United States Environmental Protection Agency
One Congress Street, Suite 1100 (HBT)
Boston, MA 02114-2023

March 27, 2003

Mr. Ed Boyle
Engineering Field Activity - North East (EFANE)
10 Industrial Highway, Code 182/EB - Mail Stop 82
Lester, PA 19113-2090

Re: *"First Five-Year Review Report for Former Naval Construction Battalion Center (NCBC) Davisville, North Kingston, Rhode Island"*, dated February 2003

Dear Mr. Boyle:

Pursuant to § 7.6 of the Davisville Naval Construction Battalion Center Federal Facility Agreement dated March 23, 1992, as amended (FFA), the Environmental Protection Agency has reviewed the subject document. The Five-Year Review Report was submitted by the Department of the Navy (Navy) as the lead agency for the site. The Five-Year Review Report evaluated the protectiveness of each OU as required by the *Comprehensive Five-Year Review Guidance,* EPA540-R-01-007 (OSWER Directive No. 9355.7-03B-P).

The report addresses nine OUs that make up the NCBC Site pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The OUs with remedies in place are: OU1- Allen Harbor Landfill and OU8-Calf Pasture Point. The Navy also included an evaluation of two additional OUs which are still being investigated: OU7- CED Solvent Disposal Area and OU9-Creosote Dip Tank and Former Fire Fighting Training Area and a status report of an area under preliminary investigation. Also included are a history of the other five OUs where No Further Action remedies were selected and therefore a five-year review is not required under CERCLA.

EPA concurs with the Navy's findings as presented in the Report and outlined below. According to the Five-Year Review Report, the protectiveness determinations of OU 1, OU 8, OU 7 & OU 9 were all deferred because additional information is needed in all cases. For OU1, the Long Term Monitoring Plan states that eight rounds of sampling will be completed prior to determining the protectiveness of the remedy. As of this date, five rounds of sampling have been attempted, but not all piezometer sample aliquots have been collected. Additional piezometers will be installed at each of the ten current locations to obtain all planned sample aliquots for analysis over the next three sampling rounds. The evaluation of this data is expected to occur by May 2004.

For OU8, the Long Term Monitoring Plan also states that eight rounds of sampling will be completed prior to determining the protectiveness of the remedy. As of this date two rounds of

sampling have been accomplished. Evaluation of this data indicated a data gap in understanding contaminant migration to the west from the source area. A second data gap exists regarding the plume pathway from the source to either the southeast or east. Additional wells and piezometers are planned to be installed. Since monitoring occurs on an every nine month basis, the protectiveness of the remedy can not be determined until September 2006.

While OU 7 and OU 9 are still in the investigative stage, EPA is aware that both sites have deep chlorinated solvent plumes. No surface sources have been found. Therefore, while the ground water is known to be contaminated above MCLs, no unacceptable risk in soils has been found for the current land use. RODs are expected in 2007 and 2005, respectively, for these OUs.

Even though a protectiveness determination has been deferred for the Davisville, NCBC Site, the Site is expected to be protective because of the effective implementation of institutional controls through the Land Use Control Implementation Plan (LUCIP), that has prevented human exposure to, or ingestion of, contaminated groundwater and restricts land use. Therefore, the monitoring, reporting, and enforcement of all land use/institutional controls remains paramount to the continued protectiveness of the remedies. Continued optimization of the groundwater monitoring system and ground water discharge areas at the shorelines will provide data to ensure that contaminated ground water from the OUs pose no unacceptable risk to human health or the environment. EPA expects the Navy to take all necessary steps to ensure that its enforcement and monitoring of ICs and ground water monitoring efforts are effective in order to ensure that the remedies remain protective.

Consistent with Section 121(c) of CERCLA and EPA's Comprehensive Five-Year Review guidance, the next five-year review for this Site must be finalized on or before March 30, 2008.

Sincerely,

Richard Cavagnero, Acting Director
Office of Site Remediation and Restoration

cc: Richard Gottlieb, RIDEM
Michael Hurd, EPA HQ
Kymberlee Keckler, EPA
David Peterson, EPA
Christine Williams, EPA
Marilyn Cohen, ToNK
Howard Cohen, RIEDC

# Five-Year Review Report

## First Five-Year Review Report
## For
## Former Naval Construction Battalion Center (NCBC) Davisville
## North Kingstown, Rhode Island

Contract No. N62472-92-D-1296
Contract Task Order No. 0043

*Prepared for*

Department of the Navy
Engineering Field Activity Northeast
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop No. 82
Lester, Pennsylvania 19113-2090

Approved by:

