

IDENTIFICATION
OF
UNCONTAMINATED
PROPERTY
AT THE
NAVAL AMMUNITION
SUPPORT DETACHMENT
VIEQUES ISLAND,
PUERTO RICO

Final Version
23 June 2000

**Identification of Uncontaminated Property
At Naval Ammunition Support Detachment (NASD),
Vieques, Puerto Rico**

A. BACKGROUND

On January 31, 2000 President Clinton issued a directive to the Secretary of Defense that stipulated the Navy shall submit legislation to the Congress to transfer the Naval Ammunition Support Detachment with exception of approximately 100 acres of land, on which the Relocatable Over The Horizon Radar (ROTHR) and Mount Pirata telecommunications sites are located. The President's directive required the legislation submitted shall provide for the transfer of this land no later than December 31, 2000 to the Government of Puerto Rico for the benefit of the municipality of Vieques as determined by the Planning Board of the Government of Puerto Rico. This legislation has been submitted to the Congress and requires full compliance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

B. PURPOSE

In anticipation that Congress will pass the aforementioned legislation, the purpose of this document is to provide the results of the Navy's identification of uncontaminated property at NASD Vieques, Puerto Rico in accordance with CERCLA, as amended by the Community Environmental Response Facilitation Act (CERFA).

C. STATUTORY AUTHORITY

1. Identification of Uncontaminated Property

The statutory authority for this action is Title 42, United States Code, Section 9620 (h)(4), entitled: "IDENTIFICATION OF UNCONTAMINATED PROPERTY". CERFA, Public Law 102425, October 19, 1992 amended Section 120(h) of CERCLA and stipulates that the federal government must identify "uncontaminated property" scheduled for transfer. Uncontaminated property is defined as "...real property on which no hazardous substances and no petroleum products or their derivatives were known to have been released, or disposed of" (§9620 (h)(4)(A)).

This identification of uncontaminated property is not complete until concurrence in the results is obtained, in the case of real property that is not part of a facility on the National Priorities List, from "the appropriate State official" (§9620 (h)(4)(B)).

Additionally, this identification and concurrence shall be made at least 6 months prior to the termination of operations on the real property (§9620 (h)(4)(C)(i)). As the Navy has requested legislation to implement the President's Directive, which requires that the Navy

transfer the NASD Vieques real property by December 31, 2000, the identification, and concurrence therein, of uncontaminated property must be completed by June 30, 2000 to comply with CERCLA.

2. Transfer of Uncontaminated Property

Assuming Congress passes the aforementioned legislation, this property will be transferred to the Commonwealth by December 31, 2000. In the event that hazardous substances, petroleum products, or their derivatives that are a result from federal government activities are found on this property after transfer, the federal government is responsible under CERCLA to conduct response or corrective actions that are found to be needed.

Specifically, as required per CERCLA as amended by CERFA (§9620 (h)(4)(D)) the deed of transfer for property identified and concurred in as uncontaminated shall contain:

- “a covenant warranting that any response action or corrective action found to be necessary after the date of such ...transfer shall be conducted by the United States”, and
- “a clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary after such date at such property, or such access is necessary to carry out a response action or corrective action on adjoining property.”

3. Transfer and Environmental Restoration of Potentially Contaminated Property

Property at NASD Vieques to be transferred that is not identified and concurred in as “uncontaminated” is delineated as “potentially contaminated”. The Navy will complete the necessary environmental investigation and restoration efforts for these areas under its IR Program after the transfer of the property to the Commonwealth.

The potentially contaminated property is planned for transfer under the statutory authority provided in Title 42, United States Code, Section 9620 (h)(3)(C), entitled “DEFERRAL”, also known as “Early Transfer Authority”. Using this authority, the Governor may defer the Navy’s requirement to provide the covenant required in CERCLA Section 9620 (h)(3)(A)(ii)(I), which states:

“All remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer.”

To defer this covenant the Governor must find that the property is suitable for transfer, based on a finding that:

- the property is suitable for transfer for the use intended by the transferee, and the intended use is consistent with protection of human health and the environment;
- with regard to a release or threatened release of a hazardous substance for which the Navy is potentially responsible the deed or other agreement proposed to govern the transfer between the United States and the transferee for the property contains assurances that:
 - (1) provide for any necessary restrictions on the use of the property to ensure the protection of human health and the environment;
 - (2) provide that there will be restrictions on use necessary to ensure that required remedial investigations, response action, and oversight activities will not be disrupted;
 - (3) provide that all necessary response action will be taken and identify the schedules for investigation and completion of all necessary response action as approved by the appropriate regulatory agency; and
 - (4) provide that the Navy will submit a budget request to the Director of the Office of Management and Budget that adequately addresses schedules for investigation and completion of all necessary response action, subject to congressional authorizations and appropriations.
- the Federal agency requesting deferral has provided notice, by publication in a newspaper of general circulation in the vicinity of the property, of the proposed transfer and of the opportunity for the public to submit, within a period of not less than 30 days after the date of notice, written comments on the suitability of the property for transfer; and
- the deferral and the transfer of the property will not substantially delay any necessary response action at the property.

With respect to the property at NASD that has been delineated as potentially contaminated, when all response actions necessary to protect human health and the environment have been taken, the Navy will provide to the Commonwealth an appropriate document containing a warranty that all such response action has been taken. The making of the warranty shall be considered to satisfy the requirement of CERCLA Section 120 (h)(3)(A)(ii)(I) mentioned above.

Use of the CERCLA deferral authority for transfer of this property shall not increase, diminish, or affect in any manner any rights or obligations of the Navy under CERCLA with respect to this property (including any rights or obligations under Sections 106, 107, and 120 existing prior to transfer).

Further documentation to support the transfer of this property will be developed by the Navy in the next several months to comply with CERCLA Section 120(h)(3)(C).

D. CERFA PARCEL CLASSIFICATION PROCESS

All property to be transferred at NASD Vieques is classified as either “uncontaminated” or “potentially contaminated”. Pursuant to the CERFA amendment to CERCLA (Section 120 (h)(4)), the identification of uncontaminated property “...shall be based on an investigation of the real property to determine or discover the obviousness of the presence or likely presence of a release or threatened release of any hazardous substance or any petroleum product or its derivatives, including aviation fuel and motor oil, on the real property.”. CERCLA 120(h)(4) stipulates that the identification of uncontaminated property shall consist of a review of various sources of information concerning the current and previous uses of the property.

The Navy conducted investigative work for the Environmental Baseline Survey (EBS) of NASD Vieques during the spring of 2000. The purpose of the EBS is to document the environmental condition of the NASD. The EBS for NASD includes investigative efforts that meet the requirements of CERFA and support the identification of uncontaminated property in this document. The EBS will also be used to provide a basis for developing a finding of suitability to transfer (FOST). As such, it also includes an investigation of various other environmental concerns unrelated to CERCLA or the potential release of hazardous or petroleum substances, such as asbestos and radon. The final EBS for NASD Vieques is scheduled for completion in August 2000.

The identification of uncontaminated property consisted of a review of the sources of information provided in the subsections below. (The subsections are titled verbatim per CERFA).

1. A detailed search of Federal Government records pertaining to the property.

U.S. Navy operations on the island of Vieques have been the subject of numerous environmental investigations pursuant to the Navy’s IR program. These investigations date to the 1980s; the principal ones are identified below:

- Initial Assessment Study of Naval Station Roosevelt Roads, Puerto Rico, September 1984 [Note: this assessment included sites on Vieques].
- Confirmation Study to Determine Possible Dispersion and Migration of Specific Chemicals – U.S. Naval Station Roosevelt Roads, Puerto Rico, and U.S. Naval Ammunition Facility, Vieques, First Round Data Evaluation, May 1986.
- Confirmation Study to Determine Possible Dispersion and Migration of Specific Chemicals – U.S. Naval Station Roosevelt Roads, Puerto Rico, and U.S. Naval Ammunition Facility, Vieques. First and Second Round Data Evaluation, April 1988.

- Phase II, RCRA Facility Assessment of the Naval Ammunition Facility, Vieques Island, Puerto Rico, October 1988.
- Final Preliminary Assessment Narrative Report Site Inspection Forms and PA Score – Sites 1, 2, and 3, Naval Ammunition Facility, Vieques Island, U.S. Naval Station Roosevelt Roads, Puerto Rico, October 1992.

Since 1992, the Navy has continued to assess various sites at NASD, to include an evaluation of the suitability for a number of the sites to be classified as No Further Remedial Action Planned (NFRAP). In 1999, the Navy accelerated these investigative efforts with the goal of assessing and characterizing potentially contaminated areas. As reflected in the tables in Enclosure (B), a number of these areas are being formally investigated under the Navy's IR Program. These investigations will continue after the transfer of NASD. All previous and ongoing investigations were considered in the identification of uncontaminated property.

In addition to records of the U.S. Navy's previous and ongoing investigations, the Navy has, in the course of its current investigations, reviewed the relevant U.S. EPA and Puerto Rico EQB records pertaining to the NASD. The results of these record reviews were included in the CERFA identification process.

2. Recorded chain of title documents regarding the real property.

The Department of the Navy acquired the property that is now NASD Vieques between 1941-1943 and has owned the property since then. Prior to acquisition, Juan Angel Tio and Laura Nazario de Tio, his wife, owned approximately 60% of the land with the remainder being owned by approximately 75 individual landowners. Before acquisition by the Navy, most of the land was used for growing sugar cane.

3. Aerial photographs that may reflect prior uses of the real property and that are reasonably obtainable State or local government agencies.

The Navy has conducted an extensive analysis of aerial photography from multiple sources, to include the following:

<u>Date of Photographs</u>	<u>Type</u>	<u>Percent of NASD Covered</u>
1936/37	Black & White, Stereo	100%
1959	Black & White, Stereo	100%
1961	Black & White, Stereo	100%
1962	Color, Stereo	100%
1964	Black & White, Stereo	50%-majority of south end
1967	Black & White, Stereo	50%-majority of north end
Circa 1973	Color, Stereo	100%
Circa 1973	Black & White, Stereo	100%
1985	Color Infrared, Stereo	100%
1993	Color Infrared	50%
1999	Color, Stereo	100%

All of the photographs listed above were evaluated for the Navy by a firm specializing in the analysis of aerial photography. The aerial photographic analyses were used to:

- Track the operational history of previously identified sites of known or suspected contamination.
- Track the history of site operations from pre-Navy occupation (pre-WW II) to the present.
- Identify anomalies; e.g., ground scars, cleared areas, debris piles, possible disposal areas, etc., for further follow-up and investigation.

