historical investigations. Although no record of washing fire trucks at this wash rack were found, if fire trucks were washed there, it is possible AFFF could have been released during washing. Detailed evaluation of the data collected during the PA/SI can be found in the PA/SI Report (CH2M, 2008b) and No Action/No Further Action Report (CH2M, 2010). Table 4-1 (page 4), VNTR PAOC T/PAOC U: Data collected in 2010 was not analyzed for PFAS. Provide a brief description of sampling findings, indicate if the site pose or do not pose threat to health and/or environment or mention the action taken, if any.

Navy Response: The second sentence of the “Rationale” column has been revised to read: “Soil and groundwater data collected at the site and analyzed for VOCs, SVOCs, pesticides, herbicides (soil), PCBs (soil), TPH (soil), and inorganics indicated there has not been a CERCLA-related release of these chemicals that has resulted in contamination of soil or groundwater at concentrations that would pose a potentially unacceptable risk to human or ecological receptors or leaching concern for groundwater (CH2M, 2009b).” The 2009 reference has been added to the References section.

- 126.** Section 5, first paragraph, third sentence: Update #s of sites.

Navy Response: The paragraph has been updated to include the Camp Garcia runway, VNTR PI 5, VNTR SWMU 20, and VNTR PAOC K, as concurred upon by the Navy and regulatory agencies at the December 5, 2019, Vieques Technical Subcommittee meeting.

- 127.** Section 5, first paragraph, fourth sentence: Delete “of release” as this does not reflect interviewee recollection, e.g., flushing a truck containing AFFF into the environment. It is also stated on this document that former Nuclear Plant building was used for fire training, tires were ignited with diesel and fire was extinguished. Revise accordingly here and throughout the report. Also, add “an” to “interviewee recollection.”

Navy Response: Please see the response to EPA Specific Comment 59. Accordingly, the referenced sentence has been revised to read: “Although no definitive evidence of actual AFFF/PFAS disposal or release has been found, an interviewee recollection (i.e., suggesting fire trucks where AFFF was stored were regularly flushed), the types of”

- 128.** Section 5, first paragraph next to last sentence: Add a statement to make it clear to the public that this effort is exclusively related to PFAS. For example:

New samples will be collected and analyzed for PFAS only to determine if there has been a release of AFFF to the environment or This initiative is conducted to evaluate if there is a release of PFAS related substances into the environment.

Navy Response: The following has been added after the referenced sentence: “The SI will focus on potential releases of PFAS and as such samples collected during the SI will be analyzed for PFAS only to determine if there has been a release of these chemicals to the environment.”

- 129.** Section 5, first paragraph, last sentence: What type of risk evaluation will be conducted at the SI phase? Are you going to do a full Risk Assessment?

Navy Response: The word “evaluation” has been changed to “screening.”

- 130.** Section 5, second paragraph: Revise to reflect the following: There are no public water wells on the island. However, it is not known if groundwater is used as a source of drinking water. Following EPA PA/SI guidance, efforts to identify private water wells will be made at the SI stage to ascertain that a rapid response is not

necessary. Site reconnaissance of the sites/areas indicates the potential for exposure to PFAS-containing media, if present, is low to non-existent. Instead, preparation of an SI SAP that documents the rationale and approach for site/area-specific sample collection, analysis, and evaluation is recommended.

Navy Response: The paragraph has been replaced with the text in the response to EPA Specific Comment 3.

131. Table 5-1, header: Revise to include additional sites.

Navy Response: The table has been updated to include the Camp Garcia runway, VNTR PI 5, VNTR SWMU 20, and VNTR PAOC K, as concurred upon by the Navy and regulatory agencies at the December 5, 2019, Vieques Technical Subcommittee meeting.

132. Table 5-1, NASD AOC H: Based on an interview, the first bullet seems to be associated with the NASD former fire station Building 2046. Revise accordingly. A new bullet can be added to this bldg.: “reportedly diesel fuel was poured over rubber tires inside the building, ignited to simulate structural fires, and extinguished during training operations.”

Navy Response: The first bullet has been revised to read: “Based on information obtained from an interviewee, AFFF was utilized on fire trucks during at least part of the time the former power plant was used for fire training.” A second bullet has been added that reads: “Reportedly, diesel fuel was poured over rubber tires inside the building, ignited to simulate structural fires, and extinguished during training operations.”

133. Table 5-1, NASD Former Fire Station Building 2046: Add bullet: “Storage of the AFFF was reported to be in Conex containers less than 100 feet to the southwest of the main building”

Navy Response: Bullet added as requested.

134. Table 5-1, NASD Former Fire Station Building 2046, second bullet: add: ‘containing AFFF were flushed once a month and . . .’

Navy Response: Bullet revised as requested.

135. Table 5-1, NASD Former Fire Station Building 2046, third bullet: As stated before phrase is irrelevant. Ortiz stated, “firetrucks were filled with AFFF” and “fire trucks were flushed once a month, but no foam was used.” Even if no ‘additional’ foam was used, when the truck was flushed the AFFF was released into the environment. Therefore, a release of AFFF is suspected. Revise all applicable text of the PA draft report.

Navy Response: Please see responses to EPA Specific Comments 43 and 44. However, in that this table is summarizing information pertinent to recommending the site for and SI, the bullet has been revised to read: “Annual pump tests and monthly cleaning were performed onsite.”

136. Table 5-1, Potential Former VNTR Motor Pool Area and Former Fire Department Building 330, Area Assessed: And Building 340.

Navy Response: The “Area Assessed” has been revised to read: “Potential Former VNTR Motor Pool Area (including Building 340) and Former Fire Department Building 330.”

137. Table 5-1, Potential Former VNTR Motor Pool Area and Former Fire Department Building 330, second bullet: Add rationale for assessing building 340.

Navy Response: The following has been added after the first bullet: “No historical information has been found regarding the use of Building 340. However, given its close proximity to the former fire department building (Building 330) and that historical imagery shows no structure in the area referred to by the interviewee, it is possible Building 340 was associated with the motor pool.”

138. Section 6: Include copies of all the references cited in the PA report in a CD ROM. Add: a footnote indicating that references cited in the PA are provided in the enclosed CD ROM.

Navy Response: Please see the response to EPA General Comment 1. In addition, the requested footnote has been added to the References section.

Appendices

139. Appendix A, EBS Report, Appendix B, Table B-1: Pages 61, 63, 64 of this pdf file.

Highlighted in green are several buildings that may be a concern for PFAS. It is unknown if these areas were included in the report since there is no reference to them in the text.

Provide more information on all the sites highlighted in green.

- Identify location of these properties in a map.
- Identify which of these properties are already included in this assessment report.
- Provide more information on properties not included in the report.
- Evaluate the areas not included in the report.
- Include new areas, if any, in Table 4-1 and Table 5-1
- Revise report to correlate building with corresponding sentence/paragraph.
- If no information is available; then, include each area for further evaluation in the form of an SI.

Navy Response: Please see the response to EPA Specific Comments 107 and 109.

140. Appendix A, EBS Report, Appendix B, Table B-1, Building 13: Which is this area within the report? When comparing map in page 64 with Figure 2-2, it seems that this area is identified as AOC H. Confirm. If positive, the description given for AOC H does not mention that the area was used as a PW maintenance storage. If negative, indicate location of this building and include area in Table 4-1 and Table 5-1 if applicable. Revise report accordingly.

Navy Response: Building 13 is the AOC H building. Please see AOC H ROD (NAVFAC, 2008). This information, with reference to Table B-1 in Appendix A, has been added to Section 4.1.1. Please note that the original building description listed in Table B-1 is not inconsistent with historical information regarding AOC H; for example, the AOC H ROD states it was used for storage of power generation equipment from 1941 to 1943 (prior to its use for fire training from the 1960s to the 1980s).

141. Appendix A, map following Table B-1, reference to map potential labeled 2048: Helo Landing Pad? See previous comment to include area for further investigation.

Navy Response: Please see the response to EPA Specific Comments 107 and 110.

142. Appendix A, map following Table B-1, reference to map label 2048: 2048 is identified as Helo Landing Pad in page 63 of this pdf file. There are two areas labeled 2048. Add 2nd area labelled as 2048 as an area to be further investigated in the form of an SI. Identify buildings evaluated in this report with labels to make it easier to correlate them with pages 61 and 63.

Navy Response: Please see the response to EPA Specific Comments 107 and 110.

143. Appendix A, pdf page 201, map entitled “Proposed Sanitary Landfill, Vieques, PR, 13 March 1986”: Is this page associated with the transfer of land to the Municipality of Vieques for their own landfill? If this page is associated with a Navy landfill; then add a reference to the text. Revise report to clarify if the landfill is property of the Navy or the municipality. Add a label stating ownership of landfill (like the 'box' stating property line).

Navy Response: Yes. Reference to this transfer of land has been added to Section 2. The land where the Municipality constructed the Municipal landfill was expropriated by the Navy in the late 1980s. However, prior to expropriating the land, the area was not used as a landfill or for waste disposal.

144. Appendix A, pdf page 216, entitled: “BUILDINGS, STRUCTURES, UTILITIES AND MISCELLANEOUS FACILITIES”: Pages 216-221, 225 of this pdf file.

Highlighted in green are several buildings that may be a concern for PFAS. It is unknown if these areas were included in the report since there is no reference to them in the text.

Provide more information on all the sites highlighted in green.

- Identify location of these properties in a map.
- Identify which of these properties are already included in this assessment report.
- Provide more information on properties not included in the report.
- Evaluate the areas not included in the report.
- Include new areas, if any, in Table 4-1 and Table 5-1
- Revise report to correlate building with corresponding sentence/paragraph.
- If no information is available; then, include each area for further evaluation in the form of an SI.

Navy Response: The sites/areas representing the most likely sites/areas where a release(s) of AFFF/PFAS would be identified, if a release(s) occurred. As noted in the General Navy Observation and Comment, following completion of the sampling and evaluation of the results from sampling the most likely release areas, the Navy and regulatory agencies will have the opportunity to reconvene and discuss whether any additional characterization is warranted, including whether any additional sites/areas should be considered. Please also see previous responses that address adding the Camp Garcia runway, PI 5, and SWMU 20.

- 145.** Appendix A, pdf page 218, BUILDING NO 1025 OLD NORTH SMALL CRFT RAMP and 1026 OLD SOUTH SMALL CRFT RAMP: are these ramps associated with the LCU units?

