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NAS KEY WEST
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PROPOSED PLAN FOR FORMER TRUMAN ANNEX
DICHLORODIPHENYLTRICHLOROETHANE MIXING AREA SITE 3 NAS KEY WEST FL
10/18/1998
NAS KEY WEST



PROPOSED PLAN



Naval Air Station Key West, Florida

Facility/Unit Type: Military Installation/Former Truman Annex DDT Mixing Area (IR 3)
Contaminants: Organics, Metals, and Pesticides
Media: Soil and Groundwater
Remedy: Asphalt Cap with Land-Use Controls

INTRODUCTION

This Proposed Plan is issued by the U.S. Navy, the lead agency for Naval Air Station (NAS) Key West remedial activities, with concurrence by U. S. Environmental Protection Agency (EPA) and Florida Department of Environmental Protection (FDEP). The proposed remedial activities are conducted under the Department of Defense's Installation Restoration Program (IRP) in accordance with Section 120 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the National Contingency Plan (NCP). The Former Truman Annex DDT Mixing Area is the site of interest and is known as IR 3.

The purpose of this Proposed Plan is several-fold. The Proposed Plan identifies the proposed remedy for IR 3 at NAS Key West and explains the rationale for the preference, solicits public review and comment on conclusions of the CERCLA Remedial Investigation (RI), and provides information as to how the public can be involved in the remedy selection process. The Proposed Plan provides a summary of past environmental work at IR 3 at NAS Key West. This document provides key highlights of the Supplemental RCRA Facility Investigation and Remedial Investigation Report, January 1998 (RI Report), but should not be used as a substitute. Additional details regarding the facility and the investigation conducted may be found in the RI Report that is kept as part of the information repository. Please refer to the Public Participation section for its location.

The public is encouraged to comment on the proposed remedy that is based on the conclusions of the RI Report. The U.S. Navy emphasizes that the proposed remedy is the initial recommendation of the Agency. Changes to the proposed remedy, or a change from the proposed remedy to another remedy, may be made if public comments or additional data indicate that such a change would result in a more appropriate solution.

PROPOSED REMEDY

As discussed above, the proposed remedy represents the U.S. Navy's initial recommendation for IR 3. The proposed remedy is an asphalt cap with land-use controls because actions taken in the Interim Remedial Action (IRA) along with implementation of the proposed remedy will reduce the potential risks to human health and the to acceptable levels. The cost of an asphalt cap at IR 3 will be low, particularly when compared with other remedial measures such as soil removal and groundwater remediation.

FACILITY BACKGROUND

The U.S. Navy owns 5,660 acres in Monroe County, Florida as part of NAS Key West. Truman Annex is located on the western end of Key West (Figure 1) that borders the Gulf of Mexico.