While informative, aerial photographs alone are rarely conclusive. Anomalies may be attributable to a number of causes unrelated to environmental concerns. Therefore, at NASD, the results of the aerial photographic analyses were evaluated and cross-referenced with the:

- Results of previous/ongoing IR investigations.
- Results of site inspections and Phase II sampling conducted pursuant to the EBS being conducted in preparation for the pending transfer of the NASD. This includes site inspections conducted solely for the purpose of investigating (“ground-truthing”) potential areas of contamination uncovered by the aerial photographs.
- Results of interviews with current and former NASD employees. This procedure was particularly useful at the NASD. Interviews with former employees revealed that a

number of the suspect areas identified in the aerial photographs were attributable to cattle grazing activities, which occurred from time to time throughout the NASD property.

4. A visual inspection of the real property and any buildings, structures, equipment, pipe, pipeline, or other improvements on the real property, and a visual inspection of properties immediately adjacent to the real property.

As outlined in (1) above, the NASD has been the subject of numerous site investigations to include all of the items referenced in this subsection. In anticipation of the pending transfer of the NASD, the property has been under continuous physical inspection and investigation for the past four months. These investigations, conducted pursuant to both the Navy's IR Program and the NASD EBS, have identified potentially contaminated areas on the NASD. The shorelines and property along the eastern border has also been visually inspected. The aerial photographic analyses discussed above also constitute a visual inspection of the NASD and adjacent property from 1936 to 1999.

5. A physical inspection of property adjacent to the real property, to the extent permitted by owners or operators of such property.

In 1998 and 1999, the U.S. Navy conducted an environmental baseline survey (EBS) for a parcel of Navy property associated with the NASD for the Vieques Airport Expansion. This EBS covered the area north, south and east of the western expansion of the Vieques Airport runway. This property was physically inspected, to include the collection of soil samples, during the conduct of the EBS. The property constituting the remainder of the eastern border of the NASD also has been physically inspected. The evidence has failed to disclose areas of environmental concern or other evidence to suggest that any area along the eastern border of the NASD poses a threat of environmental release with the potential to impact the NASD.

6. Reasonably obtainable Federal, State, and local government records of each adjacent facility where there has been a release of any hazardous substance or any petroleum product or its derivatives, including aviation fuel and motor oil, and which is likely to cause or contribute to a release or threatened release of any hazardous substance or any petroleum product or its derivatives, including aviation fuel and motor oil, on the real property.

The record reviews referenced above were conducted during the course of the EBS for the parcel outlined in (5) above. Record reviews pertaining to the remaining adjacent properties conducted during the course of the NASD EBS. Based upon visual inspection, personnel interviews, and record reviews, there is no known reason to suspect that conditions on adjacent property will impact the identification of uncontaminated property outlined in this document.

7. Interviews with current or former employees involved in operations on the real property.

The Navy has conducted extensive interviews with numerous current and former employees of the NASD and considered this component to be a key requirement in its attempt to definitively identify and characterize all sites of potential environmental concern on the NASD. These interviews were used to:

- Identify previously unknown potential sites.
- Characterize site operations from the pre-Navy era (pre-WW II) to the current time, particularly those relating to the use/disposal of hazardous substances and petroleum products.
- Verify the location and operational history of previously identified sites of potential environmental concern.
- Assist in the characterization of sites identified in historical aerial photographs.

On numerous occasions, former/existing employees have participated in visual site inspections at NASD to pinpoint the locations of sites of potential environmental concern. These individuals were particularly critical in correlating documentary evidence; e.g., previous reports and aerial photographs, with physical on-site inspections. A good example was their knowledge of prior cattle grazing activities, which eliminated from concern numerous potentially suspect areas, such as surface scars and cleared areas.

8. Sampling, if appropriate under the circumstances.

Sampling and analysis have been an integral component of U.S. Navy IR Program investigations since the 1980s. Sampling and analysis conducted under the IR Program at NASD has included:

- Ground Water,
- Soil,
- Surface Water,
- Well Water, and
- Swipe Samples (for; e.g., PCBs).

In addition to the ongoing IR sampling program, the Navy has conducted soil and groundwater preliminary screening sampling at several of the Areas of Concern (AOCs) as discussed in Tables 1 and 2 in Enclosure (B). This EBS sampling was conducted at suspect areas of concern identified through document reviews, interviews with current

and former employees, and the analysis of aerial photographs. This screening occurred at areas that were not being investigated under the IR program. When preliminary screening indicated the potential presence of contamination at an AOC, that AOC was incorporated into the IR program. When preliminary screening did not indicate the presence of contamination, and field observations, interviews, and records concurred with the screening indication, the AOC was considered uncontaminated and will not undergo further investigation. When preliminary screening was inconclusive, or if field observations, interviews, and records indicated the potential presence of contamination, the AOC was incorporated into the IR program. Tables 1 and 2 of Enclosure (B) include summarized results of the EBS sampling and analytical efforts. The results of environmental sampling have been crucial in the identification and characterization of potentially contaminated areas at the NASD.

E. RESULTS OF CLASSIFICATION

All real property at NASD was reviewed for the potential of contamination from hazardous substances, petroleum products, and petroleum product derivatives as described in the preceding section. Of the approximately 7,879 acres of NASD Vieques property to be transferred, about 7,389 acres have been identified as uncontaminated and 490 acres delineated as potentially contaminated. Enclosure (A) is a map that shows the results of this classification process.

Enclosure (B) consists of two tables that classify all significant areas investigated at NASD into two categories:

- CERFA Uncontaminated Property at NASD Vieques (Table 1), and
- Potentially Contaminated Areas at NASD Vieques (Table 2).

Enclosure (B) also includes figures made from mosaics of 1994 aerial photographs for northeastern, northwestern, and southeastern portions of NASD, on which are shown the locations of significant areas that were investigated for this effort to identify uncontaminated property. The locations annotated on these “photo-mosaic” figures correspond with those named in Tables 1 and 2 in Enclosure (B).

Areas not specifically included in either table exhibited no evidence or concern of a release or threatened release of a hazardous substance or petroleum product or their derivative and are also identified as uncontaminated property, as shown in Enclosure (A).

1. Property Identified as Uncontaminated

About 7,389 acres of NASD property have been identified as uncontaminated. Most of the NASD property exhibited no evidence of contamination as defined by CERCLA during the investigation and review process described in the section above. However,

some areas showed a possibility for contamination during the initial information review phases of the process.

Table 1 of Enclosure (B), titled "CERFA Uncontaminated Property at NASD Vieques", lists significant areas that have been evaluated and subsequently eliminated as posing a threat of an environmental release. For each area, the table contains the basis for elimination of that area from further consideration as "potentially contaminated". Areas were eliminated from further consideration based on evaluations of one or more of the following:

- Physical site inspection.
- Environmental Sampling.
- Interviews with current and former employees.
- Review of applicable laws and regulations (some areas pose potential environmental compliance issues, but not a CERCLA hazardous substance release issue, as the CERFA identification process relates only to actual or threatened CERCLA releases).

Some areas which received extensive investigative and review efforts, and which were determined to be uncontaminated as a result of those efforts, are discussed below, as are some otherwise noteworthy uncontaminated areas.

(a) Ammunition Storage Magazines

An extensive review and investigation effort was undertaken for these facilities. Gaining access to the inactive magazines proved to be difficult, as many of the magazines, and some of the access roads to them, were completely overgrown. All 102 magazines at NASD were entered, visually inspected for environmental concerns, and photographed. While many magazines had unusual items stored in them (Red Cross supplies, uniforms, electronic equipment, etc.) none showed any indications of a release or threatened release of a CERCLA hazardous substance to the environment. In one magazine, #260, a small amount of a highly viscous, tar-like substance was observed on the floor, but presented no threat of release. Many of the inactive magazines had bats or bees inhabiting them.

After the magazines are cleaned of debris, they will be inspected and undergo closure in accordance with Department of Defense Explosives Safety Board requirements, which will ensure they are safe for transfer to the public.

(See photographs on Pages 5 and 6 of Enclosure (C)).

(b) Western Training Area

Interviews with former and current employees at NASD revealed that the far western portion of Vieques had been used in the past for maneuver training exercises. These exercises included Marine amphibious landings in the area of Green Beach, and small unit tactical maneuver training, such as “ambush” training. There is no evidence that the training included “live fire”, or the use of explosives or pyrotechnics, nor that they involved maintenance or industrial operations with the potential to adversely impact the environment.

(c) Areas Identified by Aerial Photograph Analysis

The analysis of aerial photographs covering the periods 1936-1999 (see section D.3. above) revealed the presence of numerous “ground scars”, cleared areas, and other anomalies. Each of these areas was further analyzed to determine the proper CERFA classification. Analysis included record reviews, witness interviews, and site inspections. The vast majority of these sites initially identified through aerial photography were determined to be attributable to farming and cattle grazing operations (many pre-dating Navy operations) and to be of no environmental significance.

(d) AOC A – Well

This well was used from approximately the 1960s-1980s as a water supply for livestock. A site investigation conducted in 1989 designated this well as an Area of Concern due to its proximity to Solid Waste Management Unit -05 (SWMU-05), the Inhibited Red Fuming Nitric Acid /Mixed Amine Fuel-4 Disposal Site (see subsection 2.(b) below).

Further Investigation has revealed that the well is approximately one-mile southeast and is not downgradient from SWMU-5. Groundwater samples collected from the well at AOC A were screened against the Primary Drinking Water Maximum Contaminant Levels (MCLs); none of the detected compounds exceeded the MCLs. Therefore, no contamination from past or current Site activities is suspected at AOC A.

(e) Area of Concern G – Aboveground Storage Tanks at Green Beach

Three large Aboveground Storage Tanks (ASTs), approximately 50,000-60,000 gallons each, are located at Green Beach at the western end of Vieques Island. A black residue was observed emanating from the ASTs; speculated to be residue of molasses from sugar production activities that occurred on Site prior to U.S. Navy operations (1900-1940s). Site interviewees stated that the tanks were used only to store molasses. However, a 1951 drawing obtained from a records search identified the ASTs as containing diesel and gasoline. No piping was observed.

One soil sample near the base of each AST (three total) was collected at AOC G. All of the analytical results for samples collected at AOC G were below the detection limit for the EPA method used. Therefore, no contamination from the ASTs at AOC G is suspected.

(See photographs on Page 3 of Enclosure (C)).