Navy Response: That is a reasonable assumption.

- 146.** Appendix A, pdf page 219, HELO-PAD: Where was this helo pad located?

Navy Response: Please see the response to EPA Specific Comments 107 and 110.

- 147.** Appendix A, pdf page 221, OUTFALL SEWER LINE: Is this the outfall sewer line shown in page 225 of Appendix A, General Site Plan?

Navy Response: Given that the referenced document is related to transfer of former east Vieques to DOI, it is reasonable to assume the outfall sewer line referred to here is what is shown on the General Site Plan (pdf page 225).

- 148.** Appendix A, pdf page 221, COMBINED SWGE TREATMENT: Provide more info, for example: where was this combined sewage treatment plant? Is this plant included in the PA report?

Navy Response: Given that the referenced document is related to transfer of former east Vieques to DOI and that there was one known sewage treatment plant at Camp Garcia, it is reasonable to assume the combined sewage treatment referred to here is SWMU 10/AOC G or a predecessor located in the same place.

- 149.** Appendix A, pdf page 221, SEPTIC TNK/DRAIN FIELD: Provide location. More info

Navy Response: Given that the referenced document is related to transfer of former east Vieques to DOI, it is reasonable to assume the septic tank/drain field is the sanitary septic tank/drain field currently in use for office/housing facilities at Camp Garcia.

- 150.** Appendix A, pdf page 225, "GENERAL SITE PLAN": Include the Heliport as an area for further investigation. Identify surface water drainage areas associated with the heliport. Include drainage areas for further investigation. Provide Figure/Sketch/photographic documentation.

Navy Response: Please see the response to EPA Specific Comments 107 and 110.

- 151.** Appendix A, pdf page 225, "GENERAL SITE PLAN": EXISTING 18" OUTFALL SEWER, Existing 18" outfall sewer. Provide more information. The line for outfall sewer goes directly to the Caribbean Sea.

Navy Response: This is PI 11; see associated discussion in Table 4-1.

152. Appendix A, pdf page 225, “GENERAL SITE PLAN”: Effluent line. Provide more information. This effluent line seems to explain the odd delineated shape showing the "scars lines" 'pipe discharge' mentioned in 1988, 1989, 2000 reports. If this was an effluent line from the sewage treatment facilities; then it seems that due to the proximity of the area to the lagoon (a 'lagoon' in google maps) there could be a groundwater to surface-water discharge to Bahia Tapón and/or to the wetland area east of Bahia Tapón. If there is not enough information; then include the wetland and the bay in the SAP SI.

Navy Response: Please note that features labeled “NEW” on the General Site Plan may not have been installed or, if they were, they may never have been put into service. As noted in Section 4.6.1 of the Draft PA Report, the new wastewater treatment lagoons were no-discharge, possibly due to the decline of activity and associated domestic wastewater generation. Nonetheless, investigation of the SWMU 10/AOC G area will provide the necessary information regarding whether a PFAS release associated with wastewater treatment at Camp Garcia occurred and, if so, the Navy and regulatory agencies can reconvene to discuss the SI results and whether additional characterization is warranted, including whether any additional sites/areas should be considered.

153. Appendix A, pdf page 226, “Roosevelt Roads Naval Station Complex, Puerto Rico” map, “Fresh Water Wells”:

-Is this aquifer described in the groundwater section (page 21 of this pdf file?)

-Who owned/operated these wells PRASA or Navy?

Include this info in Section 2.2.3.

Navy Response: The wells likely would have been located within the Resolución aquifer, but no records were found indicating these wells were owned by the Navy or PRASA. Please also see the response to EPA Specific Comment 18.

154. Appendix A, pdf page 229, “CAMP GARCIA VIEQUES” map: Wells?

Navy Response: Please see the response to EPA Specific Comment 18.

155. Appendix A, pdf page 229, “CAMP GARCIA VIEQUES” map: Heliport

Navy Response: Please see the response to EPA Specific Comments 107 and 110.

156. Appendix C, Summary of Records Reviewed Table, page 1 of 11, first entry, “fire and rescue demonstration were... at the Garcia airfield”: Include this information in the Garcia Airfield Narrative, in Table 4-1 and 5-1

Navy Response: Please see responses to EPA Specific Comments 14 and 15.

157. Appendix C, Summary of Records Reviewed Table, page 1 of 11, first entry, “February 21, 1967”: As mentioned in a comment on page 15, Navy started using AFFF since 1967. Camp Garcia airfield was used for fire demonstrations. This should be included in the text. Camp Garcia runway/taxiway along with its drainage areas have to be included for further investigation in the form of an SI since AFFF may have been used.

Navy Response: Please see the responses to EPA Specific Comments 14 and 15. Please also see previous comment responses that have added the Camp Garcia runway and PI 5 to the recommended SI list of sites.

158. Appendix C, Summary of Records Reviewed Table, page 7 of 11, first entry, “Structural Fire Company #3 was established at the Vieques Island Ammunition complex”: Identify location of the Vieques Island Ammunition complex and the Fire company #3 on a map. Provide additional information associated with these two areas. Include site in Table 4-1. Evaluate this site as part of the report. Include the Fire Company #3 as an area that will be further investigation.

Navy Response: The “complex” is referring to the Navy facilities on Vieques. No other information regarding “Fire Company #3” was found. However, the locations of fire stations were identified on the former NASD and VNTR via the records search and interviews.

- 159.** Appendix D, PFAS Preliminary Assessment Questionnaire (Ortiz): The interviewer should have interjected follow-up questions to clarify some of the interviewee statements.

Follow up questions:

It is stated in question #1 that '50-gallons of AFFF were stored... in the trucks' while questions #2 and #3 make reference to '5-gallons of AFFF concentrate containers.

-What's the difference between the two type of containers? -Where they used for different purposes?

-How often did they use the 50 gallons container?

-If the 50 gallons of AFFF were not used at once, what was done with unused portion?

-Where was the AFFF utilized?

-Where did they dispose of the empty 50-gallon container/drum?

Navy Response: Comment noted. Follow-up questions can be pursued during preparation of the PFAS SI SAP to help refine the characterization approach including areas to be sampled, as warranted.

- 160.** Appendix D, PFAS Preliminary Assessment Questionnaire (Ortiz), AFFF Purchasing, Handling, and Storage, question 1: "50-gallons of AFFF"; Follow up questions:

-When/How/Where did they use the 50-gallons stored on the trucks?

-How/Where was the AFFF transfer to the truck?

-Explain procedures/protocols used while handling/transferring/using the AFFF.

Navy Response: Please see the response to EPA Specific Comment 159.

- 161.** Appendix D, "PFAS Preliminary Assessment Questionnaire" (Ortiz), AFFF Purchasing, Handling, and Storage, question 1: "The fire trucks were also used on standby to support LCU units (the boats that bring the trucks on the main base).";

1- LCU - expand the acronym

2- Identify this area or LCU areas on a map and add it as a reference.

2- Add this area(s) as a potential site(s) moving forward to the SI.

3- Add LCU to acronym and abbreviation list.

Navy Response: The "LCU" acronym has been defined and added to the acronym list. It is unclear to what "area(s)" the commenter is referring. Further, the information does not suggest a need to add additional site(s) as no information was found that would suggest an AFFF release occurred while the fire trucks were on standby and no information was found that indicated they responded to a crash as trucks were being offloaded from LCUs.

- 162.** Appendix D, "PFAS Preliminary Assessment Questionnaire" (Ortiz), AFFF Purchasing, Handling, and Storage, question 1: "The fire trucks equipped with AFFF were stored at the fire station on the west side of Vieques, right next to the dorms."; Identify this area on a map and add the reference to the report.

Navy Response: The approximate location of this area has been identified on Figure 4-2.

- 163.** Appendix D, "PFAS Preliminary Assessment Questionnaire" (Ortiz), AFFF Purchasing, Handling, and Storage, question 2: "5-gallon containers"; Did you use the following procedure with the 5-gallon containers? "firefighting hose was connected to the nozzle, and the pickup tube was inserted into a five-gallon foam concentrate".

Navy Response: As stated by the interviewee, the AFFF was dumped into the fire truck or transferred using an induction pump.

164. Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), AFFF Purchasing, Handling, and Storage, question 2: “The fire trucks were filled with the AFFF”; Follow up questions:

- Storage capacity of the firetrucks?
- What was the procedure to mix the AFFF?
- Clarify if the AFFF concentrated product was mixed or combined with water or any other product in the firetrucks?
- If mixed with water, how many gallons were needed to achieve the desired end product?
- If it was mixed with any other chemical, please specify name.

Navy Response: Please see the response to EPA Specific Comment 159.

165. Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), AFFF Purchasing, Handling, and Storage, question 2: “induction pump to fill”; Follow up questions:

- What was done with the induction pump after each used?
- Were the pumps disposable? If positive where were the pumps disposed of?
- Were they washed? If positive, where?

Navy Response: Please see the response to EPA Specific Comment 159.

166. Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), AFFF Purchasing, Handling, and Storage, question 3: “containers were stored in a Conex less than 100 feet from the right side of the fire station”; Identify this area on a figure/map and add the reference to the report. The reference could be the site reconnaissance sketch.

Navy Response: The approximate location of this feature has been added to Figure 4-2.

167. Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), AFFF Purchasing, Handling, and Storage, question 3a: “The structural fire trucks were flushed once a month, but no foam was used.” and “Pump tests were performed once a year, but no foam was used”; Follow up questions:

- What does it means flushing the trucks without foam?
- What was the content in the truck when it was flushed?
- Describe pumps in this context?
- What are the 'pump tests' Mr. Ortiz is referring to? Explain

Navy Response: Please see the response to EPA Specific Comment 159.

168. Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), Firefighting Training Areas: The first question to Mr. Prapuolenis was about firefighting training in the former power plant AOC H. Why wasn't that question posted to Mr. Ortiz if he was so knowledgeable of the west end operations?

Navy Response: The flow of the questions and dialogue were based on individual-specific interaction and adapted accordingly. Please see the response to EPA Specific Comment 159 regarding the potential for perform follow-up interviews.

169. Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), Firefighting Training Areas, question 1: Ok, there were no fire training ‘pits’. However, practices/drills/trainings are regularly conducted by firefighters. It is known that trainings were conducted in the former power plant. Follow up questions:

- Where did they practice or train?
- What type of drills were conducted?
- What chemicals were used to extinguish the fire during the drills?