Captain Robert B. Raines, CEC, USN
Commanding Officer EFANE

Date

March 2003
Version: FINAL
EA Project No. 29600.99.3550

# FIRST
# FIVE-YEAR REVIEW REPORT
# FOR
# FORMER NAVAL CONSTRUCTION BATTALION CENTER (NCBC) DAVISVILLE
# NORTH KINGSTOWN, RHODE ISLAND

**Contract No. N62472-92-D-1296**
**Contract Task Order No. 0099**

*Prepared for*

Department of the Navy
Engineering Field Activity Northeast
10 Industrial Highway, Mail Stop No. 82
Lester, Pennsylvania 19113-2090

*Prepared by*

EA Engineering, Science, and Technology
Southborough Technology Park
333 Turnpike Road (Route 9)
Southborough, Massachusetts 01772

March 2003
FINAL
EA Project No. 29600.99.3550

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# LIST OF ACRONYMS

| | |
|---|---|
| ARAR | Applicable, relevant and appropriate requirement |
| AWQC | Aquatic water quality criteria |
| BCT | BRAC cleanup team |
| bgs | Below ground surface |
| BRAC | Base realignment and closure |
| CED | Construction Engineering Division |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act, 1980 |
| COC | Contaminants of concern |
| CSF | Cancer slope factor |
| CSM | Conceptual site model |
| CVOC | Chlorinated volatile organic compounds |
| DANC | Decontaminating agent non-corrosive |
| DD | Decision document |
| EBS | Environmental baseline survey |
| EFANE | Engineering Field Activity Northeast |
| ELUR | Environmental land-use restrictions |
| EPA | U.S. Environmental Protection Agency |
| EPC | Exposure point concentration |
| ERA | Ecological risk assessment |
| ESD | Explanation of significant difference |
| FFA | Federal facilities agreement |
| FFTA | Fire fighting training area |
| FOST | Finding of suitability to transfer |
| FUDS | Formerly utilized defense sites |
| FWENC | Foster Wheeler Environmental Corporation |
| HEAST | Health effects assessment summary tables |
| HHRA | Human health risk assessment |
| HI | Hazard index |
| HRS | Hazardous ranking system |
| IAS | Initial assessment study |
| IGWSE | Interim ground-water sampling event |
| IGWSP | Interim ground-water sampling program |
| IR | Installation Restoration |
| LOEC | Lowest observed effect concentration |

| | |
|---|---|
| LTM | Long-term monitoring |
| LTMP | Long-term monitoring program |
| LUCIP | Land-use control implementation plan |
| MCL | Maximum contaminant level |
| ME | Monitoring event |
| MSL | Mean sea level |
| NAS | Naval Air Station |
| NCBC | Naval Construction Battalion Center |
| NCEA | National Center for Environmental Assessment |
| NCP | National [Oil and Hazardous Substances Pollution] Contingency Plan |
| NFA | No further action |
| NPL | National Priorities List |
| PAH | Polycyclic aromatic hydrocarbons |
| PAL | Project action level |
| PCB | Polychlorinated biphenyls |
| ppm | Parts per million |
| PRG | Preliminary remediation goal |
| QAPP | Quality assurance project plan |
| RAB | Restoration Advisory Board |
| RAO | Remedial action objectives |
| RBSC | Risk-based screening calculation |
| RfD | Reference dose |
| RI | Remedial investigation |
| RI/FS | Remedial Investigation/Feasibility Study |
| RIDEM | Rhode Island Department of Environmental Management |
| RIEDC | Rhode Island Economic Development Corporation |
| RIPA | Rhode Island Port Authority |
| RME | Reasonable maximum exposure |
| ROD | Record of decision |
| RPM | Remedial project manager |
| SARA | Superfund Amendments and Reauthorization Act, 1986 |
| SVOC | Semi-volatile organic compounds |
| TCE | Trichloroethene |
| TPH | Total petroleum hydrocarbons |
| USACE | U.S. Army Corps of Engineers |
| UST | Underground storage tank |
| VOC | Volatile organic compounds |

# EXECUTIVE SUMMARY

The former Naval Construction Battalion Center (NCBC) Davisville facility, located in North Kingstown, Rhode Island, includes 13 sites and 3 study areas. Two of the sites are active sites for which the selected remedy includes hazardous substances, pollutants, or contaminants remaining above levels that allow for unlimited use and unrestricted exposure (Site 07 – Calf Pasture Point, and Site 09 – Allen Harbor Landfill). Another 3 of the sites and 2 of the study areas are active sites that are in the investigation phase (Study Areas 01 and 04 and Sites 02 and 03 – the Construction Engineering Division [CED] area, and Site 16 – Former Creosote Dip Tank Area and Suspected Former Fire Fighter Training Area). The remaining 9 sites and 1 study area have been determined through investigation and/or removal action to require No Further Action (NFA), not requiring five-year review. The trigger for this first five-year review of the former NCBC Davisville facility is the initiation of the first remedy that left waste in place at concentrations above unrestricted use levels, (i.e., the remedy for Site 09 [Allen Harbor Landfill]), and specifically the remedy initiation letter from the Navy dated 30 March 1998..