2. Property Identified as Potentially Contaminated

Through the EBS and other recent Installation Restoration Program investigative and review efforts, 17 areas, a total of 490 acres, have been identified as potentially contaminated. These 17 potentially contaminated areas are included in the 10 separate locations delineated as “potentially contaminated” the Enclosure (A) map. Due to the time constraints created by the unusual nature of this transfer effort, for the purposes of this CERFA property classification, the Navy has taken a very conservative approach to the identification and delineation of potentially contaminated areas. As such, areas for which little evidence of a release or threatened release of a hazardous substance exists have been considered to be potentially contaminated and will undergo further investigation under the Navy’s IR Program.

Table 2 of Enclosure (B), titled “Potentially Contaminated Areas at NASD Vieques”, lists the areas classified as “potentially contaminated”; i.e., constituting a potential CERCLA release. All such areas are planned for transfer using the CERCLA Early Transfer Authority and will be remediated in accordance with applicable laws regulating site restoration by the Navy under its IR Program.

The following subsections describe the Potentially Contaminated Areas and the rationale that was used to delineate the area boundaries.

(a) SWMU 04 - Inactive Waste Explosive Open Burn/ Detonation Range

(1) Background

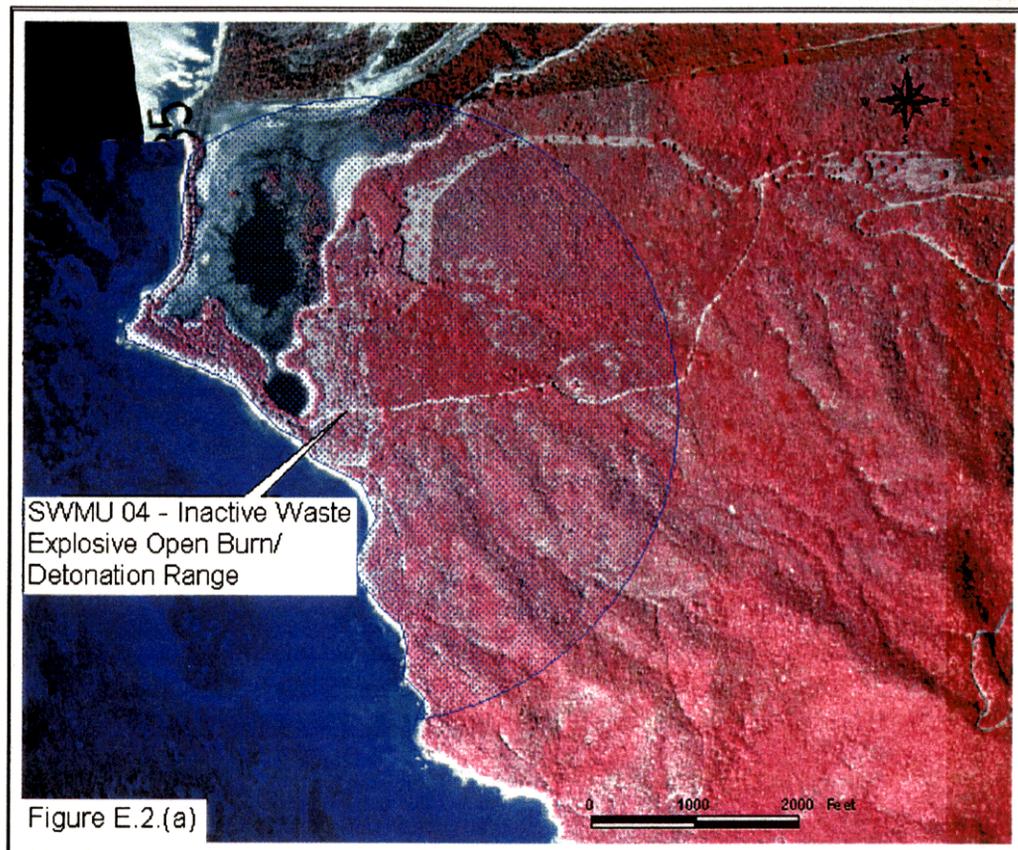
The inactive open burn/detonation unit (SWMU 04), located on the western end of Vieques Island and currently overgrown with vegetation, was utilized for thermal destruction of waste munitions, fuels or propellants, and other ordnance related items. The material to be burned was placed in the open burn area and a squib or other detonator was placed in the waste material. The open burn was then initiated from a safe distance using electrical detonation. This unit may have been used as early as the 1940s, and is known to have been used from 1969 to about 1980. SWMU 04 has been inactive since the early 1980s. The inactive open burn/detonation area was reportedly swept for live munitions by an Explosive Ordnance Demolition (EOD) team from NASD.

(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include soil and groundwater sampling and magnetometer surveys to identify contaminants and potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

This potentially contaminated area is 439.0 acres as shown in the following figure. The once active area of SWMU 04 was originally believed to be approximately 0.5 miles long and 200 yards wide. However, recent site visits indicate the site may be significantly larger. Transects have been cut through the underbrush and detonated ordnance has been found as much as 2,200 feet from the burn pit area (due to being "exploded" out of the pit). Due to the possibility for ordnance to be found away from the burn pit, a large area was delineated for this potentially contaminated site to provide for a conservative safety buffer. As shown in the figure below, the site boundary was created by placement of an arc 3,000 feet in radius around the site from the north to the south shoreline. No ordnance debris has been found farther than 2,200 feet from the pit area, and it is not anticipated that any would be found at any greater distance.



(b) SWMU 05 – Inhibited Red Fuming Nitric Acid /Mixed Amine Fuel-4 Disposal Site

(1) Background

This inactive unit is the site where, in 1975, approximately 7,000 pounds of fuel were emptied from leaking drones into a low spot in a road near Building 422. The fuel contained 5,275 pounds of inhibited red fuming nitric acid (IRFNA) and 1,775 pounds of mixed amine fuels (MAF-4) which were emptied into the Quebrada.

The site was evaluated in 1988, most specifically to determine whether the drone disposal had adversely impacted neighboring water supplies for local cattle. The results did not indicate the need for further investigation.

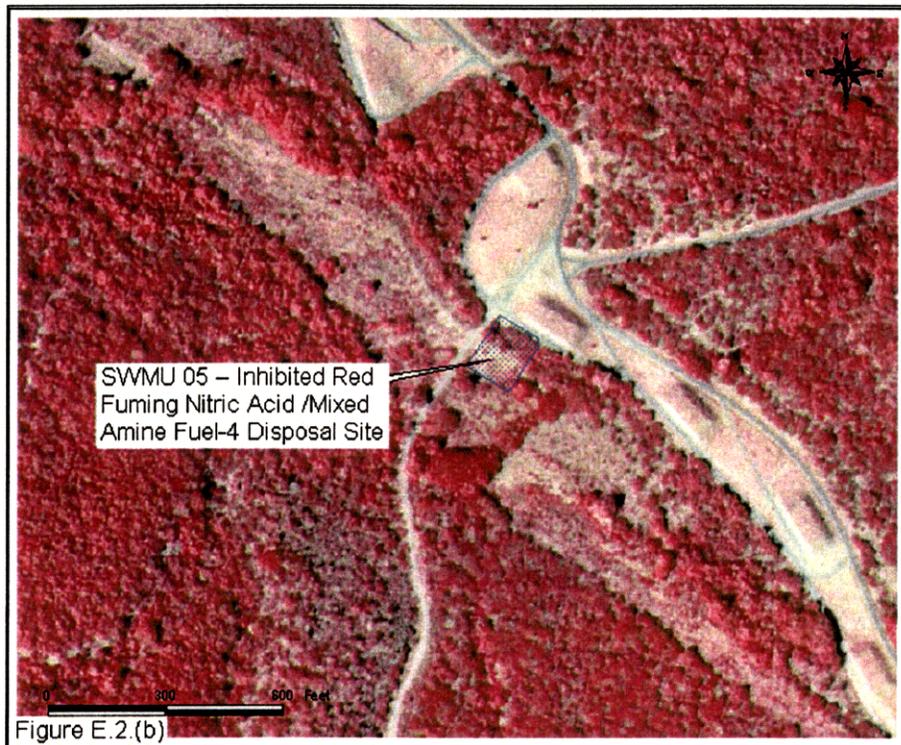
(See photograph on Page 5 of Enclosure (C)).

(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include soil and groundwater sampling to determine whether contaminants are present and identify potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

This potentially contaminated area is 0.4 acres in size and includes a buffer of about 50 feet on each side, as shown in the following figure.



(c) SWMU 06 - Mangrove Disposal Site

(1) Background

The Mangrove Disposal Site is located in an oceanside mangrove swamp in Laguna Arenas along North Shore Road (Route 70) on the NASD. There is no known history of permits pertaining to this site. The disposal site was in use during the 1960s and 1970s, and was used as a base disposal area. The waste materials extend northeast from the Laguna Kiani Bridge approximately 300 feet into the mangrove swamp for about 100 to 120 feet in a northerly direction, and about 10 feet in a southerly direction from North Shore Road. All types of trash were disposed at this site, including cans of lubricants and oil, solvents, paints and rubble.

In a 1988 investigation, the site was estimated to contain approximately 800 cubic yards of disposal material, including approximately 6,400 pounds of potentially hazardous material. Much of the waste is scrap metal; most is believed to be non-hazardous, solid waste. Soil, surface water, and sediment sampling conducted in 1988 failed to detect elevated levels of contaminants.

(See photographs on Pages 1 and 2 of Enclosure (C)).