Navy Response: Please see the response to EPA Specific Comment 159.

- 170.** Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), Trucks and Trailers, question 2: “Spray Testing”; Follow up question: -How were the nozzles tested?

Navy Response: Please see the response to EPA Specific Comment 159.

- 171.** Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), Trucks and Trailers, question 3: “trucks were refilled with 5-gallon AFFF”; Follow up questions:

- Where did they use the AFFF?
- How frequently was the AFFF used?
- How often were the trucks refilled?

Navy Response: Please see the response to EPA Specific Comment 159.

- 172.** Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), Trucks and Trailers, question 3a: “It is possible that some AFFF was inadvertently released on the ramp in front of the fire station”; Statement in page 29 of this pdf file has to be changed to conform with this answer.

Navy Response: Please see the response to EPA Specific Comment 46.

- 173.** Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), Trucks and Trailers, question 3c: “They were rinsed out”;

- Where did the firefighters rinse out the empty containers?
- Which container the 5-gallon or the 50 gallon? or both?

Navy Response: It is reasonable to assume they were rinsed out where they were used to fill the fire trucks. Please see the response to EPA Specific Comments 46 and 159.

- 174.** Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), Records, Spill logs, Historical Information, question 2: “Do you have any recollection or records of AFFF being used in response”; All the answer are NO.

Follow up question:

Explain how/when/for what and where was the AFFF in the firetrucks/AFFF in the base used for?

Navy Response: Please see the response to EPA Specific Comment 159.

- 175.** Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), Records, Spill logs, Historical Information, question 4: “It is possible that some AFFF was inadvertently released on the ramp in front of the fire station.”; Statement in page 29 of this pdf file has to be changed to conform with this answer.

Navy Response: Please see the response to EPA Specific Comment 46.

- 176.** Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), Records, Spill logs, Historical Information, question 5: “AFFF wasn’t used for responses”; Follow up question:

- If AFFF was not used during a fire response; then, how/where was the AFFF use?

Navy Response: Please see the response to EPA Specific Comment 159.

- 177.** Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), General Information heading: After this section add the name of the person that conducted the interview as shown in Mr. Prapoulenis interview.

Navy Response: The requested information has been added.

- 178.** Appendix D, “PFAS Preliminary Assessment Questionnaire” (Ortiz), General Information, question 1: “Angel Carambot”; From whitepages.com

Mr. Carambot former address Vieques PR

Address: 224 Hathersage Dr
 Kathleen GA 31047-4500
 Phones: (478) 953-6685
 (478) 218-2606

-Where you able interview Mark Berkermeir, John Ashford or any other former firefighter?

Navy Response: The questionnaires presented in Appendix D represent all interview information collected as part of the PA Report preparation. The log at the end of this appendix shows multiple attempts were made to contact individuals. Please also see the response to EPA Specific Comment 159.

- 179.** Appendix D, "PFAS Preliminary Assessment Questionnaire" (Ortiz), General Information, question 1: "(now at Govens AFB (? – check spelling);" Revise text

Navy Response: Text revised as requested.

- 180.** Appendix D, "PFAS Preliminary Assessment Questionnaire" (Prapuolenis), AFFF Purchasing, Handling, and Storage, question 1: follow up question: what is blood meal foam?

Note:

Blood meal used as a firefighter foam was discovered in 2006 by the University of Alberta. Info obtained from: <https://purduephil.wordpress.com/2006/02/07/cattle-byproduct-may-help-in-fire-fighting/>

Blood meal for foam was patented in 2010. Info obtained from:
<https://patentimages.storage.googleapis.com/da/af/0b/a9afc187605538/US20100261889A1.pdf>

Based on these articles, reference to the blood meal foam in the text on page 29 should be eliminated.

Navy Response: Please see the response to EPA Specific Comment 48.

- 181.** Appendix D, "Interview Log" header: Add to Appendix D documentation (copies) of all the interviews mentioned or referred to in this PA report. For example, there is an interview mentioned in Section 4.6.1, Description and Operational History, Pages 4-4 to 4-5: The text states, "This information was corroborated by an interview with the former Water Program Manager, NAPR Environmental Division (CH2M, 2010a)." that is not included in this section.

Revise report to document all the interviews mentioned in the report.

Navy Response: Please see responses to comments regarding specific historical interviews.

- 182.** Appendix D, "Interview Log," Page 1 of 2, line 5, "Madeline Rivera"; Ms. Rivera was only contacted once on February 25, 2019.

Clarify why more attempts to contact the Vieques NAVFAC contact were not made.

Navy Response: Please see Section 4.2 of the NASD EBS (PMC, 2000) and the VNTR EBS (NAVFAC, 2003). Madeline Rivera provided a significant amount of historical information reviewed during the PA.

- 183.** Appendix D, "Interview Log," Page 2 of 2, "February 25, 2019"; Any additional follow up with these people?

Navy Response: Please see the response to EPA Specific Comment 159.

- 184.** Appendix E, NASD AOC H, first photo: Add cardinal point reference, e.g., 'facing N, E, S, W'

Navy Response: The requested information has been added to the caption.

- 185.** Appendix E, NASD AOC B, fifth photo: What was this structure used for?

Revise report accordingly.

Navy Response: Please see the responses to EPA Specific Comments 63 and 112.

- 186.** Appendix E, NASD AOC B: 1985 aerial photo: AOC B

- Expand area of study as shown to include footprint of WWTP as seen on Aerial photos dated: 1985, 1994 (2), 2004, 2007 and any historical document.
- Include areas devoid of vegetation in this aerial map to the NW and SE of the WWTP.
- Identify and add Sludge management areas.
- Identify location of WWTP structures: aeration and separation tank.
- Identify location of concrete block shown in page 307.

Navy Response: The study area, including identification of pertinent features and rationale, will be included in the SI SAP.

187. Appendix E, NASD AOC B, 1994 aerial photo: NASD Former Fire station Building 2046 at Public Works Area

- Expand area of study as shown to delineate area of study include sheds, external structures associated with fire station operations based on this Imagery and the next and any other historical documents.
- Indicate location of Conex boxes.

Navy Response: The study area, including identification of pertinent features and rationale, will be included in the SI SAP.

188. Appendix E, Potential Former VNTR Motor Pool Area and Former Fire Department Building 330, 1962 aerial photo: Expand area of study as shown to include Bldg 340 as explained in page 41 of this pdf file.

Navy Response: Please see the response to EPA Specific Comment 67. The study area, including identification of pertinent features and rationale, will be included in the SI SAP.

189. Appendix E, VNTR SWMU 10 and VNTR AOC G, first photo: Add cardinal point reference, e.g., 'facing N, E, S, W'

Navy Response: The requested information has been added to the photo caption.

190. Appendix E, VNTR SWMU 10 and VNTR AOC G, 1979 aerial photo: There is a small square (white) that seems to be bigger than Building AOC G.

- What was this structure and its purpose?

Navy Response: No information was found regarding the structure.

191. Appendix E, NASD SWMU 6, first photo: Old photographs 2008, 2009 in Appendix E should include a sentence alluding to remediation or to any positive action taken at the sites; e.g., 'photo shows conditions of SWMU 6 before remediation took place, or waste was removed, or site was remediated in XX year, as applicable.

Navy Response: The requested information has been added to the photo caption.

192. Appendix E, NASD SWMU 6, seventh photo: "remained to be disposed of"; Is this statement accurate as of 2019? Add a sentence to describe actual conditions at the site or refer the reader to the last photo showing actual conditions at the site.

Navy Response: The requested information has been added to the photo caption.

193. Appendix E, NASD SWMU 6, eighth photo: Add a description of the site as of the date shown in the photo 2016. e.g., ongoing remedial phase; O&M, remediation completed on XX date, etc.

Navy Response: The requested information has been added to the photo caption.

194. Appendix E, NASD SWMU 7, first photo: Along with the photo description, add a sentence to each SWMU 7 photographs dated 2009 alluding to remediation or any positive action taken since 2009; e.g., 'photo shows

conditions of SWMU 7 before remediation took place, or waste was removed, or site was remediated in XX year, as applicable.

Navy Response: The requested information has been added to each SWMU 7 photo caption.

195. Appendix E, VNTR SWMU 1, first photo: Add:

- Actual conditions of the site as of 2018 or 2019.
- A brief sentence about what has been done in terms of remediation at the site.

Navy Response: The requested information has been added to the photo caption.

**Responses to EPA Follow-up Comments on the
Draft Final Preliminary Assessment Report for Per- and Polyfluoroalkyl Substances
Dated May 2019**

**Atlantic Fleet Weapons Training Area – Vieques
Former Naval Ammunition Support Detachment and
Former Vieques Naval Training Range
Vieques, Puerto Rico**

General EPA Observation and Response:

A number of comments in the redline document uses the following or similar language:

- “... there is no evidence that fire trucks were washed or serviced in this area while evidence was found that they were washed and serviced elsewhere. It is not common or standard protocol for records to document what does not occur at sites/areas. The absence of information stating fire trucks were washed or maintained at the referenced sites is a line of evidence that those activities did not occur there. Conversely, information was obtained stating where fire trucks were cleaned and maintained, and those areas are recommended for investigation during an SI....” (Table 4-1, Pages 55-56, Rationale column for NASD Helicopter Pad near MOV; VNTR Helicopter Pad at OP 1; NASD SWMU 14; VNTR PI 8; VNTR PAOC J; and VNTR PAOC T/PAOC U)
- “A thorough review of records, internet searches, and interviews was completed to identify areas where AFFF and other PFAS-containing materials were used or released. Based on this, there is no reason or historical information that would suggest the need for including additional motor pool/auto shops/public works maintenance areas in the SI solely because they are motor pools, auto shops, or public works maintenance areas...” (Navy Response to Comment 95, page 414)
- “...There is no reason to believe empty cans of AFFF would have been staged there, especially considering Mr. Ortiz indicated filling of fire trucks was performed at the fire stations, not at OP-1...” (Navy Response to Comment #117, page 419, second sentence)
- “AFFF release occurred while the fire trucks were on standby and no information was found that indicated they responded to a crash as trucks were being offloaded from LCUs.” (Navy Response to Comment #161, Page 426)

EPA agreed to investigate the potential for PFAS sites using a tier-approach by sampling those areas where PFAS releases would be more likely first; then, if PFAS are detected in the samples, as agreed by the Navy and regulatory agencies at the December 5, 2019, Vieques Technical Subcommittee meeting, we will reconvene to discuss whether any additional characterization is warranted, including whether any additional sites/areas should be considered as a potential PFAS sources.