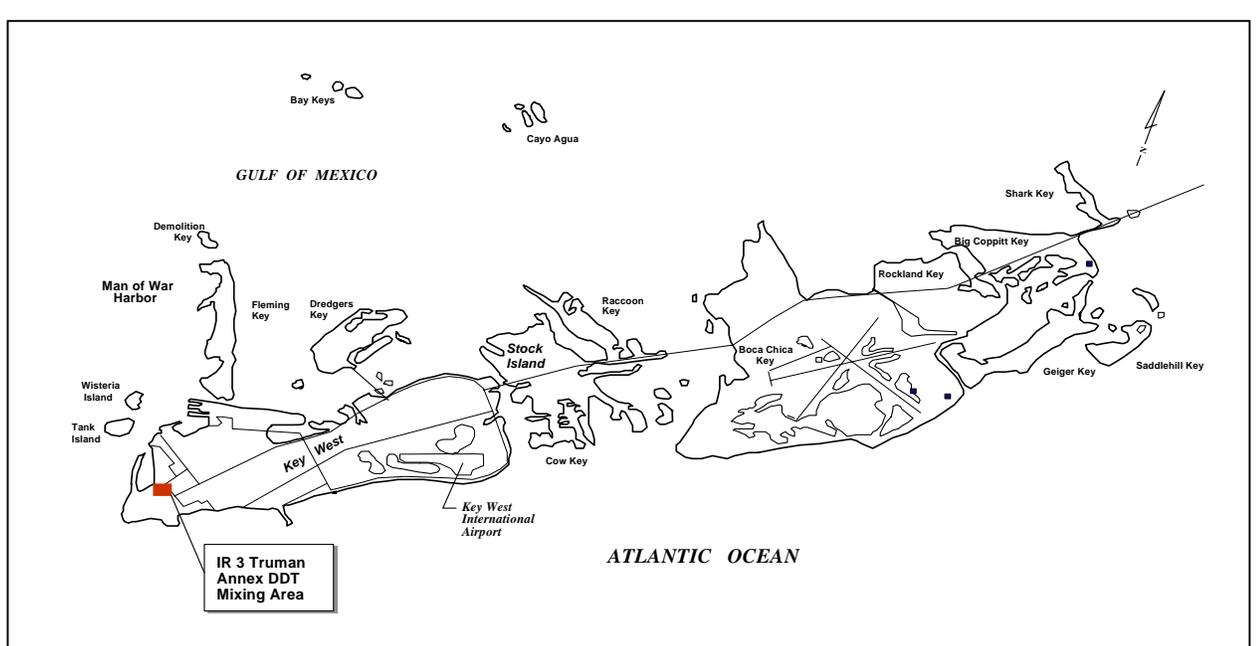


Figure 1. NAS Key West IR 3 Former Truman Annex DDT Mixing Area.

In 1986, an Initial Assessment Study (IAS) was conducted at IR 3, the Truman Annex DDT Mixing Area. Based on the results of the study, an RI was recommended for the site.

The Truman Annex DDT Mixing Area (IR 3) is located at the former site of Building 265 (Figure 2). The site covers an area of about ¼ acre and is located approximately 1,100 feet inland from the coast line. Fort Street, which is the westernmost street of an adjacent residential area, is located opposite the chain-link fence that marks the U. S. Navy’s property boundary to the northeast of the site.

The topography of the site is flat and turf grass covers most of the soils. The site is underlain by highly permeable soil with no surface-water drainage or holding features present.

From the 1940s to the early 1970s, the location was used as a DDT mixing area. Powdered DDT concentrate was mixed with water and temporarily stored in 55-gallon drums both inside and outside former Building 265. The mixed solution was then transferred to trucks for dispersal. Discharges at the site were from accidental spills.

The U. S. Navy conducted an IRA at IR 3 in 1996 to excavate and dispose of

pesticide-contaminated soil. The IRA removed 735 cubic yards of contaminated soil to a depth of 1-2 feet and reduced DDT soil concentration maximum values from 60,000 to 21,000 micrograms/kilogram. The site was backfilled with clean soil and restored with grass sod.

Sampling was performed in 1986, 1990, 1993, 1995, and 1996 during a series of investigations at the site. Inorganics and pesticides were the most prevalent compounds detected at IR 3. Although both types of contaminants were detected in the only two media at the site, soil and groundwater, they were generally more widespread in soil. Arsenic, lead, mercury, and zinc were most frequently detected in excess of the applicable or relevant and appropriate requirements and screening action levels (ARAR/SALs) although other metals (antimony, arsenic, copper, cyanide, iron, silver, and tin) were also detected. Concentrations were generally highest on the eastern edge of the area that was used for mixing the DDT solutions. The pesticides 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT, and endrin were detected at in excess of their ARAR/SALs.

Many of the inorganics detected in soil were also detected in groundwater; however, aluminum, antimony, arsenic, cadmium, iron, and lead were the only inorganics detected in