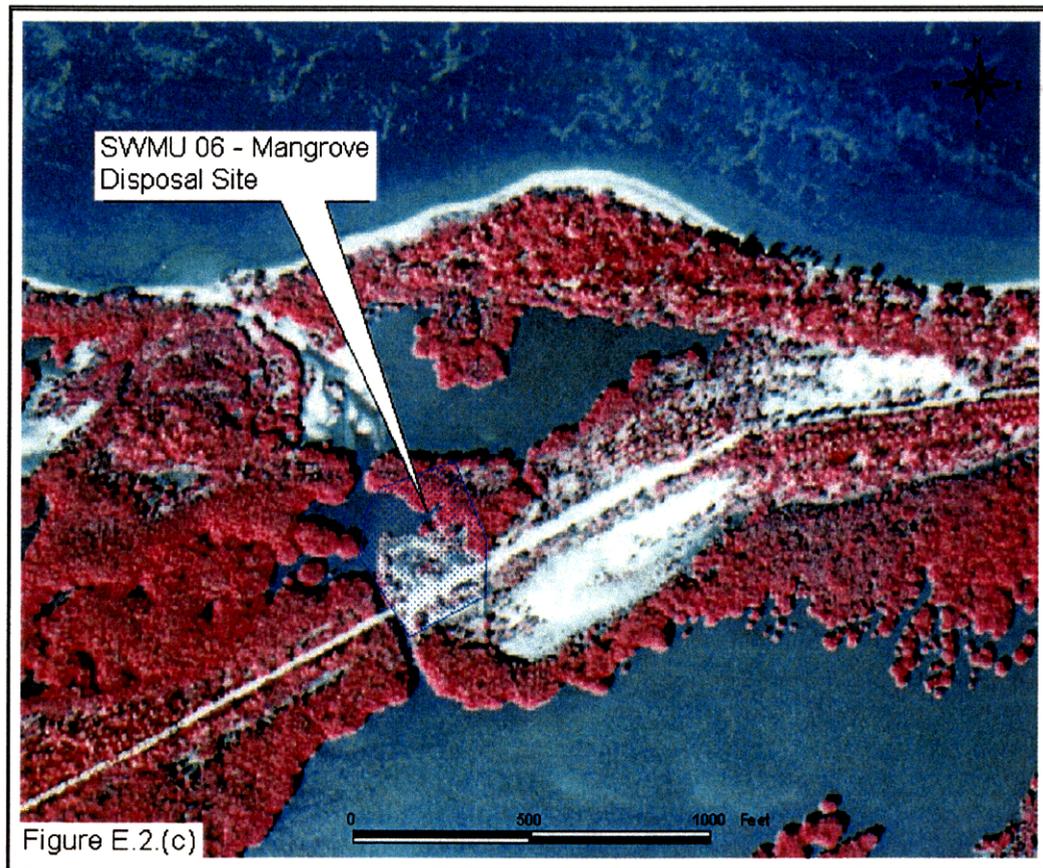


Figure E.2.(c)

(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include analysis of ground water, surface water/sediment, surface soil and subsurface soil samples, and a magnetometer survey to identify contaminants and potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

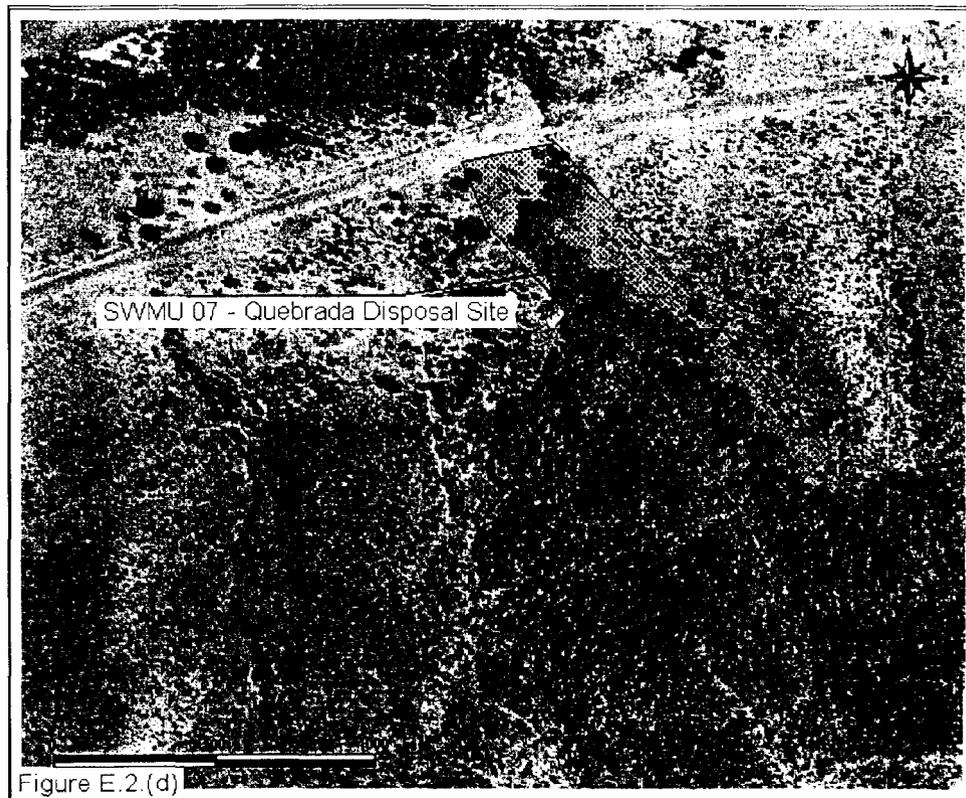
(3) Size of Potentially Contaminated Area

This potentially contaminated area is about 2.8 acres and is shown in Figure E.2.(c). The boundaries of the area are relatively well defined according to the recent site visit and an analysis of aerial photographs. The potentially contaminated area has been delineated to include a buffer of about 50 to 100 feet on each side of the suspected waste area.

(d) SWMU 07 - Quebrada Disposal Site

(1) Background

The Quebrada Disposal Site is a landfill site that was used between the early 1960s and late 1970s. The Quebrada varies from 20 to 30 feet wide and 10 to 20 feet deep. It is estimated more than 1,500 cubic yards (500 feet x 20 feet x 4 feet) of material may be present at the site. During an inspection of the site in March 2000, it was noted that all of the debris is lying on a very steep slope of a narrow ravine.



(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include surface soil and groundwater sampling to identify contaminants and potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

The size of this area is about 10.0 acres. As shown in Figure E.2.(d), it was delineated to include the waste area and the downstream quebrada bed to the North Shore Road. The width of the area is approximately 325 feet wide to accommodate the quebrada and a generous buffer area that ranges from about 75 to 150 feet wide on each side.

(e) SWMU 10 - Waste Paint and Solvents Disposal Site

(1) Background

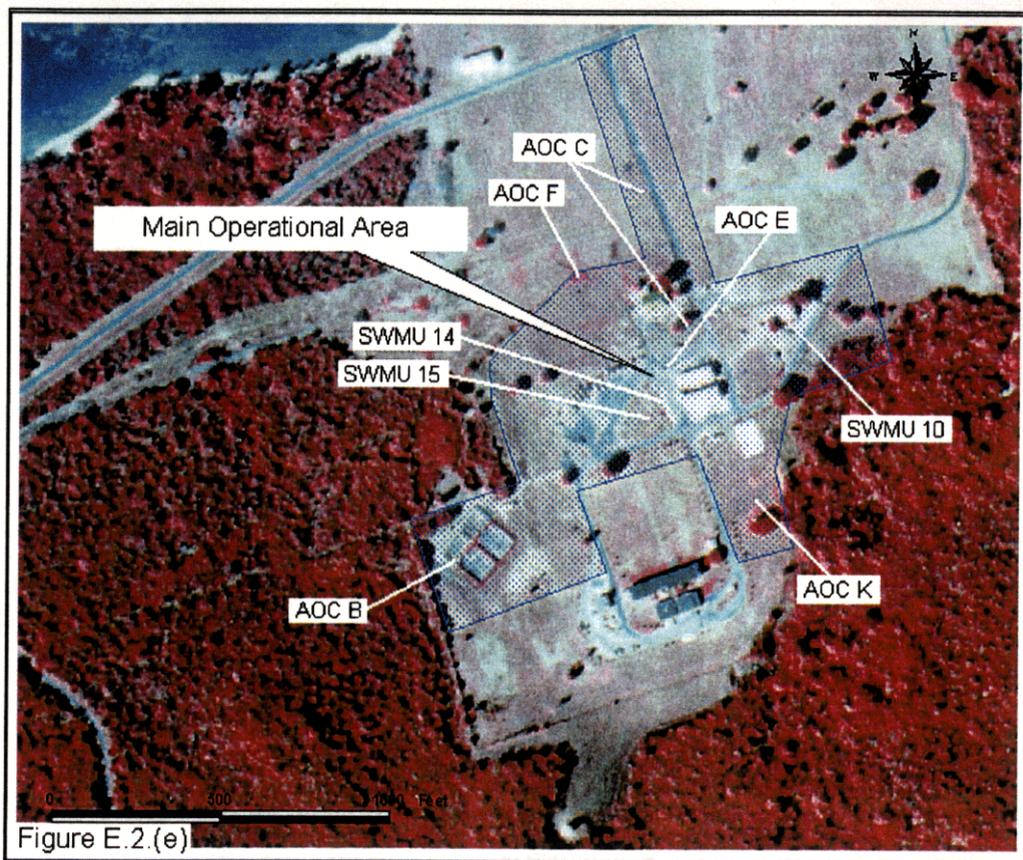
The Waste Paint and Solvents Disposal Site consists of an area of soil outside the Paint Locker, Building 4001, which was used for the open dumping of waste paints and solvents. SWMU 10 has been in use since the mid-1970s. Waste paints and solvents are now transferred to Naval Station Roosevelt Roads for proper disposal.

(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include analysis of soil samples to determine whether contaminants are present and identify potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

This area is located in the main operational area of NASD. As shown below in Figure E.2(e), it is one of 8 potentially contaminated areas that are delineated as a group due to the close proximity of these areas to each other. A rectangular buffer was of about 200 feet was included to the south and east of this site.



(f) SWMU 14 - Wash Rack

(1) Background

This unit is located near the Transportation Shop (Building 2016) and has been in use since the late 1970s. The area is a concrete driveway with 4-inch curbs on each side and ramps on each end, measuring approximately 20 feet long by 10 feet wide. The area is primarily used for cleaning Navy vehicles. Facility personnel stated that degreasing solvents are occasionally used in this area to facilitate cleaning. A swale at the end of the unit facilitates the discharge of runoff water to a ditch, which eventually discharges to the Atlantic Ocean.

(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include analysis of soil samples and sediment samples (from the oil/water separator) to determine whether contaminants are present and identify potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

This area is located in the main operational area of NASD. As shown in Figure E.2(e), it is one of 8 potentially contaminated areas that are delineated as a group due to the close proximity of these areas to each other. As shown in the figure, the boundaries of the potentially contaminated property for this group provide a generous buffer for this site.

(g) SWMU 15 - Waste Transportation Vehicle

(1) Background

This unit was associated with a Navy truck located in the vicinity of the Transportation Shop that contained numerous drums of a waste labeled as caustic D002 (EPA code for corrosive waste). It has been determined that the drums contained one of the components of napalm. Napalm is composed of fuel and a gel. The truck contained 55-gallon metal drums and overpack drums, which suggests that the material inside may have leaked at one time from a drum or another source. The drums were subsequently shipped to Naval Station Roosevelt Roads and properly disposed of in the early 1990s. The truck and drums are no longer located at NASD.