EPA does not agree with the statements described in the previous page for the following reasons:

- The draft document repeatedly states that the file search conducted during the PA ‘provided no evidence of a release of AFFF or other PFAS containing substances’ or ‘document review or internet search did not yield any results of the usage, handling, storage, disposal of AFFF in the NASD or VNTR’ (Sections 3.1.2, 3.1.3, 3.1.5, Tables 3-1 and 3-2, Table 4-1, etc.).
- Besides identifying structures and activities associated with firefighting or dump sites, the only line of evidence associated with AFFF was obtained through an interview from a former employee who provided information about the practices of AFFF usage, storage, and handling from 1998-2001 (Sections 1.2.2, 2.1.3, Appendix D, etc.). The information obtained from the interview will allow us to assess some areas

that otherwise we would not have considered for sampling, because the exhaustive file search conducted for the PA did not yield any results or findings about AFFF usage, storage, or disposal in Vieques.

- EPA concur that it is not common or standard protocol for records to document what does not occur at sites/areas; however, there should be records of what did occur. If AFFF was handled in Vieques, as stated by Mr. Ortiz; then, the file search should have provided, as a minimum, information about storage, usage - including quantity, location, protocols (SOPs) on how to handle of the product, or to disposed of the empty AFFF drums at the AFWTA. The usage/handling of AFFF in Vieques should have been part of the Navy records, inventories, protocols, etc.; however, none was found. Note that there are other relevant records where no information was found (e.g., Navy Response to Comments #158, 190, etc.).
- Mr. Ortiz statements covered 4 out of 33+ years of AFFF usage in Vieques. Operating procedures on how to handle hazardous substances/wastes have changed drastically over the years since the inception of the environmental laws in 1970. SOPs on how to handle hazardous materials were scarce or non-existent. There was little knowledge about improper use or disposal of hazardous material/waste and how it would affect the health and environment. The industry has been changing procedures all along as more information becomes available. Therefore, we cannot extrapolate Mr. Ortiz first-hand knowledge of 4 years, at the end of the 20th Century-beginning of this Century to the 1960s when AFFF was officially introduced to the industry. Mr. Ortiz provided valuable but minimal information about AFFF usage, storage, disposal during his short-term employment in Vieques.
- The lack of reported fires, crashes, or fire training is insufficient to confirm that AFFF was not used in other areas such as: NASD Helicopter Pad near MOV compound; LCUs, Helipads, etc.
- Due to the lack of records or interviews documenting AFFF usage in Vieques from the mid-1960s-1998, we can only surmise that it was used. From 1998-2001, the firefighters took the empty AFFF containers to their homes. Who knows what was done by the firefighters from the mid-1960s to 1998? They could have disposed of empty drums or containers anywhere or they could have washed or flushed the trucks elsewhere because it was more convenient or because the nearest car washed was temporarily out of service, etc. The point is that there are no records or interviews to document what happened. Therefore, since no records were found during the file search, we cannot rule out other methods of AFFF handling or disposal. Therefore, since it is unknown where and how AFFF was used/stored or disposed; we cannot rule out other potential for PFAS sources, such as: NASD Helicopter Pad near MOV; VNTR Helicopter Pad at OP 1; NASD SWMU 14; VNTR PI 8; VNTR PAOC J; and VNTR PAOC T/PAOC U, buildings or structures identified in Appendix A or Appendix B Real Property Records, such as: helipad/heliport/ helo-pad/helo landing pad, areas associated to the LCUs e.g., BUILDING NO 1025 OLD NORTH SMALL CRFT RAMP and 1026 OLD SOUTH SMALL CRFT RAMP, septic tank/DN fields, other motor pool areas/auto shops/PW maintenance areas in the VNTR and NASD, etc. As agreed in December 5, 2019 Technical Sub-committee meeting, we will reconvene to discuss whether any additional characterization is warranted, including whether any additional sites/areas should be considered as a potential PFAS sources.

For the reasons discussed described above:

- The potential for PFAS determination in Table 4-1, 2nd column should be changed from a “NO” to “To Be Determined” or to a similar classification for the following sites: Helicopter Pad near MOV; VNTR Helicopter Pad at OP 1 NASD; SWMU 14; VNTR PI 8; NASD J, VNTR PAOC J; and VNTR PAOC T/PAOC U.

Navy Follow-up Response: The “No” entries for the areas listed will be revised to: “Unlikely1” and footnote 1 will be defined at the bottom of the table as: “Information compiled during the Preliminary Assessment indicates an AFFF/PFAS release in this area was unlikely (see associated rationale). However, based on the tiered characterization approach concurred upon by the Navy and regulatory agencies, following evaluation of data collected from the “tier 1” areas (i.e., those with “Yes” entries in this table), the agencies will reconvene to discuss whether conclusions drawn for other sites remain valid or whether any additional characterization is warranted, including whether any additional sites/areas should be

considered as a potential PFAS sources.” In addition, a paragraph has been added after the first paragraph of Section 4 that summarizes the concurred-upon approach.

- The following language and similar wording should be changed or eliminated to reflect knowledge and conditions at the sites: ‘...no evidence that fire trucks were washed or serviced in this area while evidence was found that they were washed and serviced elsewhere’. ‘It is not common or standard protocol for records to document what does not occur at sites.’ The ‘absence of information stating fire trucks were washed or maintained at the referenced sites is a line of evidence that those activities did not occur there.’ ‘Conversely,’ information was obtained stating where fire trucks were cleaned and maintained’...

Navy Follow-up Response: The Navy feels the statements are accurate based on the information collected to date. However, as noted in the previous response, these conclusions will be evaluated upon the tier 1 characterization, and this information has been added to the PA Report.

- Table 4-1, pages 55-56 - Add a sentence to the rationale for the ‘To be determined’ areas stating: ‘following completion of the sampling and evaluation of the results, the Navy and regulatory agencies will reconvene and discuss whether any additional characterization is warranted on this area’ or something to the effect.

Navy Follow-up Response: Please see the response to the first comment. The information has been added to the table.

- Due to the lack of documents found during the file search, it is recommended to interview former employees stationed in those potential for PFAS areas where little information is known in an attempt to find more details about AFFF activities conducted during the mid-1960s to late-1990s at the AFWTA.

Navy Follow-up Response: During preparation of the PFAS Site Inspection SAP, an attempt will be made to contact additional former employees as suggested. In addition, an attempt will be made to contact the former employees interviewed during the Preliminary Assessment to address the questions posed by EPA during review of the Draft Preliminary Assessment Report. This information will be added to the end of the first paragraph of Section 5 of the Preliminary Assessment Report.

Specific Comments

-New Comment

Executive Summary, Section 4.1-4.13, and comment #103, Pages 2 and 416

- • Page 2: “...14 sites were identified as potential PFAS sources/release areas...”;
- • Page 416: “...AOC G and SWMU 10 are different sites; ...”.

EPA comment: Each site should be discussed separately. If AOC G and SWMU 10 sites are different; then, they should be evaluated separately. If they are combined due to their association; then, there are 13 and not 14 sites. There are 13 bullets in the Executive Summary and 13 potential areas discussed in Section 4.1-4.13. Revise document accordingly.

Navy Follow-up Response: The sites are technically different because they have different designations. However, they performed in conjunction with each other and, therefore, the combined discussion is more appropriate because it demonstrates the association.

Navy Response to EPA, Comment # 14, page 398 states: “A fire and rescue demonstration was performed by the crash crew at the Garcia airfield in 1967, 2 years before the military specification (MILSPEC) specifying use of PFAS in AFFF...”.

EPA Comment: Not that it matters since the airfield and PI5 were included for further investigation; but EPA reiterates previous comment. There is evidence that the Navy got started to use AFFF MILSPEC since the mid-1960s. Since the file search conducted for this PA did not yield any results; there, is a possibility that that the recorded fire and rescue activities in 1967 were conducted either with, blood meal, protein foam, light foam or to demonstrate the effectiveness of the new product: AFFF. Revise text to assume that any of the foams could have been used in the demonstration.

Navy Follow-up Response: As stated in the fourth paragraph of Section 1.2.2, AFFF containing PFAS was developed in the 1960s, but the MILSPEC specifying its use was not issued until November 1969, which was 2 years after the Garcia Airfield demonstration. The discussion in Section 1.2.2 demonstrates there is significant weight-of-evidence that AFFF was not used in the 1967 demonstration. However, the following sentence has been added to the end of the second paragraph of Section 1.2.2: “Nonetheless, given that PFAS-containing AFFF was developed in the 1960s, to address the potential that the 1967 demonstration could have utilized PFAS-containing AFFF, the Garcia airfield is recommended for investigation via a Site Inspection (SI), as discussed in Section 4.”

-New Comment

Figures ES-3 and 2-3, Pages 8 and 28

EPA Comment: Include Cerro Matias in Figures ES-3 and 2.3

Navy Follow-up Response: The location of Cerro Matias has been added to Figures ES-3 and 2-3.

-New Comment

Section 2.1.3, Page 22

- First sentence reads: “... in small quantities (5 gallons) ...”

EPA Comment: Eliminate phrase, “in small quantities (5 gallons).” Based on the file search, there is not enough information to quantify the amount of AFFF used/handled at the base or how often where the fire trucks filled/refilled, etc.

Navy Follow-up Response: There is information from an interviewee (Appendix D) that indicates 50 gallons (not 5 gallons as currently written) of AFFF were stored aboard the fire trucks. The sentence has been corrected to align with Mr. Ortiz’s (interviewee) statement as follows: “Based on information gathered from an interviewee during the PA, 50 gallons of AFFF were reportedly stored on each of two structural fire trucks.”

-New Comment

Table 3-1, Page 33, 2nd column,

- Item 21 reads: “Appendix D VNTR EBS was an Aerial Photographic Analysis. No sites related to PFAS were identified.”
- Items 22 and 23 read: “Appendix A of the PFAS PA lists real estate records. Also, Appendix A of the VNTR EBS includes real estate records. Appendix B of the NASD EBS includes real estate records. No relevant information regarding PFAS found.”
- Item 24 reads: “Appendixes A and D of VNTR EBS and Appendix B of the NASD EBS.”