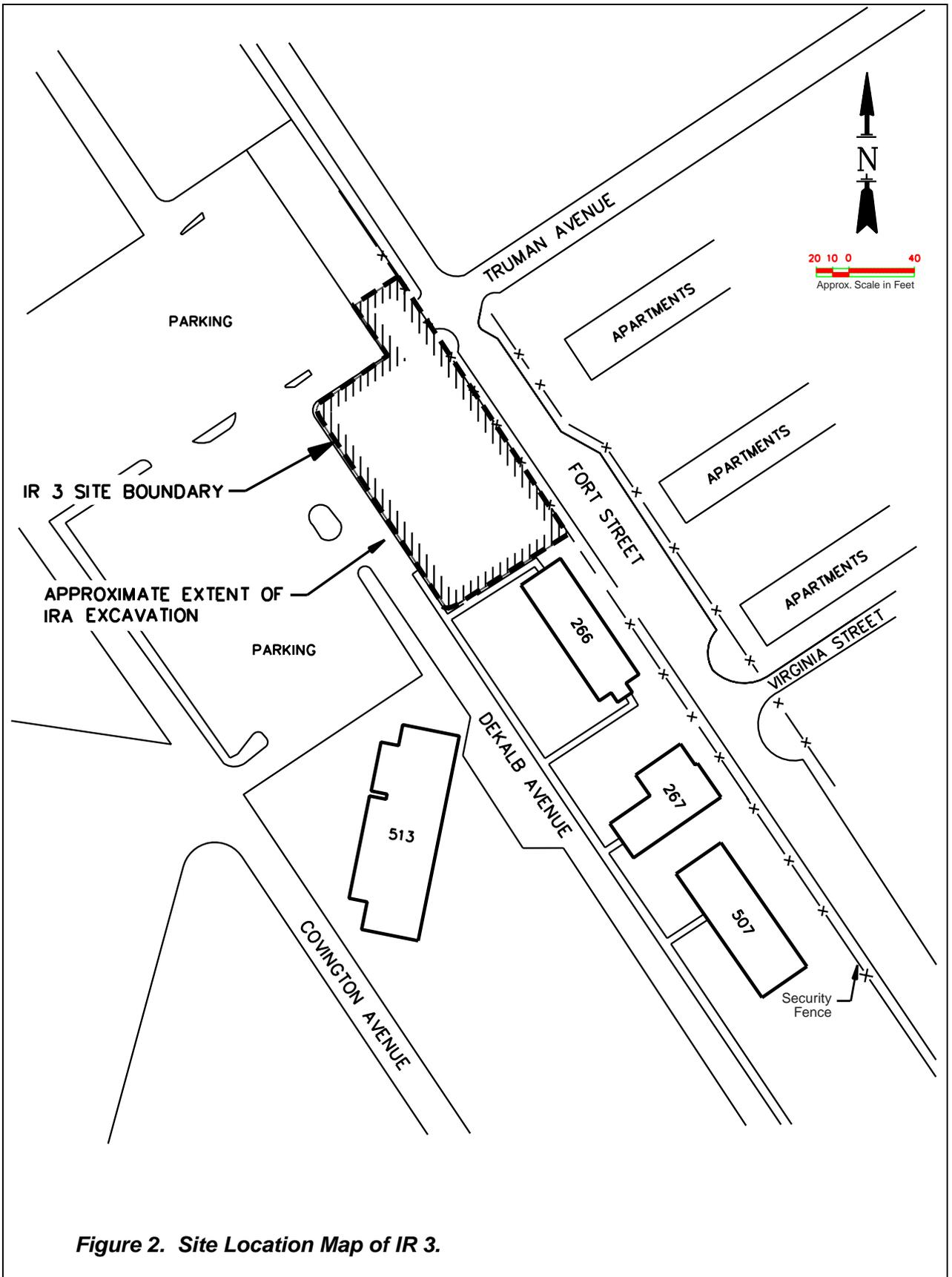


Figure 2. Site Location Map of IR 3.

excess of ARAR/SALs. The pesticides 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT, and endrin were detected in groundwater in excess of their ARAR/SALs in during the 1990 and 1993 sampling events. However, the materials were not detected in 1996. Several volatile organic compounds (VOCs) (1,1-dichloroethane, acetone, chlorobenzene, and methylene chloride) were detected at IR 3; however, none were detected in excess of ARAR/SALs.

SUMMARY OF FACILITY RISKS

A Human Health Baseline Risk Assessment (BRA) and an Ecological Risk Assessment (ERA) were performed as part of the RI Report. The IR sites at NAS Key West were evaluated for risk following CERCLA guidance at the request of FDEP and EPA Region IV.

In the BRA, human health risks associated with the exposure to contaminants detected in soil were estimated for each potential receptor. Although groundwater was sampled and analyzed, it was not considered a pathway of concern since groundwater at this site meets the FDEP criteria for a Class G-III nonpotable aquifer. The full BRA is in the RI Report.

The potential receptors were based on current and future land uses. The current potential receptors identified for IR 3 include adolescent/adult trespasser, occupational worker, and site maintenance worker. Under the future land-use scenario, the most likely potential receptor is believed to be an excavation worker. Also considered under the future land-use scenario are a residential child and adult, although residential development of IR 3 is considered unlikely. Under the master plan for land use on NAS Key West, the future land use for the area where IR 3 is located is as a restricted-access military base, with future zoning to limit access at the site. In addition, a memorandum of agreement has been developed and signed, and land-use controls have been developed.