(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include analysis of soil samples to determine whether contaminants are present and identify potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

This potentially contaminated area is located in the main operational area of NASD. As shown in Figure E.2(e), it is one of 8 potentially contaminated areas that are delineated as a group due to the close proximity of these areas to each other. A buffer about 100 feet wide was included in the area to the south of the former location of the truck.

(h) AOC B - Wastewater Treatment Plant and Disposal Ground

(1) Background

The WWTP has been in operation since approximately 1983, and consists of one aeration tank and one separation tank with two blowers to supply the air for the biological treatment. Effluent from the WWTP then drains into a series of four

lagoons with no discharge point. Disposal of hazardous constituents may have occurred at the WWTP during past operations.

(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include analysis of soil and groundwater samples to determine whether hazardous contaminants are present and identify potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

This area is located in the main operational area of NASD. As shown in Figure E.2(e), it is one of 8 potentially contaminated areas that are delineated as a group due to the close proximity of these areas to each other. As shown in the figure, a buffer ranging from 30 to 150 feet wide was included for this area.

(i) AOC C - Drainage Ditch in the Vicinity of Transportation Shop Area

(1) Background

Two ditches near the transportation shop routinely carry storm water runoff during rain events. An oily sheen was observed in one of the ditches during the visual site inspection. It is unknown whether hazardous constituents are routinely discharged to the ditch, which ultimately drains to the Atlantic Ocean. A septic tank that serves Buildings 2015 and 2016 was also included in this area.

(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include analysis of soil and groundwater samples to identify contaminants and potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

This area is located in the main operational area of NASD. As shown in Figure E.2(e), it is one of 8 potentially contaminated areas that are delineated as a group due to the close proximity of these areas to each other. It is not expected that contaminants from this area will be found outside of the ditch. The potentially contaminated zone for the ditch was created about 180 feet wide to include the ditch and a conservative buffer zone.

(j) AOC E Site 2016 UST

(1) Background

UST Site 2016 is located near the northwest corner of Building 2016 and is the former location of a 550-gallon, single-wall, steel waste oil UST. The piping system associated with the UST consisted of single-wall steel pipes. The UST was installed in 1970 to store waste oil generated from vehicle maintenance activities that take place in Building 2016.

As part of UST removal activities conducted at Site 2016, soil samples collected and submitted for laboratory analysis detected total petroleum hydrocarbon (TPH) concentrations ranging from 568 to 1,790 milligrams per kilogram (mg/kg). Navy personnel indicated that no accidental spills associated with the UST at Site 2016 had occurred at the site.

(2) Investigative Status

A site characterization investigation was conducted and reported in April 1999 to the Puerto Rico Environmental Quality Board (PREQB). Soil borings and monitoring wells were installed at the site. The purpose of the site investigation was to assess the horizontal and vertical extent of potential impacts from the UST on soil and groundwater at Site 2016. Exceedances existed for the PREQB target levels in selected soil and groundwater samples. Laboratory analytical data showed the dissolved concentration of benzene detected at monitoring well 1 was 17 micrograms per liter ($\mu\text{g/L}$) which exceeds the PREQB target level of 5 $\mu\text{g/L}$. The well is located in the vicinity of the former UST. Laboratory analytical data showed that TPH was detected in a soil boring above the PREQB target level of 100 mg/kg for this constituent. Other soil samples taken at this site were below PREQB target levels.

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include analysis of soil and groundwater sampling to determine potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

This area is located in the main operational area of NASD. As shown in Figure E.2(e), it is one of 8 potentially contaminated areas that are delineated as a group due to the close proximity of these areas to each other. The former UST area is located near the center of the property delineated as potentially contaminated at the main operational area. The boundaries of the potentially contaminated property for this group provide a conservative buffer for this site.

(k) AOC F - UIC Septic System Site

(1) Background

The UIC Number 13 is located near the Enlisted Men's (EM) Club and has a capacity of 1,500 gallons. In 1997 this UIC was planned for closure. A sampling and testing program was conducted in July 1997. Results of the soil sampling showed exceedances of water quality standards for several parameters. Soil samples were collected in July 1997 and analysis indicated criteria was exceeded for several metals.

(2) Investigative Status

An expanded Preliminary Assessment/Site Inspection (PA/SI) is in progress for this site under the Navy's IR Program. Investigative efforts for this area include analysis of soil and groundwater samples to identify contaminants and determine potential environmental concerns. Completion of the draft report for this effort is scheduled for August 31, 2000.

(3) Size of Potentially Contaminated Area

This area is located in the main operational area of NASD. As shown in Figure E.2(e), it is one of 8 potentially contaminated areas that are delineated as a group due to the close proximity of these areas to each other. A buffer ranging from 50 to 100 feet wide has been included in the potentially contaminated area on the northern side of the site location.

(l) AOC K (Water Well at Main Operations Area)

(1) Background

This well is located under a tree in the main operations area, and was used as a potable water supply for the base from approximately 1941-1979. This well is in close proximity to a number of potentially contaminated sites at the Main Operations Area. Past analysis of samples indicated the existence of benzene at a level slightly above the MCL in this well.

(2) Investigative Status

This potentially contaminated area will be investigated and, if necessary, restored under the Navy's IR Program.

(3) Size of Potentially Contaminated Area

This area is located in the main operational area of NASD. As shown in Figure E.2(e), it is one of 8 potentially contaminated areas that are delineated as a group

due to the close proximity of these areas to each other. A buffer ranging from about 75 to 100 feet has been included for this site.

(m) AOC I Asphalt Plant

(1) Background

This area is the location of former asphalt plant operations conducted at NASD Vieques from the 1960s until 1998. The specific Area of Concern consists of two asphalt truck parking/loading containment areas and the location of two former diesel above ground storage tanks.

An analysis of recently collected (April 2000) surface soil samples indicate elevated levels for total petroleum hydrocarbons (TPH) in one sample collected from the former storage location of the two diesel ASTs.

(See photographs on page 4 of Enclosure (C)).



(2) Investigative Status

This potentially contaminated area will be investigated and, if necessary, restored under the Navy's IR Program.

(3) Size of Potentially Contaminated Area

This area is 1.5 acres. As shown in the Figure E.2.(m), a buffer ranging from 75 to 150 feet around the plant location has been included in this area.

(n) AOC H Abandoned Power Plant

(1) Background

The power plant operated from 1941 to 1943. Fuel was stored in an aboveground storage tank (AST) on the western side of the building. It is estimated the tank had a capacity of 2,000 to 3,000 gallons. It was also reportedly used for Fire Fighter training from the 1960s through the 1980s, whereby diesel fuel was placed on tires and ignited inside the building.

(See photographs on page 7 of Enclosure (C)).

(2) Investigative Status

This potentially contaminated area will be investigated and, if necessary, restored under the Navy's IR Program.

(3) Size of Potentially Contaminated Area

This size of this area is 1.7 acres. Fire Fighter training reportedly was confined to the building. As shown in the figure below, a buffer zone of about 150 feet has been included on the northern, down-gradient side of the area.



(o) AOC L Abandoned Septic Vault

(1) Background

This area consists of a 25-foot by 40-foot concrete vault with separate compartments located north of the Main Operations Area. It is suspected that this vault was used in the 1940s for treatment and disposal of installation sewage and that no drainage field was present. There are no indications that this vault was used for any kind of industrial activity. However, disposal of hazardous constituents may have occurred at the septic vault during past operations

It is suspected that this vault was used in the 1940s for treatment and disposal of installation sewage and that no drainage field was present. There are no indications that this vault was used for any kind of industrial activity.

(2) Investigative Status

This potentially contaminated area will be investigated and, if necessary, restored under the Navy's IR Program.

(3) Size of Potentially Contaminated Area

The size of this area is 0.1 acres, as shown in the figure below. As any potential contaminants from this source are likely to be located in or very near the vault, the size of this area was delineated to include the vault and a perimeter buffer zone about 30 feet wide.



020050044

(p) AOC R Former Operations/Staging Area

(1) Background

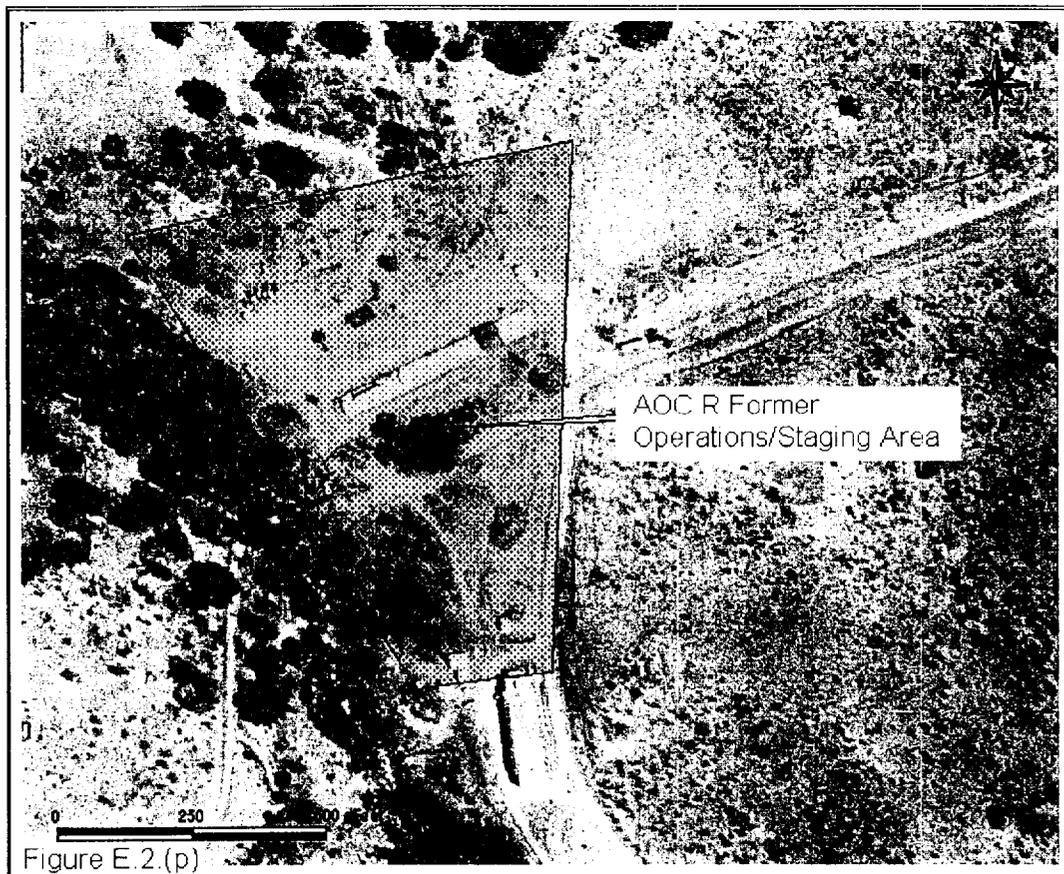
This area was used as a construction staging area and public works operational area from about 1965 to 1971. The large concrete pad at the site was present before the Navy owned the area and can be seen in 1937 aerial photographs. In the late 1960s a carpentry shop and enlisted club were located on the pad. Light vehicle maintenance activities, such as oil changes, were conducted near the pad to the northwest. Additionally, a large AST was once located near Building 401.