EPA comment

- Appendix D of the Draft PA is titled: “Interview Record.”

Navy Follow-up Response: Item 21 refers to Appendix D of the VNTR EBS. For clarity, the referenced item description (and elsewhere for the same citation) has been revised to read: “Appendix D of the VNTR EBS (NAVFAC, 2003).”

- There is a typo in Appendixes change to Appendices.

Navy Follow-up Response: “Appendixes” is now an accepted form of the plural of “Appendix.”

- It is a bit confusing to have 2 appendices A: 1) Appendix A of the PFAS PA and 2) Appendix A of the VNTR.

Navy Follow-up Response: They are two different documents – “Appendix A of the PFAS PA” and “Appendix A of the VNTR EBS,” as shown in referenced Table 3-1 line item. To help clarify, the word “Report” with author/date has been added to each.

- Appendix A of the Draft PA report is titled: ‘Site Buildings and Locations.’

Navy Follow-up Response: Only Item 22 states Appendix A of the PFAS PA lists real estate records. Appendix A was inadvertently cited; it should be Appendix F. The citation has been revised to “Appendix F.”

- A search for Appendix A of the VNTR does not yield any result.

Navy Follow-up Response: For Item 23, the referenced line item text has been corrected to read: “Appendix B of the VNTR EBS Report (NAVFAC, 2003) includes real property records.”

- Appendix B of the Draft PA report is titled: “List of Plants...”

Navy Follow-up Response: Appendix B of the PA report is not cited in Table 3-1. For Item 24 (and elsewhere with the same citation), the line item text has been clarified to read: “Appendix B of the NASD EBS (PMC, 2000) includes real estate records.”

- Appendix B, titled “EBS report for VNTR,” pages 383-393, is within the last pages of Appendix F, which is titled: “Real Estate Documentation.”

Navy Follow-up Response: Appendix F of the PA Report is a compilation of real estate documentation found in multiple reports including both EBS Reports. With respect to the VNTR EBS Report, the real estate documentation was provided in its Appendix B which was excerpted and placed in Appendix F of the PA Report. To help distinguish real estate documentation from the various sources, slip sheets have been added to Appendix F for each source.

- Appendix B “EBS Report for VNTR” should be a reference on its own, since there is a list of structures that may be associated with AFFFs. For example, fire truck shed/shelter, SW Pump house, H Landing Pad; Old North and South Small Craft Ramps; North and South Landing Craft Ramps; Wind Soch/Helo Landing Pad; another Helo-Pad, Camp Garcia Runway and Taxiway (already included for investigation), etc.

Navy Follow-up Response: Please see response to the previous comment.

- Delete the last sentence in items 22 and 23, 2nd column: “No sites related to PFAS.” There is a list of structures that may be associated with AFFF as described in previous bullet.

Navy Follow-up Response: There is no list of structures that may be associated with AFFF in line items 22 and 23. Column 2 is a list of the searches that were conducted, not the results. The results are in Column 3. For example, in Column 2 of Item 22, it shows a search of real estate records was performed looking for facilities that may have stored or used PFAS substances. Column 3 of the same line item states no relevant information regarding PFAS was found. For clarity, the last sentence in Column 3 for Items 22 and 23 have been revised to read: “No buildings or facilities that may have stored or used PFAS were identified.”

- The appendices should match the descriptions in the 1st column. For example, item 21, it seems that there are no maps and aerial photos in the actual Appendix D.

Navy Follow-up Response: There are aerial photographs in Appendix D of the VNTR EBS, which is what is stated in line item 21.

- Revise text and appendices accordingly.

Navy Follow-up Response: Please see previous responses.

-New Comment

Table 4-1

Add a general list of sites proposed for further investigation; but, defer for further discussion in the Technical Subcommittee meeting of December 5, 2019 until we reconvene.

Under Area: Include sites proposed by EPA original comments on the Draft PA Report which includes: Buildings or structures identified in Appendix A or Appendix B Real Property Records, such as: heliport landing pads, areas associated to the LCUs e.g., Old North and South Small Craft Ramps; North and South Landing Craft Ramps, fire truck shed/shelter, SW Pump house, septic tank/DN fields, other motor pool areas/auto shops/PW maintenance areas in the VNTR and NASD, etc.

Under Potential for PFAS: ‘To be determined’ or similar language.

Under Rationale: As agreed by the Navy and regulatory agencies at the December 5, 2019, Vieques Technical Subcommittee meeting, we will reconvene to discuss whether any additional characterization is warranted, including whether any additional sites/areas should be considered as a potential PFAS sources.

Navy Follow-up Response: Table 4-1 Comment: Please see the response to the first General EPA Observation and Response. The additional potential sites have been identified in the table as described in that response.

Under Area Comment: As stated in the earlier response, the Navy has modified the table and text in Section 4 to acknowledge additional sites could be added based on the tier 1 data, associated evaluation, and inter-agency discussion regarding the results. Because inclusion of the sites listed in the above comment can be included in that discussion, the Navy prefers not to add any sites other than the ones currently listed in Table 4-1 at this time because no evidence has been found that suggests they are likely PFAS source areas.

Under Potential for PFAS Comment: Please see the response to the first General EPA Observation and Response. The “No” entries for the requested sites have been revised in Table 4-1.

Under Rationale Comment: Please see the response to the first General EPA Observation and Response. The requested information has been added to Table 4-1.

-Navy Response to Comment # 161, Page 426, reads:

1. “It is unclear to what “area(s)” the commenter is referring.”
2. “AFFF release occurred while the fire trucks were on standby and no information was found that indicated they responded to a crash as trucks were being offloaded from LCUs.”

EPA Comment:

1. The commenter was referring to the areas where the land crafts units landed identified in comment number 145 as BUILDING NO 1025 OLD NORTH SMALL CRFT RAMP and 1026 OLD SOUTH SMALL CRFT RAMP.

Navy Follow-up Response: The locations are unknown.

2. A series of follow up questions can be develop for future interviewees, including Mr. Ortiz to clarify the issue in the statement since no information was found about AFFF usage during a crash or at LCU or

anywhere else in the AFWTA. For example: Did you have to respond to a fire while on duty? How many times did you have to respond to a fire or a crash or used AFFF while on duty? Ask as many questions as needed to help us clarify AFFF usage at the AFWTA.

Navy Follow-up Response: Please see the response to the last (fourth) General EPA Observation and Response. An attempt will be made to contact additional former employees and an attempt will be made to contact the former employees interviewed during the Preliminary Assessment to address the questions posed by EPA during review of the Draft Preliminary Assessment Report, such as the above questions.

Note: A separate pdf file is included with typos/omissions/indentations in a separate pdf file.

Navy Follow-up Response: The document has been re-evaluated and updated, as applicable.

**Responses to PRDNER Comments on the
Draft Preliminary Assessment Report for Per- and Polyfluoroalkyl Substances
Atlantic Fleet Weapons Training Area – Vieques
Former Naval Ammunition Support Detachment and Former Vieques Naval Training Range
Vieques, Puerto Rico**

General Navy Observation and Response

A number of the comments refer to the presence of a structure (e.g., helicopter hangar), use of a particular chemical or substance (e.g., hydraulic fluid, automobile wax), or performance of a particular activity (e.g., storage) as rationale for including a site/area for further investigation solely because of its potential PFAS association. While it is true that PFAS have been used in a wide variety of commercial and industrial products since the 1950s, their presence is essentially ubiquitous where humans are present and conducting such everyday activities as wearing clothing, popping popcorn, cooking with a frying pan, and waxing a car. The objective of the PFAS PA is not to evaluate the types of contributions from unregulated activities that occur throughout the country regardless of location. The objective of the PFAS PA is to determine, based on review of historical records, interviews, and observations, whether past military training and support activities resulted in known or likely PFAS releases that warrant further investigation via an SI. To that end, the Navy has identified sites where the lines of evidence suggest a PFAS release occurred or potentially occurred and proposes those sites be carried forward to an SI because if there has been a release(s), those sites are the ones most likely to demonstrate PFAS contamination. On December 5, 2019, representatives from the Navy, EPA, PRDNER, and USFWS (Vieques Technical Subcommittee) met to discuss the Draft PFAS PA Report, with emphasis on sites recommended to be carried forward to an SI. The Subcommittee reached consensus to perform the SI on those sites recommended by the Navy in the Draft PA Report and four additional sites discussed and concurred upon during the meeting, as detailed in the following responses to comments. Following completion of the sampling and evaluation of the results, the Navy and regulatory agencies will have the opportunity to reconvene and discuss whether any additional characterization is warranted, including whether any additional sites/areas should be considered.

GENERAL COMMENTS

1. The Executive Summary and Section 1.1 (Preliminary Assessment Objectives) lists the following as an objective of the Preliminary Assessment (PA) Report: *“Determine whether an emergency response action is warranted because of current exposure pathways (e.g., on-base or off-base drinking water source within one-mile downgradient of potential source area).”*
 - a. In Section 2.5.2, the Navy concludes that there are no drinking water wells (i.e., exposure pathways) on Vieques based upon information that is over 10 years old per the citation (i.e., CH2M, 2008b). PRDNER requests that an updated receptor survey of water wells downgradient of all sites subject to Site Investigations proposed in the PA be completed as part of the Site Investigation. At a minimum, the receptor survey should include a review of pertinent municipal and government records and interviews with the owner or persons knowledgeable of the downgradient properties of interest.

Navy Response: Please see the response to EPA Specific Comment 3. Current information from an island resident indicates there are no private water supply wells on Vieques. The first sentence of the last paragraph of the Executive Summary has been revised to read: “Site reconnaissance of the sites/areas indicates the potential for exposure to PFAS containing media, if present, is low to non-existent; therefore, a rapid response is not necessary. Groundwater is not used as a source of public drinking water on the island and there are no known private wells used for drinking water purposes. Groundwater withdrawal on Vieques for public potable use (formerly conducted via 14 public water supply wells located in the alluvial coastal plain near Esperanza and potentially 6 water supply wells located in the northwestern portion of Vieques) was discontinued in 1978. Since that time, potable

water for the island population has been supplied via a pipeline from the Rio Blanco filtration plant in eastern Puerto Rico. However, if PFAS are detected in groundwater at the SI stage, then efforts to confirm the absence of private drinking water wells will be made within a 4-mile radius of the detected contamination, per Environmental Protection Agency (EPA) PA/SI guidance. The SI will evaluate if there has been a release of PFAS to the environment that may pose a threat to human health and/or the environment.”