Although residential development is highly unlikely as explained above, there would be potential for a future resident to be exposed to concentrations of contaminants that may cause limited carcinogenic and noncarcinogenic risks. This potential risk was modeled for possible human receptors. The chemicals of

potential concern (COPCs) were selected within a medium based on comparison of the detected concentrations to risk-based screening levels. The selected COPCs represent those chemicals at IR 3 that are expected to contribute significantly to one or more of the exposure pathways selected for risk estimation. The BRA identified antimony, arsenic, beryllium, iron, lead, mercury, 4,4'-DDD, 4,4'-DDE and 4,4'-DDT as COPCs in soil for all receptors.

The IR 3 BRA identified five risk scenarios exceeding the one in one million (1×10^{-6}) cancer threshold. The risk for the hypothetical future resident scenario exceeds the one in ten thousand cancer(s). The principal constituents contributing to the cancer risks are arsenic, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT. However, the uncertainty analysis indicates that the estimate of the cancer risk associated with these constituents for all the receptors is very conservative.

The BRA also identified a single noncarcinogenic risk scenario for the future resident exceeding the hazard index threshold of 1.0. The principal constituent contributing to the noncarcinogenic risk is 4,4'-DDT in surface soil. However, again the uncertainty analysis indicates that the estimate of the noncarcinogenic risk associated with 4,4'-DDT for the future residential receptor is very conservative.

An ERA was conducted to evaluate the possibility that aquatic or terrestrial ecological receptors may be at risk from site-related contaminants. The ERA was based on laboratory analyses of groundwater and soil samples. IR 3 and the adjacent areas provide only limited terrestrial habitat of marginal quality in an urban setting. No surface water is present at the site, and the nearest surface water is approximately 1,100 feet to the south. The ERA concluded that potential risk to terrestrial receptors at IR 3 is negligible.

As discussed above, sufficient concentrations of inorganics and pesticides remain in the soil at IR 3, after completion of the IRA, to cause potential health effects to the hypothetical future resident. Present contaminant release pathways are limited to dermal exposure and possible infiltration into the water table. Therefore, an asphalt cap is recommended for the final remedial action at IR 3.

SCOPE OF THE REMEDIAL ACTION

The U.S. Navy recognizes that CERCLA allows various options for implementing remedies based on site conditions. For IR 3 at NAS Key West, the RI Report indicates that no ecological risks and minimal human health risks remain at IR 3 after completion of the IRA (soil removal); therefore, there is sufficient justification to propose an asphalt cap and land-use controls as the remedy for the site. The cost of land-use controls and the installation of an asphalt cap at IR 3 will be low, particularly when compared with other remedial measures such as further soil removal and groundwater remediation.

Further, the U. S. Navy has determined there is sufficient need to hold a public meeting. It will occur at 7:00 p.m. on Monday, November 16, 1998, at the Holiday Inn Beachside, N. Roosevelt Blvd., Key West, Florida. Please call Phillip Williams at 305-293-2061 for directions to the public meeting. At the meeting, the proposed remedy will be discussed and questions will be answered. The public meeting will also address the proposed remedies for IR 7 and AOC B. To request information about the public meeting or comment period, to obtain more information concerning this Proposed Plan, or to submit written comments, please contact Phillip Williams at the following address:

PUBLIC PARTICIPATION

To make a final decision and incorporate a remedy into the Decision Document, the U.S. Navy is soliciting public review and comment on this Proposed Plan for the proposed remedy to IR 3 at NAS Key West. CERCLA requires a comment period for public to review and comment of the proposed remedy.

The comment period will begin on Sunday, October 18, 1998, which is the date of publication of the public notice in *The Citizen* newspaper. Friday, December 18, 1998, is the end of the comment period.

The Proposed Plan and the associated administrative file, including the RI Report, may be viewed and copied at the FDEP Office in Tallahassee, Florida between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, except legal holidays. Additional copies of the RI Report and Proposed Plan are available for public review at the information repository in the Local and State History Department at the Monroe County Library, 700 Fleming Street, Key West, Florida (Phone 305-292-3595).

NAS Key West Contact

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All comments must be postmarked by Friday, December 18, 1998.

NEXT STEPS

Following the 60-day public comment period, the U.S. Navy will issue a final decision on the proposed remedy. The Decision Document, which will describe the remedy chosen for IR 3, will include responses to oral and written comments received during the public comment period. Concurrence from EPA and FDEP will be obtained before implementing the final remedy.

**Comments on Proposed Plan
Truman Annex DDT Mixing Area (IR 3)**

Place
Stamp
Here

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