(2) Investigative Status

This potentially contaminated area will be investigated and, if necessary, restored under the Navy's IR Program.

(3) Size of Potentially Contaminated Area

This area is 12.0 acres in size and is shown in the figure below overlaid on an aerial photograph from 1967. The potentially contaminated area was delineated to include the former location of the AST, the concrete pad, the area where vehicle maintenance occurred and a generous buffer zone.



(q) AOC J Former Operations Area Disposal Site

(1) Background

This area was used as a solid waste disposal site associated with construction staging activities in the mid-1960s until 1973, when the waste was removed from the site and placed in a municipal landfill off base. The area of waste covers approximately 1,500 ft², and appears to be 2-4 ft. deep. Observed waste consists primarily of scrap metal, including numerous exhaust vents associated with diesel construction equipment, and small amounts of glass and wood waste. The area is immediately adjacent to a quebrada that drains into the Vieques Sound.

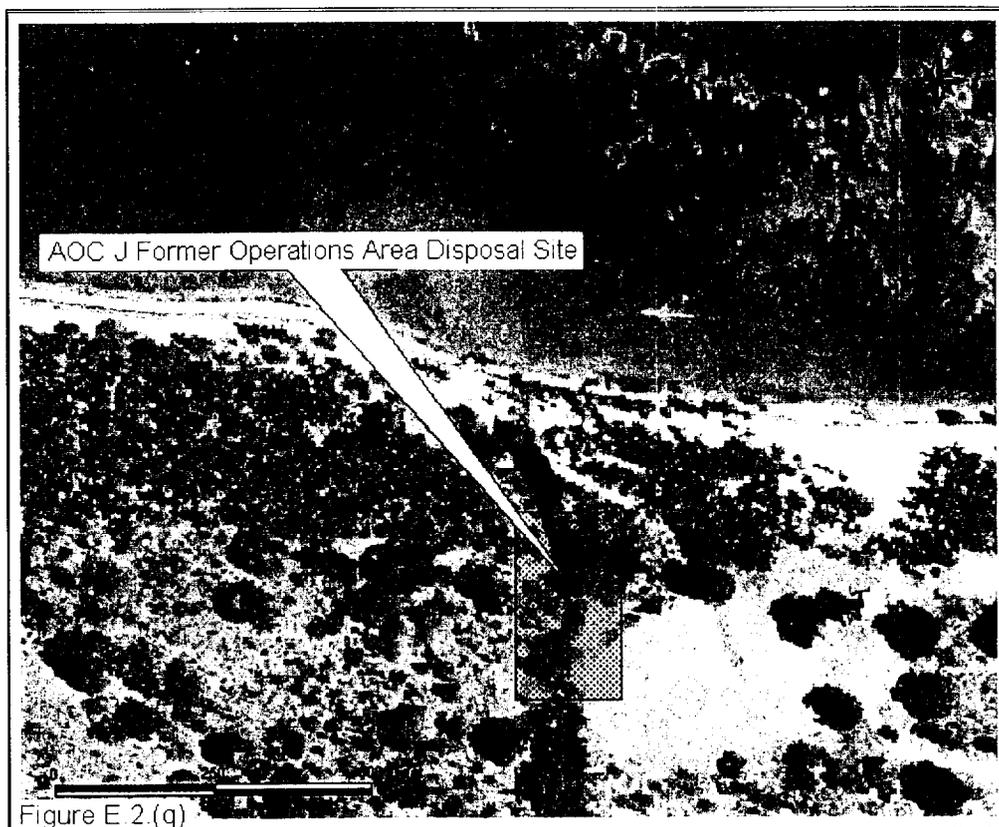
Results from analysis of soil sampling conducted in April 2000 revealed no constituents that exceed the applicable screening levels.

(2) Investigative Status

This potentially contaminated area will be investigated and, if necessary, restored under the Navy's IR Program.

(3) Size of Potentially Contaminated Area

This area is 1.2 acres and was delineated to include the waste area and a buffer zone about 75 feet wide on each side of the location of waste.



F. IDENTIFICATION OF UNCONTAMINATED PROPERTY MAP, NASD VIEQUES, PUERTO RICO

Enclosure (A) is a map which classifies the property in accordance with the results shown on the tables discussed in the above section. Of the approximately 7,879 acres of NASD Vieques property to be transferred, about 7,389 acres have been identified as uncontaminated and 490 acres as potentially contaminated.

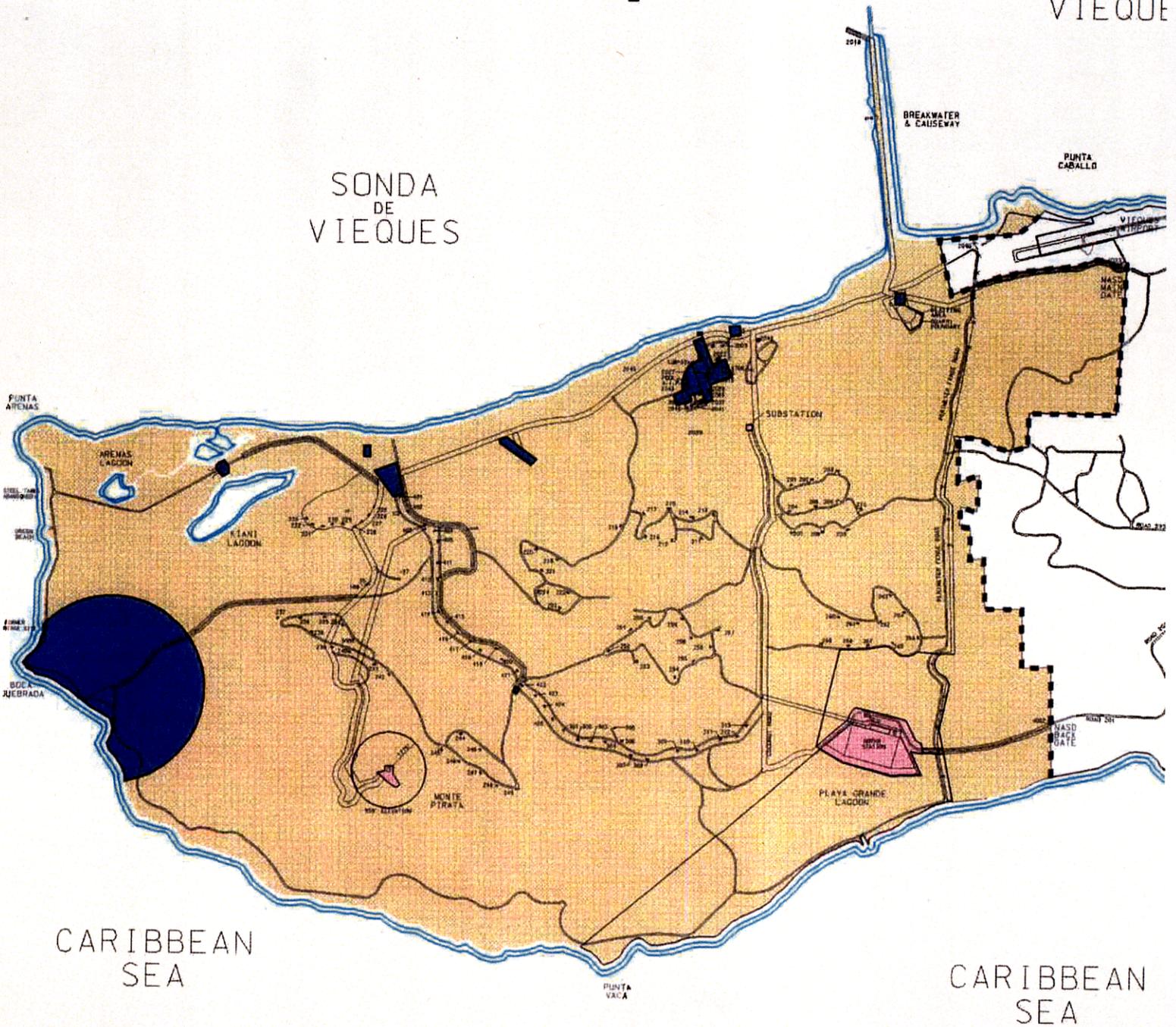
G. PHOTOGRAPHS OF AREAS INVESTIGATED DURING THE EFFORT TO IDENTIFY UNCONTAMINATED PROPERTY AT NASD VIEQUES, PUERTO RICO

Enclosure (C) provides photographs of some of the areas investigated during the effort to identify uncontaminated property at NASD Vieques.