Further, the following has been added to Section 2.2.3: “Groundwater is not used as a source of public drinking water on the island and there are no known private wells used for drinking water purposes. Groundwater withdrawal on Vieques for public potable use (formerly conducted via 14 public water supply wells located in the alluvial coastal plain near Esperanza and potentially via 6 “fresh water wells” located in the Valle de Resolución aquifer (use of the six “fresh water wells” as public water supply wells is assumed but not confirmed), as shown in **Figure 2-4**, withdrawing groundwater at a rate of about 600,000 gallons per day. These public water supply wells were discontinued in 1978. Since that time, potable water for the island population has been supplied via a pipeline from the Rio Blanco filtration plant in eastern Puerto Rico. Camp Garcia was connected to the water line in the summer of 2000 (CH2M, 2008b).”

- b. It also should be noted that, other than evaluating the need for emergency response actions, there is no discussion of the potential need for remedial actions should elevated concentrations of PFAS be detected during proposed Site Investigations. As noted in Section 2.2.3, two aquifers are present beneath areas proposed for investigation in the PA Report: the Valle de Resolución and Valle de Esperanza. Prior to installation of a water line from the Island of Puerto Rico to provide an alternative source of drinking water in response to over-pumping and resulting saltwater intrusion, active well fields were present in both aquifers and at least one of the aquifers (the Valle de Esperanza aquifer) served as a source of drinking water on Vieques (USGS, 1989) and Camp Garcia. As of 1989, chloride concentrations (an indicator of salinity) were reported to have nearly recovered to pre-pumping concentrations and were below the EPA secondary maximum contaminant levels for drinking water. The prior use of groundwater as a drinking water supply in portions of the Valle de Esperanza aquifer (and potentially the Valle de Resolución aquifer) and the apparent recovery from the effects of over-pumping indicate that portions of these aquifers are a resource that could potentially be used in the future and will be considered by PRDNER along with site-specific data in evaluating the need for potential remediation.

Navy Response: Comment noted. Determination of whether a rapid (emergency) response is warranted in a PA is consistent with EPA PA guidance (EPA, 1991).

2. Site investigations have been recommended at several sites discussed in the PA. PRDNER anticipates that Site Investigations will include groundwater sampling to assess the presence of PFAS in groundwater. The sampling and analysis plans should consider vertical hydraulic gradients and the need for nested wells to ensure that, if present, PFAS in downgradient groundwater is adequately characterized.

Navy Response: Comment noted. In accordance with CERCLA, the objective of the SI will be to determine whether a release(s) of PFAS has occurred, not the extent of that release(s); an approach appropriate to meet

this objective will be included in the SI SAP provided for regulatory review. If a PFAS release is deemed present, extent determination will be part of an RI.

PAGE-SPECIFIC COMMENTS

1. Page iii, Executive Summary: Ten sites are recommended for further investigation under a Site Investigation based upon the results of the PA performed by the Navy. As appropriate, please update the text in response to the comments provided herein (e.g., Page-Specific Comment 15).

Navy Response: Please see responses to page-specific comments below.

2. Pages 1-2 and 1-3, Section 1.2.2 - Key PFAS Sources at Navel Installations:

- a. According to the Interstate Technology Regulatory Council (ITRC, 2017. *History and Use of Per- and Polyfluoroalkyl Substances (PFAS)*) and others (e.g., DeSilva et. al., 2011 in Environmental Science and Technology – *Detection of a Cyclic Perfluorinated Acid, Perfluoroethylcyclohexane Sulfoanate, in the Great Lakes of North America*), PFAS are present in hydraulic fluid including some aviation hydraulic fluids. Please include a discussion of the potential use of PFAS in hydraulic fluids used at the installation. Pending the response, PRDNER may request sites where hydraulic fluids were likely used proceed to a site investigation.

Navy Response: The following has been added under “Other Potential Sources”: “Another potential source of PFAS is aircraft hydraulic fluid. Some aviation hydraulic fluids contain PFAS or PFAS precursors as an additive to reduce corrosion of aircraft parts, at concentrations less than 1 percent. However, aircraft hydraulic fluids are used in enclosed systems, so their release to the environment is unlikely unless there was an accident involving damage to aircraft (e.g., crash) or incident during aircraft maintenance or hydraulic fluid storage. Most aircraft associated with Vieques were maintained at Naval Station Roosevelt Roads (NSSR), now referred to as Naval Activity Puerto Rico (NAPR), and no crashes or maintenance/storage incidents involving hydraulic fluids reportedly occurred on Vieques. However, areas where waste hydraulic fluids may have been disposed (i.e., Camp Garcia landfill and various dumps) have been recommended for further investigation via a Site Inspection (SI), as discussed in Section 4.”

- b. Electroplating: According to the text, “*Areas where non-chromium electroplating operations were carried out would not be expected to have used PFAS-containing mist suppressants.*” Please note in the text that the Interstate Technology Regulatory Council (ITRC, 2017. *History and Use of Per- and Polyfluoroalkyl Substances (PFAS)*) indicates that PFAS is also used in electroplating operations for copper, nickel, and tin.

Navy Response: The “Electroplating” subsection has been updated to include copper, nickel, and tin. Based on operations conducted at Vieques, electroplating would not be expected and there were no reports found of such an operation.

3. Pages 1-3 and 1-4, Section 1.2.4 - PFAS Health Effects:

- a. Page 1-3: Please modify the text to include a second sentence acknowledging that “However, there is a growing body of evidence of animal studies and human epidemiology studies indicating the relationship between human health effects and exposure to PFAS (Rappazzo et. al., 2017, *Journal of Public Health, Exposure to Perfluoroalkyl Substances and Health Outcomes in Children, A Systematic Review of the Epidemiologic Literature*).”

Navy Response: The following has been added as the first sentence of Section 1.2.4: “There is a growing body of evidence of animal studies and human epidemiology studies indicating the relationship

between human health effects and exposure to PFAS (Rappazzo et. al., 2017)” and the full reference (Journal of Public Health, *Exposure to Perfluoroalkyl Substances and Health Outcomes in Children, A Systematic Review of the Epidemiologic Literature*) has been added to the References section. The second sentence (original first sentence) has been revised to begin with “However.”

- b. Page 1-4, Last Paragraph: Please revise the last sentence to state “...RfDs based on developmental effects also are considered by toxicologists and risk assessors to be protective of adverse health effects in adults. Additionally, the RfD for PFOA is protective of carcinogenic effects ”

Navy Response: The last sentence of Section 1.2.4 has been revised to read: “PFOA and PFOS . . . RfDs based on developmental effects also are considered by toxicologists and risk assessors to be protective of adverse health effects in adults. Additionally, the RfD for PFOA is protective of carcinogenic effects.”

4. Page 1-4, Section 1.3 - Regulatory Background and History: Please include a subsection discussing EPA’s draft PFAS Action Plan released in February 2019.

Navy Response: A summary of the Action Plan has been added as Section 1.3.4 and the “Commonwealth-specific Action Levels” subsection has been renumbered as Section 1.3.5.

5. Page 2-3, Section 2.3.2 - Human Receptors, Groundwater:

- a. Please revise the text to state that “Groundwater is not currently used...”.

Navy Response: Revision made as requested. Please also see the response to General Comment 1.

- b. The text states “Although groundwater is generally considered not suitable for use as a potable water source due to its general poor quality (high dissolved solids/salinity).” Please clarify the text to indicate that the high dissolved solids/salinity was at least partly the result of over-pumping the aquifers when they were used as a potable water source.

Navy Response: The referenced sentence has been revised to read: “Groundwater on Vieques is generally considered not suitable for use as a potable water source due to its general poor quality (high total dissolved solids/salinity) as a result of natural saltwater intrusion and saltwater intrusion induced by historic pumping of water supply wells when the island’s aquifers were used as a potable water source. Nevertheless, potential groundwater use is evaluated on a site-specific basis . . . ”

6. Page 2-4, Section 2.3.2 – Human Receptors, Soil: The section states “there are currently no regulatory screening levels or other criteria for dermal contact with soil. There are currently no screening levels or other criteria for inhalation of PFAS in dust.” Please note that EPA Region 4 has residential soil values and the EPA has Human Health screening levels for PFOS and PFOA (2018) that may be suitable PFAS screening values for comparison to soil results. Additionally, the May 2019 RSL tables have soil screening levels for Perfluorobutane sulfonic acid (PFBS) and Perfluorobutane sulfonate.

Navy Response: Please see the response to EPA Specific Comment 55. As noted in the response, new PFAS screening values will be incorporated into the evaluation once they have been promulgated or otherwise adopted industry-wide.

7. Page 3-2, Section 3.2 – Interviews, Former Vieques Firefighter:

- a. It is presumed that each item of information obtained from the interview pertains to the period between 1998 and 2001, during which the interviewee served as a firefighter on Vieques and may have

been different outside of this period as procedures may have changed. Please clarify and modify the text as applicable. This comment also pertains to the interview with the Assistant Fire Chief.

Navy Response: The sentence just above the interviewee summary in Section 3.2 has been revised to read: “CH2M interviewed two personnel regarding historical activities and procedures potentially associated with AFFF/PFAS. While base operations undoubtedly were modified over the duration of active military presence on the island, it is reasonable to assume the information provided by the interviewees represents a longer timeframe than their presence on the island. The following is a summary of the information provided:”

- b. Based on the description and details provided in Appendix D (e.g., AFFF Purchasing and Handling, Question 2), the operation of filling the fire trucks with AFFF was a routine or repeated task. Please clarify if it is known how often the fire trucks were refilled with AFFF and where the older AFFF contained in the fire trucks was used and/or disposed.

Navy Response: As noted in Appendix D (AFFF Purchasing, Handling, and Storage,” response to Question 3a), the fire trucks were flushed once a month. If it is assumed the flushing removed any AFFF stored in the trucks that were then refilled, filling could be assumed to take place monthly. It is not known where the AFFF was disposed, but if not contained for disposal, it is likely the AFFF was flushed from the trucks during cleaning where they were staged (i.e., at the fire stations) or serviced (i.e., at the motor pools), both of which are recommended for further investigation as part of the SI.