For Site 09, as stated in the ROD signed 29 September 1997, the remedy includes the construction of a multimedia cap (including a passive gas venting system), stone shoreline revetment, an offshore breakwater, and the construction of inter-tidal wetlands, along with long-term monitoring (LTM) of ground water, sediment, shellfish, and landfill gas, plus institutional controls (deed restrictions on land and ground-water use). A protectiveness determination of the remedy at Site 09 cannot be made at this time until further information is obtained. Site 09 LTM plan states that 8 rounds of sampling will be completed prior to determining the protectiveness of the cap. As of this date 3 rounds of sampling have been completed. It is estimated that the 8 rounds of sampling will be completed by May 2004, at which time a protectiveness statement will be made. The remedy is expected to be protective of human health and the environment as long as the cap and institutional controls remain in place. Remedy of the site has been addressed through stabilization and capping of the waste and contaminated soil, gas vents, covering of most of the shoreline sediment with the constructed wetland, the installation of fencing and warning signs, and the implementation of institutional controls through the Land-Use Control Implementation Plan (LUCIP) to prevent exposure to, or ingestion of, contaminated ground water and to prevent ground surface activities (e.g., building, motorized vehicles except for LTM activities, digging) that could negatively impact the integrity of the landfill cap. The outstanding issue is the inconclusiveness of the available shoreline piezometer sample data to confirm the quality of ground water discharging from the site to the nearshore. Additional piezometers will be installed at each of the 10 locations to attempt to obtain all planned sample aliquots for analysis starting with ME 05 or ME 06. The results of the future complete analyses are hoped to aid in the determination of the representativeness of this sampled area. In addition, the Navy is considering conducting additional studies and/or other evaluations in the shoreline environment in order to better identify areas where plume discharge has the potential to occur, and to optimize long-term monitoring locations accordingly.

For Site 07, as stated in the ROD signed 30 September 1999, the remedy includes institutional controls (deed restrictions on land and ground-water use) as implemented by the LUCIP and LTM of ground water and sediment. A protectiveness determination of the remedy at Site 07

can not be made at this time until further information is obtained. Site 07 LTM plan states that 8 rounds of sampling will be completed prior to determining the protectiveness of the remedy. As of this date, 3 rounds of sampling have been completed. It is estimated that the 8 rounds of sampling will be completed by November 2006, at which time a protectiveness statement will be made. Based on the reviewed data, the Site 07 remedy is expected to be protective of human health and the environment as long as the institutional controls remain in place as implemented through the LUCIP, and in the interim, the exposure pathways that could result in unacceptable risk are being monitored, including consideration of conducting additional studies and/or other evaluations in the shoreline environment in order to better identify areas where plume discharge has the potential to occur, and to optimize long-term monitoring locations accordingly.

For Study Areas 01 and 04, and Sites 02 and 03, these sites are under the remedial investigation (RI) phase and so a ROD has not yet been signed for this area; i.e. the remedy for these sites have not been selected. A protectiveness determination of the remedy at these sites can not be made at this time until further information is obtained. The remedy is expected to be implemented in 2007, at which time a protectiveness determination will be made.

For Site 16, this site is under the RI phase and so a ROD has not yet been signed for this area; i.e. the remedy for this site has not been selected. A protectiveness determination of the remedy at this site can not be made at this time until further information is obtained. The remedy is expected to be implemented in 2006, at which time a protectiveness determination will be made.

For the West Davisville Aircraft Counterweight Discovery and Identification area, this location is under a preliminary investigative stage and so a ROD has not yet been signed for this location. A protectiveness determination can not be made at this time until further information is obtained. Further information will be obtained from the preliminary investigative fieldwork planned for Spring 2003. A protectiveness determination will be made once the investigation is completed and a remedy is implemented (if needed).