Identification of Uncontaminated Property Map NASD Vieques, PR

SONDA
DE
VIEQUE

SONDA
DE
VIEQUES



CARIBBEAN
SEA

CARIBBEAN
SEA

LEGEND

- CERFA UNCONTAMINATED AREA
- POTENTIALLY CONTAMINATED AREA
- NAVY RETAINED AREA
- NAVY PROPERTY BOUNDARY

Last Revision : 06/23/0



NOT TO SCALE
ENCLOSURE (A)

Table 1. CERFA Uncontaminated Property at NASD Vieques

Area Name	Description of Area	Investigative Status	CERFA Classification
<p>AOC-A. Well associated with SWMU-5, Drone Fuel Disposal Site. (See Summary Map SE Section)</p>	<p>Former production well used for cattle operations. RFA noted concern due to relative proximity to SWMU-5.</p>	<p>Identified in RFA, further investigated by EBS sampling, visual inspection, interviews, and aerial photography analysis. EBS investigation identified that the well is approximately one-mile southeast of SWMU-5 and not downgradient, and therefore, would not be impacted by SWMU-5. In addition, sampling conducted during the EBS failed to identify any constituents associated with or connected to the potential release at SWMU 5. No further action planned.</p>	<p>Uncontaminated.</p>
<p>AOC-D. Abandoned Vehicles (See Summary Map NE Section)</p>	<p>Two abandoned fuel trucks located at Buildings 204 and 215.</p>	<p>Identified in RFA, further investigated by EBS sampling, visual inspection, interviews, and aerial photography analysis. EBS samples of soils directly beneath the fuel trucks (two per truck) did not identify the presence of any TPH or benzene, toluene, ethylbenzene, and xylenes (BTEX). No further action planned.</p>	<p>Uncontaminated.</p>
<p>AOC-G. ASTs at Green Beach (See Summary Map NW Section)</p>	<p>Three large ASTs located in the vicinity of Green Beach, potentially used for fuel storage.</p>	<p>Identified and investigated by EBS sampling, visual inspection, interviews, and aerial photography analysis. EBS interviews indicated ASTs were used for molasses storage only; no fuels. Aerial photography shows ASTs present prior to Navy occupation (1937). EBS samples of soils beneath the ASTs did not identify the presence of TPH or BTEX. No further action planned.</p>	<p>Uncontaminated.</p>
<p>AOC-K. Water Wells (See Summary Map NE & NW Section)</p>	<p>Abandoned water wells located throughout the Site. Status of wells, sampling results, and global positioning system (GPS) coordinates are available from a 1997 U.S. Geological Survey Report.</p>	<p>Previously investigated by U.S. Geological Survey in 1997; results will be incorporated in EBS. Investigation revealed no evidence of a CERCLA release with exception of one well in the main operations area. That well will be investigated under the Navy's IR Program. For all other wells in this AOC there are no concerns with respect to CERCLA hazardous substances.</p>	<p>Uncontaminated (with exception of one well in the main operation area of the base).</p>

Table 1. CERFA Uncontaminated Property at NASD Vieques (cont.)

Area Name	Description of Area	Investigative Status	CERFA Classification
AOC-M. Asbestos Floor Tile	Possible asbestos-containing material (ACM) in floor tile of buildings on site.	To be investigated under separate contract for comprehensive asbestos survey. Investigation revealed no evidence of a CERCLA release; therefore, no concern exists with respect to CERFA.	Uncontaminated.
AOC-N. Lead Based Paint (LBP)	Suspected in all buildings on Site constructed prior to 1978.	Assumed present in all buildings on Site. Investigation revealed no evidence of a CERCLA release; therefore, no concern exists with respect to CERFA.	Uncontaminated.
AOC-O. ROTHR Contractor Staging Area (See Summary Map SE Section)	Construction staging area for the Re-locatable Over The Horizon Radar (ROTHR) site. Observed ASTs containing diesel fuel, gasoline, and hydraulic fluid/oils; drums containing waste oil; numerous small spills of these substances.	Identified and investigated by EBS. Subsequent visual inspection of the revealed that the area had been cleaned; no suspicion of actionable release. Area lies within the ROTHR property to be retained by the Navy; therefore, no concern with respect to CERFA.	Not applicable; area is within ROTHR property to be retained by U.S. Navy.
AOC-P. Munitions Magazine #260 (See Summary Map SE Section)	Small (less than 5 gallons) spill of petroleum-type substance (tar); automotive parts inside magazine.	Identified and investigated by EBS. Spill was fully contained within magazine; no release to the environment occurred. Therefore, no concern exists with respect to CERFA. Magazine will be cleaned prior to transfer.	Uncontaminated.
AOC-Q. Solid Waste Under La Hueca Creek Bridge (See Summary Map SE Section)	Moderate amounts of municipal refuse and construction material deposited in a quebrada near a bridge on the La Hueca parcel.	Identified and investigated by EBS sampling, visual inspection, interviews, and aerial photography analysis. EBS samples of soils in the quebrada identified no organic or inorganic compounds exceeding the EPA Generic Soil Screening Levels for ingestion. No further action planned.	Uncontaminated.

Table 1. CERFA Uncontaminated Property at NASD Vieques (cont.)

Parcel Name	Description of Area	Investigative Status	CERFA Classification
Aerial photography sites ¹ PI-1 through PI-6 (See Summary Map NW Section)	Various ground scars, possible stains, liquid, and vegetation stress located immediately north of SWMU-4, observed in 1964, 1967, and 1970 aerial photographs. Possible concern due to location immediately north of SWMU-4.	Identified by aerial photography analysis, investigated by EBS interviews and visual inspection. Interviews conducted with NASD Vieques personnel indicated that the area was used for cattle ranching operations from the 1950s-1980s. Investigation revealed no evidence that disposal or thermal destruction of waste munitions or other waste occurred in the suspect area. No further action planned.	Uncontaminated.
Aerial photography sites PI-7, PI-15, and PI-16 (See Summary Map SE Section)	Ground scar, possible debris, and possible trenches located west from ROTH site, observed in 1964, 1967, and 1970 aerial photographs.	Identified by aerial photography analysis, investigated by EBS interviews and visual inspection. Interviews conducted with NASD Vieques personnel indicated that the area was used for cattle ranching operations from the 1950s-1980s. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area. No further action planned.	Uncontaminated.
Aerial photography site PI-8 (See Summary Map NW Section)	Ground scar northeast of Building 401, observed in 1985 and 1994 aerial photographs.	Identified by aerial photography analysis, investigated by EBS interviews and visual inspection. Interviews conducted with NASD Vieques personnel indicated that the area was used for deposition of natural debris such as trees and branches. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area. No further action planned.	Uncontaminated.
Aerial photography site PI-10 (See Summary Map NW Section)	Building foundation southeast of Magazine #228 in vicinity of water wells, observed in 1985 aerial photograph.	Identified by aerial photography analysis, investigated by EBS interviews and visual inspection. Interviews conducted with NASD Vieques personnel indicated that this building was the former pump house associated with the water wells that supplied water to Camp Garcia from approximately 1965-1975. The pumps were powered by electricity; no ASTs or USTs were used at the site. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area. No further action planned.	Uncontaminated.

Table 1. CERFA Uncontaminated Property at NASD Vieques (cont.)

Parcel Name	Description of Area	Investigative Status	CERFA Classification
<p>Aerial photography site PI-11 (See Summary Map NW Section)</p>	<p>Ground scar/vegetation stress northeast of Magazine #233, observed in 1967, 1970, and 1985 aerial photographs.</p>	<p>Identified by aerial photography analysis, investigated by EBS interviews and visual inspection.</p> <p>Interviews conducted with NASD Vieques personnel indicated that area was used for security observations associated with the pumping of water to Camp Garcia from approximately 1965-1975. Personnel stated that the area is slow to re-vegetate. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area.</p> <p>No further action planned.</p>	<p>Uncontaminated.</p>
<p>Aerial photography site PI-14 (See Summary Map SE Section)</p>	<p>Vegetation stress/dead trees at northwest end of Playa Grande Lagoon, observed in 1999 aerial photograph.</p>	<p>Identified by aerial photography analysis, investigated by EBS interviews and visual inspection.</p> <p>Interviews conducted with NASD Vieques personnel and Naval Station Roosevelt Roads (NSRR) Natural Resources personnel indicated that area of dead trees was due to salt water deposition in the area from the Playa Grande Lagoon due to a hurricane. Finding is consistent with EBS Site investigation. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area.</p> <p>No further action planned.</p>	<p>Uncontaminated.</p>
<p>Aerial photography site PI-17 (See Summary Map SE Section)</p>	<p>Access road and ground scars at north end of Playa Grande Lagoon, observed in 1964 aerial photographs.</p>	<p>Identified by aerial photography analysis, investigated by EBS interviews and visual inspection.</p> <p>Interviews conducted with NASD Vieques and NSRR personnel indicated that this area was used as a limestone borrow pit prior to Navy activity at the site. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area.</p> <p>No further action planned.</p>	<p>Uncontaminated.</p>
<p>Aerial photography sites PI-18, PI-19, and PI-20 (See Summary Map NW Section)</p>	<p>Access roads, ground scars, or possible debris located south of Magazine #230, observed in the 1967 aerial photographs.</p>	<p>Identified by aerial photography analysis, investigated by EBS interviews and visual inspection.</p> <p>Interviews conducted with NASD Vieques personnel indicated that the area was used for cattle ranching operations from the 1950s-1980s. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area.</p> <p>No further action planned.</p>	<p>Uncontaminated.</p>

Table 1. CERFA Uncontaminated Property at NASD Vieques (cont.)

Parcel Name	Description of Area	Investigative Status	CERFA Classification
<p>Aerial photography site PI-21 (See Summary Map NE Section)</p>	<p>Fenced area southwest of Magazine #204, observed in the 1985 aerial photographs.</p>	<p>Identified by aerial photography analysis, investigated by EBS interviews and visual inspection.</p> <p>Interviews conducted with NASD Vieques personnel indicated that the fenced area was used as a corral and watering trough for cattle ranching operations from the 1950s-1980s. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area.</p> <p>No further action planned.</p>	<p>Uncontaminated.</p>
<p>Aerial photography site PI-23 (See Summary Map NW Section)</p>	<p>Access road along north end of Site, observed in 1967 aerial photograph.</p>	<p>Identified by aerial photography analysis, investigated by EBS interviews and visual inspection.</p> <p>Interviews conducted with NASD Vieques personnel indicated that this was an access road for construction/installation of power line poles by the Puerto Rico Electric and Power Authority. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area.</p> <p>No further action planned.</p>	<p>Uncontaminated.</p>
<p>Aerial photography site PI-24 (See Summary Map SE Section)</p>	<p>Road/trench located adjacent to Coconut Road, observed in 1967 aerial photograph.</p>	<p>Identified by aerial photography analysis, investigated by EBS interviews and visual inspection.</p> <p>Interviews conducted with NASD Vieques personnel indicated that the area was used for cattle ranching operations from the 1950s-1980s. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area.</p> <p>No further action planned.</p>	<p>Uncontaminated.</p>
<p>Aerial photography sites PI-25, PI-26, and PI-27 (See Summary Map NE Section)</p>	<p>Access road, ground scar, light toned material, and possible debris located south of Magazine #203, observed in 1967 and 1970 aerial photographs.</p>	<p>Identified by aerial photography analysis, investigated by EBS interviews and visual inspection.</p> <p>Interviews conducted with NASD Vieques personnel indicated that the area was used for cattle ranching operations from the 1950s-1980s. Investigation revealed no evidence that disposal of waste or release of hazardous substance occurred in the suspect area.</p> <p>No further action planned.</p>	<p>Uncontaminated.</p>