- c. As noted in Appendix D (Trucks and Trailers, Question 3(c), the interviewee indicates that 5-gallon AFFF containers were rinsed out and reused. Please clarify if it is known where the 5-gallon AFFF containers were rinsed out.

Navy Response: It is not known, but is reasonable to assume the 5-gallon AFFF containers were rinsed where they were stored or used to fill the fire trucks (i.e., at the fire station), which is recommended for further investigation as part of the SI.

8. Page 3-3, Section 3.3 - Site Reconnaissance: The second sentence states “*During the site reconnaissance, areas were visited...*” Please clarify if the areas referred to are all of the areas listed in Table 4-1 or a subset of these areas. If the latter, please specify the sites at which reconnaissance was performed.

Navy Response: Of the 14 sites recommended for SI, 7 were visited during the PA site reconnaissance. Former NASD SWMUs 6 and 7 and Former VNTR SWMU 1 were not specifically visited during the reconnaissance because those sites were waste disposal sites that underwent removal/remedial action so there is no additional information that could be gathered regarding PFAS use, disposal, or release from a site visit. Further, historical studies/actions/monitoring at these sites, as well as PI 5 and the runway area, SWMU 20, and PAOC K, have sufficiently documented the sites’ physical conditions. In addition, during preparation of the SI SAP for these sites, additional site reconnaissance will be performed to help provide the rationale for sample locations. Section 3.3 has been revised with this information.

9. Table 3-2 – Search Criteria: Please clarify why the first 28 search terms are not presented in the table.

Navy Response: There was an error in the table line numbering. Please see the response to EPA Specific Comment 50 for detail regarding the error and the corrections made.

10. Page 4-3, Section 4.4 - NASD AOC B, Former Wastewater Treatment Plant: Please include a discussion of how sludge generated at the wastewater treatment plant was managed and disposed including the location of disposal. PRDNER requests that areas used for drying and disposal of wastewater sludge be investigated.

Navy Response: Please see the response to EPA Specific Comment 63.

11. Page 4-5, Section 4.6.1 - Description and Operational History: Please revise the last sentence of the first full paragraph and the second to last sentence in the second full paragraph to read *"...did not result in contamination by these analytes..."*

Navy Response: Please see the responses to EPA Specific Comments 80 and 82.

12. Page 4-5, Section 4.6.3 - Potentially-Impacted Media:

- a. Page 4-5: The second sentence states *"If a release of AFFF or other PFAS containing constituents occurred after 1974, the vertical migration likely would have been stopped by the clay and the plastic liner..."* Native clay on Vieques is permeable to water albeit limited. It is the plastic liners, assuming that it did not leak, which would have "stopped" or prevented vertical migration. Please revise the second sentence to read *"If a release of AFFF or other PFAS containing constituents occurred after 1974, the vertical migration would have been stopped by the plastic liner at the bottom of the lagoon provided that there were no leaks."*

Navy Response: Please see the first sentence of the second paragraph of former Section 4.6.1 (now Section 4.7.1), which states: "In 1974, after . . . were lined using a 2-foot compacted clay and plastic liner . . ."

- b. Page 4-6: According to the text, *"Groundwater occurs between approximately 32 and 39 feet bgs within the fractured saprolitic basement rock and appears to be confined (CH2M, 2010a)."* Please review the existing data and confirm that the groundwater is actually confined and not semi-confined and revise the text as appropriate.

Navy Response: The word "confined" in the referenced sentence has been revised to "semi-confined."

13. Page 4-6, Section 4.6.4 - Recommendation: Please revise the first sentence to read *"While no evidence was found during this PA that AFFF..."*

Navy Response: The referenced sentence was revised as requested.

14. Page 4-6, Section 4.7.3 - Potentially Impacted Media: Please revise the last sentence to read *"...it would have likely leached to groundwater and into the marsh surface water..."*

Navy Response: The referenced sentence was revised as requested.

15. Page 4-6, Section 4.7.4 - Recommendations: Please delete *"or indications"* from the first sentence. This comment also applies to Sections 4.8.4 and 4.9.4.

Navy Response: "Records" refer to historical documentation. "Indications" can refer to such things as observations made during investigations or other activities at the site. Given that SWMU 6 (Section 4.7.4), SWMU 7 (Section 4.8.4), and SWMU 1 (Section 4.9.4) are waste disposal sites and underwent multiple investigations/actions, "indications" is appropriate to retain in the sentence because there were no observations or other indications of a PFAS release at these sites. Nonetheless, all three sites are recommended for further investigation as part of the PFAS SI based on all lines of evidence considered.

16. Page 4-7 and 4-8, Section 4.9 – VNTR SWMU 1: Former Camp Garcia Municipal Solid Waste Management Unit (Landfill): This section limits the potential impacted media to groundwater; however, landfills seeps can lead to surface water and soil impacts. Please clarify if seeps are present at SWMU 1 prior to eliminating surface soil and surface water from consideration as potential impacted media or this area from consideration for further investigation.

Navy Response: The entire surface of the landfill and the associated ephemeral streams were observed over multiple investigations and actions. No seeps have ever been observed. Please also see the response to EPA Specific Comment 90.

17. Table 4-1 – Areas Evaluated for Potential PFAS Releases:

- a. VNTR PI 5: There has been no evidence provided that refutes the presence of a fire department as indicated in the EBS. Based on the potential presence of a fire department, there may have been fire training exercises performed. In addition, AFFF may have been stored at this location. Please clarify when the fire station was reported to be present relative to the development of AFFF.

Navy Response: Please see the response to EPA Specific Comment 99, which provides evidence that a fire department was not present at PI 5.

- b. VNTR SWMU 20 (formerly PI 4): The presence of a helicopter maintenance shop indicates the potential presence of hydraulic fluids. Please discuss whether hydraulic fluid potentially containing PFAS were likely used at SWMU 20 as this area potentially require further investigation.

Navy Response: PFAS have been used in a wide variety of commercial and industrial products since the 1950s, potentially including hydraulic fluids. The focus of the PA process is to identify known or suspected releases of PFAS containing materials, which is in accordance with both Navy and EPA guidance. Further, use of hydraulic fluids does not equate with potential release, as noted in the response to PRDNER Page-specific Comment 2. Please also see the Navy General Observation and Response at the beginning of this response-to-comment document. No records, interviews, or observations identify a known or suspected PFAS release has occurred at SWMU 20. Nonetheless, SWMU 20 has been added to the list of sites recommended for an SI (see response to EPA Specific Comment 105).

Please note the second and third sentences of the Rationale in Table 4-1 has been corrected to read: “Area was reportedly active from 1959 to 1964 (helicopter maintenance and hangar until 1975) (NAVFAC, 2003), but there is no record or interviewee knowledge that AFFF was used, stored, or spilled at this location.”

- c. NASD AOC J and VNTR PAOC X: The presence of construction-related debris indicates the potential presence of PFAS which is found in architectural materials and surface treatments. Please clarify if the construction debris present at AOC J and PAOC X was likely to contain PFAS as these areas potentially require further investigation.

Navy Response: Please see the Navy General Observation and Response at the beginning of this response-to-comment document. No records, interviews, or observations identify a known or suspected PFAS release has occurred at AOC J or PAOC X; therefore, additional investigation of these areas is not warranted.

- d. Please verify that no releases of hydraulic fluids occurred at the NASD helicopter pad near the MOV campground, the VNTR Helicopter Pad at OP-1, or at the Camp Garcia Runway, VNTR PI 8. In addition, car wash operation and storage of asphalt emulsions are two potential sources of PFAS indicating that VNTR PI 8 should be retained for further investigation.

Navy Response: Please see the Navy General Observation and Response at the beginning of this response-to-comment document. No records, interviews, or observations identify a known or suspected PFAS release has occurred at any of the sites/areas referenced in the comment. Nonetheless, the Camp Garcia runway and PI 5 have been added to the list of sites recommended for an SI.

- e. SWMU 4: Please consider including SWMU 4 for a Site Investigation as Table 4 indicates that a catch basin for hydraulic oil was present at this Site and some hydraulic fluids have been reported to contain PFAS.

Navy Response: Please see the Navy General Observation and Response at the beginning of this response-to-comment document. No records, interviews, or observations identify a known or suspected PFAS release has occurred at the site referenced in the comment; therefore, additional investigation of this site is not warranted.

- f. VNTR PAOC K and VNTR PAOC T/PAOC U: The text states that *“Sampling conducted in the identified area did not identify any constituents or constituent concentrations likely attributable to a release, especially associated with PFAS (CH2M, 2010).”* Please clarify the above statement.

Navy Response: Please see the response to EPA Specific Comment 125.

- g. NASD SWMU 14: Cleaning agents and automobile waxes are known to contain PFAS and may have been used in the cleaning of Navy vehicles. Please clarify if cleaning agents and waxes likely to contain PFAS were used at the former wash rack as this area should seemingly be retained for further investigation.

Navy Response: Please see the Navy General Observation and Response at the beginning of this response-to-comment document. No records, interviews, or observations identify a known or suspected PFAS release has occurred at SWMU 14; therefore, additional investigation of this area is not warranted.

18. Appendix A – Site and Building Locations: EBS Report, Appendix B, Table B-1 lists a number of building/structures including #2028 and #2058 (“Septic Tank/DN Fields”). Septic tanks and drainage fields are known potential sources of PFAS to soil and groundwater and these locations should not be eliminated unless process knowledge eliminates the potential of PFAS containing liquids in the septic systems. These areas, and potentially other septic systems, should be retained for further investigation unless process knowledge eliminates the areas as potential PFAS sources.

Navy Response: As noted in Section 6.10.2 of the EBS (PMC, 2000), they operated as no-discharge holding tanks that when full their contents were pumped into a tank truck and discharged to the WWTP (AOC B), which is recommended for further investigation via a PFAS SI.

**Responses to PRDNER Follow-up Comments on the
Draft Final Preliminary Assessment Report for Per- and Polyfluoroalkyl Substances
Atlantic Fleet Weapons Training Area – Vieques
Former Naval Ammunition Support Detachment and Former Vieques Naval Training Range
Vieques, Puerto Rico**

PRDNER accepts the Navy's Responses to Comments on the above-referenced document with the following exceptions:

GENERAL COMMENTS

1. PRDNER General Comment 2: Site investigations have been recommended at several sites discussed in the PA. PRDNER anticipates that Site Investigations will include groundwater sampling to assess the presence of PFAS in groundwater. The sampling and analysis plans should consider vertical hydraulic gradients and the need for nested wells to ensure that, if present, PFAS in downgradient groundwater is adequately characterized.

Navy Response: Comment noted. In accordance with CERCLA, the objective of the SI will be to determine whether a release(s) of PFAS has occurred, not the extent of that release(s); an approach appropriate to meet this objective will be included in the SI SAP provided for regulatory review. If a PFAS release is deemed present, extent determination will be part of an RI.

PRDNER Evaluation of Response: Comment is acceptable. To clarify; however, the purpose of the comment was not to evaluate the extent of a release. Rather, the intent of the comment was to ensure that well locations proposed for sampling as part of an SI SAP for a site are screened at appropriate depths to detect a PFAS release, particularly if wells proposed for sampling are located downgradient of the potential release area. No response is necessary.

PAGE-SPECIFIC COMMENTS

1. PRDNER Page-Specific Comment 4: Page 1-4, Section 1.3 - Regulatory Background and History: Please include a subsection discussing EPA's draft PFAS Action Plan released in February 2019.

Navy Response: A summary of the Action Plan has been added as Section 1.3.4 and the "Commonwealth-specific Action Levels" subsection has been renumbered as Section 1.3.5.

PRDNER Evaluation of Response: Comment partially acceptable. Please add the following statement at the end of the new Section: "In December 2019, EPA set Interim Recommendations to Address Groundwater Contaminated with PFOA and PFOS which included using the PFOA and PFOS Lifetime Drinking Water Health Advisories (HAs) of 70 ppt (combined or individually) as the recommended Preliminary Remediation Goal (PRG) for groundwater that is a current or potential source of drinking water, where no state or tribal MCL or other applicable or relevant and appropriate requirements (ARARs) are available or sufficiently protective."

Navy Response to Follow-up Comment: The requested statement has been added to end of Section 1.3.4.

2. PRDNER Page Specific Comment 12: Page 4-5, Section 4.6.3 - Potentially-Impacted Media:
 - a. Page 4-5: The second sentence states "If a release of AFFF or other PFAS containing constituents occurred after 1974, the vertical migration likely would have been stopped by the clay and the plastic liner..." Native clay on Vieques is permeable to water albeit limited. It is the plastic liners, assuming that it did not leak, which would have "stopped" or prevented vertical migration. Please revise the second sentence to read "If a release of AFFF or other PFAS containing constituents occurred after 1974, the vertical

migration would have been stopped by the plastic liner at the bottom of the lagoon provided that there were no leaks.”

Navy Response: Please see the first sentence of the second paragraph of Section 4.6.1, which states: “In 1974, after . . . were lined using a 2-foot compacted clay and plastic liner . . . ”

PRDNER Evaluation of Response: The Navy response does not address the comment, which referred to text in Section 4.6.3 (revised Section 4.7.3). Please revise the text as originally requested.

Navy Response to Follow-up Comment: The second sentence of Section 4.7.3 has been revised as requested.

3. PRDNER Page-Specific Comment 16: Page 4-7 and 4-8, Section 4.9 – VNTR SWMU 1: Former Camp Garcia Municipal Solid Waste Management Unit (Landfill): This section limits the potential impacted media to groundwater; however, landfills seeps can lead to surface water and soil impacts. Please clarify if seeps are present at SWMU 1 prior to eliminating surface soil and surface water from consideration as potential impacted media or this area from consideration for further investigation.

Navy Response: The entire surface of the landfill and the associated ephemeral streams were observed over multiple investigations and actions. No seeps have ever been observed. Please also see the response to EPA Specific Comment 90.

PRDNER Evaluation of Response: As acknowledged in the revised text (revised Section 4.10.3), during the time debris was exposed on the landfill surface, if AFFF or other PFAS containing materials occurred within the landfilled waste, surficial transport of PFAS could have occurred. Thus, soils potentially containing PFAS could have been deposited in the ephemeral stream. Based upon our experience, there is a potential for PFAS, if present in soils deposited in the ephemeral stream, could partition to surface water during times of discharge and potentially impact ecological receptors. Please acknowledge this mechanism in Section 4.10.3.

Navy Response to Follow-up Comment: The Navy feels it is unnecessary and potentially misleading to add text about whether ecological receptors could have been impacted because that would depend on a multitude of factors, including whether any PFAS-containing debris was present, whether it was subjected to runoff, and what concentrations may have resulted. Therefore, the next-to-last sentence in Section 4.10.3 has been revised as follows: “However, during the time debris was exposed on the landfill surface, if AFFF or other PFAS containing materials occurred on the surface the landfill, surficial transport of PFAS could have occurred. Under these circumstances, if soil containing PFAS was deposited in the ephemeral stream, PFAS could have partitioned to surface water.”

4. Table 4-1 – Areas Evaluated for Potential PFAS Releases:

- c. NASD AOC J and VNTR PAOC X: The presence of construction-related debris indicates the potential presence of PFAS which is found in architectural materials and surface treatments. Please clarify if the construction debris present at AOC J and PAOC X was likely to contain PFAS as these areas potentially require further investigation.

Navy Response: Please see the Navy General Observation and Response at the beginning of this response-to-comment document. No records, interviews, or observations identify a known or suspected PFAS release has occurred at AOC J or PAOC X; therefore, additional investigation of these areas is not warranted.

PRDNER Evaluation of Response: PRDNER acknowledges the intent of the SI for PFAS; however, PRDNER suggests providing details on the types of construction-related debris present to evaluate if any PFAS-containing construction-related debris is present and; therefore, warrants sampling for PFAS in the SI. If this area is not sampled during the SI, PRDNER recommends this area be considered during the RI.

Navy Response to Follow-up Comment: Items identified and removed at the PAOC X site (No Action/No Further Action Decision Document [CH2M, 2010]) included an automobile body (car), tires, scrap metal, construction debris, an abandoned truck, two deteriorated, empty drums, cable spools, metal pallets, an engine, and concrete slabs.

Items identified and removed at the AOC J (Completion Report, Removal Actions SWMU 6, SWMU 7, AOC J, and AOC R [Shaw 2010]) included scrap metal from construction equipment, wood, metallic and non-metallic materials, one empty drum, a 105-mm shell casing, and empty ammunition boxes, and broken glass bottles.

The above information has been added to Table 4-1. As noted in the General Observation and Response, following completion of sampling the most likely areas where an AFFF/PFAS release may have occurred, the agencies will have the opportunity to discuss the results and determine if any other sites/areas warrant investigation.

- g. NASD SWMU 14: Cleaning agents and automobile waxes are known to contain PFAS and may have been used in the cleaning of Navy vehicles. Please clarify if cleaning agents and waxes likely to contain PFAS were used at the former wash rack as this area should seemingly be retained for further investigation.

Navy Response: Please see the Navy General Observation and Response at the beginning of this response-to-comment document. No records, interviews, or observations identify a known or suspected PFAS release has occurred at SWMU 14; therefore, additional investigation of this area is not warranted.

PRDNER Evaluation of Response: As discussed during the December 2019 Technical Subcommittee Meeting, many auto cleaning agents have recently been identified as PFAS sources such as alkaline surfactants and these sources may not have been considered during the document review or interviews. If this area is not sampled during the SI, PRDNER recommends additional research into whether cleaning agents and waxes likely to contain PFAS were used at the former wash rack, and if so, be considered during the RI.

Navy Response to Follow-up Comment: As noted in the General Observation and Response, following completion of sampling the most likely areas where an AFFF/PFAS release may have occurred, the agencies will have the opportunity to discuss the results and determine if any other sites/areas warrant investigation.

New Comment

Section 1.2.2, Key PFAS Sources at Naval Installations: According to the revised text in the second paragraph, “A fire and rescue demonstration was performed by the crash crew at the Garcia airfield in 1967, 2 years before the military specification (MILSPEC) specifying use of PFAS in AFFF was issued and there were no reports of its use during the demonstration. In fact, if foam had been used in the demonstration, it would almost surely have been protein foam. Therefore, this activity was unlikely to be a source of a PFAS release.” While use of AFFF may have been required by the Navy in 1969, the Navy was granted a patent for AFFF in 1966 and it was reportedly being used by the Navy as early as 1967². Based upon this information, it would appear to be equally as likely that AFFF would have been used if foam was used in the 1967 fire and rescue demonstration. Please clarify the last text to read ““A fire and rescue demonstration was performed by the crash crew at the Garcia airfield in 1967. At the time, the Navy used two types of fire-fighting foams. One type was termed protein foam; the other type was

² Jared Hayes, Policy Analyst and Scott Faber, Vice President of Government Affairs, 2019. Mapping PFAS Chemical Contamination at 206 U.S. Military Sites: The Pentagon's 50-Year History with PFAS Chemicals. The Environmental Working Group. <https://www.ewg.org/research/pfas-chemicals-contaminate-least-110-us-military-sites/pentagon-s-50-year-history-pfas>.

called “Light Water” and was composed of a mixture of fluorinated surfactants³. The military specification (MILSPEC) requiring use of AFFF containing PFAS was issued in 1969. Although there were no reports of its use during the demonstration, if foam was used in the demonstration, it could potentially have been protein foam or “Light Water” foam.”

Navy Response to New Comment: As stated in the fourth paragraph of Section 1.2.2, AFFF containing PFAS was developed in the 1960s, but the MILSPEC specifying its use was not issued until November 1969, which was 2 years after the Garcia Airfield demonstration. The discussion in Section 1.2.2 demonstrates there is significant weight-of-evidence that AFFF was not used in the 1967 demonstration. However, the following sentence has been added to the end of the second paragraph of Section 1.2.2: “Nonetheless, given that PFAS-containing AFFF was developed in the 1960s, to address the potential that the 1967 demonstration could have utilized PFAS-containing AFFF, the Garcia airfield is recommended for investigation via a Site Inspection (SI), as discussed in Section 4.”

³ Henry P. Stewart, LCDR, USN, 2004. The Impact of the USS Forrester’s 1967 Fire on United States Navy Shipboard Damage Control. Masters Thesis, U.S. Army Command and General Staff College, Fort Leavenworth, Kansas.