Table 2. Potentially Contaminated Areas at NASD Vieques

Area Name	Description of Area	Investigative Status	CERFA Classification
Solid Waste Management Unit (SWMU)-4. Inactive Open Burning/ Waste Explosive Detonation Range (See Summary Map NW Section)	Thermal destruction of unserviceable munitions on open ground from approximately 1965-1980.	Identified in 1988 Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA), confirmed by Environmental Baseline Survey (EBS) visual inspection, interviews, and aerial photography analysis. Being investigated under Installation Restoration Program (IRP).	Potentially Contaminated.
SWMU-5, IRFNA/MAF-4 (Drone Fuel) Disposal Site (See Summary Map NW Section)	One-time disposal (1975) of 7,000 lbs. of drone fuel (inhibited red fuming nitric acid/mixed amine fuel #4 (IRFNA/MAF-4)) emptied into low spot on ground near Building 422.	Identified in RFA, 1984 Initial Assessment Study (IAS), and 1986/1988 Confirmation Study (CS); confirmed by EBS interviews. Being investigated under IRP.	Potentially Contaminated.
SWMU-6. Mangrove Disposal Site (See Summary Map NW Section)	Disposal of trash into mangrove swamp from approximately 1965-1980. Trash included lubricants, oils, solvents, and paint.	Identified in RFA, IAS, and CS, confirmed by EBS visual inspection, interviews, and aerial photography analysis. Being investigated under IRP.	Potentially Contaminated.
SWMU-7. Quebrada Disposal Site (See Summary Map NE Section)	Disposal of trash into quebrada (drainage area) from approximately 1965-1980. Trash included lubricants, oils, solvents, and paint.	Identified in RFA, IAS, and CS, confirmed by EBS visual inspection, interviews, and aerial photography analysis. Being investigated under IRP.	Potentially Contaminated.
SWMU-10. Waste Paint and Solvent Disposal Ground (See Summary Map NE Section)	Small quantities (less than 1 gallon) of paints, solvents, and thinners routinely disposed of on ground outside of Building 4001 from approximately 1971-1990.	Identified in RFA, confirmed by EBS interviews. Being investigated under IRP.	Potentially Contaminated.
SWMU-14. Wash Rack (near Building 2016) (See Summary Map NE Section)	Vehicle wash rack immediately west of Building 2016 discharges to a storm ditch; some degreasing solvents possibly used during cleaning.	Identified in RFA, confirmed by EBS visual inspection, interviews, and aerial photography analysis. Being investigated under IRP.	Potentially Contaminated.
SWMU-15. Waste Transportation Vehicle Storage Area (See Summary Map NE Section)	Parking area for a truck used to store and transport waste corrosive material in overpack drums. Drums kept on truck for over four months.	Identified in RFA, confirmed by EBS interviews. Being investigated under IRP.	Potentially Contaminated.

Table 2. Potentially Contaminated Areas at NASD Vieques (cont.)

Area Name	Description of Area	Investigative Status	CERFA Classification
AOC-B. Wastewater Treatment Plant and Disposal Ground (See Summary Map NE Section)	Pre-fabricated Wastewater Treatment Plant (WWTP), domestic sewage treated by aeration and chlorination. Effluent flows to disposal lagoons with no surface water discharge. In use since approximately 1983; still active.	Identified in RFA, confirmed by EBS visual inspection, interviews, and aerial photography analysis.	Potentially Contaminated.
(Area of Concern) AOC-C. Drainage Ditch Near Transportation Shop (See Summary Map NE Section)	Storm drainage ditch on the west and north side of Building 2016; possible spills of petroleum-related substances.	Identified in RFA, confirmed by EBS visual inspection and interviews. Being investigated under IRP.	Potentially Contaminated.
AOC-E. Former Waste Oil Underground Storage Tank (UST) at Building 2016. (See Summary Map NE Section)	Waste oil UST located outside of Building 2016. Contaminated soil discovered during removal of UST.	Identified in RFA and confirmed by 1999 UST Site Characterization Study. Being investigated under IRP.	Potentially Contaminated.
AOC-F. Enlisted Men's Club UIC Septic Tank (See Summary Map NE Section)	Septic tank associated with Building 2045, closed in 1997. Metals identified in soil sampling associated with the closure process exceeded standards.	Identified by sampling associated with closure under the Underground Injection Control (UIC) Program, confirmed by EBS visual inspection and interviews. Being investigated under IRP.	Potentially Contaminated.
AOC-H. Power Plant (See Summary Map SE Section)	Power Plant from 1941-1943; former aboveground storage tank (AST) on west side of building (approximately 2,000-3,000 gallons). Also used for Fire Fighter training from 1960s-1980s; diesel fuel placed on tires to initiate and sustain fire.	Identified by EBS visual inspection, interviews, and aerial photography analysis. Will be investigated under IRP.	Potentially Contaminated.
AOC-I. Asphalt Plant (See Summary Map NE Section)	Former AST storage area stained with asphalt emulsion.	Identified by EBS visual inspection, interviews, and aerial photography analysis. Will be investigated under IRP.	Potentially Contaminated.
AOC-J. Former Staging Area Disposal Site (See Summary Map NW Section)	Solid and potential hazardous waste disposal site from approximately 1965-1973.	Identified by EBS visual inspection, interviews, and aerial photography analysis. Will be investigated under IRP.	Potentially Contaminated.

Table 2. Potentially Contaminated Areas at NASD Vieques (cont.)

Area Name	Description of Area	Investigative Status	CERFA Classification
AOC-K. Water Wells (See Summary Map NE & NW Section)	Abandoned water wells located throughout the Site. Status of wells, sampling results, and global positioning system (GPS) coordinates are available from a 1997 U.S. Geological Survey Report.	Previously investigated by U.S. Geological Survey in 1997; results will be incorporated in EBS. Investigation revealed no evidence of a CERCLA release with exception of one well in the main operations area. That well will be investigated under the Navy's IR Program. For all other wells in this AOC there are no concerns with respect to CERCLA hazardous substances.	One well in Main Operations Area is Potentially Contaminated, others are uncontaminated.
AOC-L. Former Septic Vault (See Summary Map NE Section)	Suspected use in 1940s for treatment and disposal of installation sewage; no drainage field suspected.	Identified by EBS visual inspection, interviews, and aerial photography analysis. Will be investigated under IRP.	Potentially Contaminated.
AOC-R. Former Staging and Operations Area. Aerial photography sites PI-28 and PI-29 (See Summary Map NW Section)	Former construction staging and Public Works operations area from approx. 1965-1971. Large concrete pad present prior to Navy operations (observed in 1937 aerial photographs); carpentry shop and enlisted club on pad in late 1960s. Light vehicle maintenance (e.g., oil changes) occurred northwest of concrete pad. Former AST (approx. 5,000 gallons) located at Building 401.	Identified by EBS visual inspection, interviews, and aerial photography analysis. Will be investigated under IRP.	Potentially Contaminated.

Footnote

1. Aerial photography sites are areas initially identified during the analysis of aerial photographs covering various dates from 1936-1999.



**Mangrove Disposal Site
(Looking South)**



**Mangrove Disposal Site
(Looking NW)**

22050014



Debris at Mangrove Disposal Site



Inactive Open Burning/ Waste Explosive Detonation Range

Enclosure (C)



Bulk Storage Tank near Green Beach



Molasses leaking from Storage Tank

Enclosure (C)



Stained Concrete at Asphalt Plant

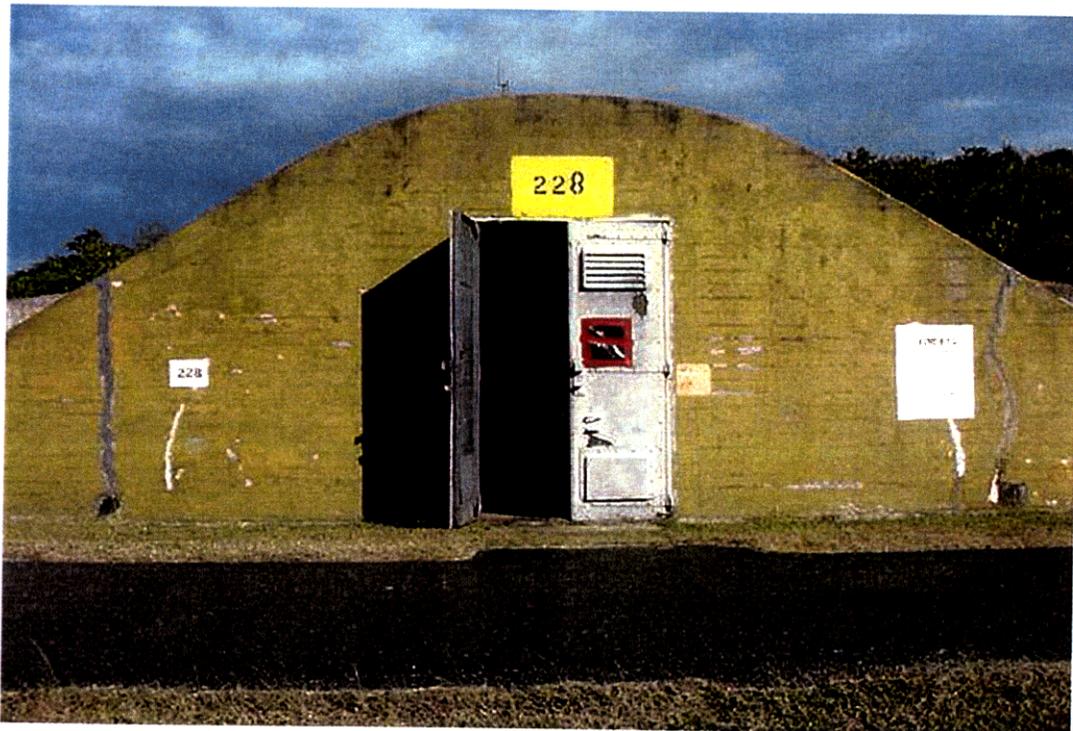


Stained Concrete Pad at Asphalt Plant

Enclosure (C)



Overgrown Road to IRFNA-MAF 4 Site



Active Ordnance Magazine

Enclosure (C)



Entrance to Inactive Magazine



Inactive Potable Well No. 7

Enclosure (C)



Abandoned Power Plant Building



Room Inside Power Plant

Enclosure (C)