# EPA's Five-Year Review Summary Form

## SITE IDENTIFICATION

**Site name:** Former Naval Construction Battalion Center Davisville Facility

**EPA:** RI6170022036

**Region:** I | **State:** RI | **City/County:** Washington County

## SITE STATUS

**NPL status:** Final X Deleted Other (specify) _____

**Remediation status** (choose all that apply): Under construction Operating X Complete

**Multiple OUs?*** YES X NO | **Construction completion date:** / /

**Has site been put into reuse?** YES X* NO * = portions of the former facility

## REVIEW STATUS

**Lead agency:** EPA State Tribe Other Federal Agency U.S. Department of the Navy

**Author name:** Prepared by EA Engineering, Science, and Technology under contract to U.S. Department of the Navy, Engineering Field Activity Northeast (EFANE)

**Author title:** **Author affiliation:**

**EPA's Review period:** 12 / 20 / 2002 to 03 / 30 / 2003

**Date(s) of site inspection:** 3 /14 / 2003 # Various for Parcels 03, 07, 09, and 10

**Type of review:** Post-SARA X Pre-SARA _____ NPL-Removal only _____
Non-NPL Remedial Action Site _____ NPL State/Tribe-lead _____
Regional Discretion _____

**Review number:** 1 (first) X 2 (second) 3 (third) Other (specify) _____

**Triggering action:**

Actual RA Onsite Construction at OU # _____ Actual RA Start at OU # 1

Construction Completion _____ Previous Five-Year Review Report ___ __

Other Submittal of the remedy initiation letter from the Navy dated 30 March 1998 for the Allen Harbor Landfill

**Triggering action date:** 03 / 30 / 1998

**Due date *(five years after triggering action date)*:** 03 / 30 / 2003

NOTES:
* "OU" refers to operable unit.

| Navy designation | EPA designation |
|---|---|
| Site 09 | OU1 |
| Site 12 | OU2 |
| Sites 05 and 08 (soils only) | OU3 |
| Sites 06, 11, and 13 | OU4 |
| Sites 10 and 08 (ground water only) | OU5 |
| Site 14 | OU6 |
| Study Areas 01 and 04, and Sites 02 and 03 | OU7 |
| Site 07 | OU8 |
| Site 16 | OU9 |

**Five-Year Review Summary Form, cont'd.**

**Issues:**
*Summarize issues.*

For Site 07:
Additional data needed to refine the conceptual site model (CSM), the understanding of the hydrogeology from source area(s) southwest to the harbor 'cove' area and chlorinated volatile organic compounds (CVOC) plume migration in central portion of the site.
Environmental land-use restriction (ELUR) has not yet been recorded.

For Site 09:
Additional monitoring data required to assess ground-water discharge to the shoreline.
Identified minor maintenance needs to the landfill cap that do not impact the integrity of the remedy.
Sustainability of the plants in the southern portion of the constructed wetland.
Deed and ELUR have not yet been recorded.
Completeness of the monitoring well network.

For Study Areas 01 and 04, and Sites 02 and 03:
These sites are still under investigation. However, completion of the investigation and Record of Decision (ROD) are being delayed at least 1–2 years until a remedy is implemented by U.S. Army Corps of Engineers – New England District (USACE-NED) for the source area of the dissolved CVOC plume in deep ground water from the adjacent, upgradient former PR-58 Nike Site property. Based on discussions during the 12 September 2002 Base Closure Team (BCT) Meeting, if the former PR-58 Nike Site compliance wells were installed by 2004 and Rhode Island Department of Environmental Management (RIDEM) concurrence was obtained for the PR-58 Nike Site in 2005, there could be a ROD in 2007 for Study Areas 01 and 04 and Sites 02 and 03.

For Site 16:
This site is still under investigation.

For the West Davisville Aircraft Counterweight Discovery and Identification area:
This location is still under investigation.

**Recommendations and Follow-up Actions:**
*Summarize recommendations and follow-up actions.*

For Site 07:
1) For southwest extent from source: Add five monitoring wells (MW07-35D, a shallow and deep overburden well pair at SB07-05, and a shallow and deep overburden well pair between MW07-04 and MW07-35). This would be dependent on availability of Navy funds.

2) For plume migration in central portion of the site: Add three monitoring wells (MW07-27S, and a shallow and deep overburden well pair approximately 125–150 ft east of MW07-26S). This would be dependent on availability of Navy funds.

3) To expand quantitative understanding of the harbor shoreline: Add to ME 03 (February 2003) approximately 9 piezometer locations between P07-18 and P07-19 to cover the remaining portion of the harbor shoreline that had not previously been sampled (Figure 2).

4) Work with the Town to expedite recording of the ELUR.

For Site 09:
1) Continue to attempt to obtain all planned piezometer sample aliquots for analysis; particularly the salinity aliquot to aid assessment of representativeness of ground-water discharge.

2) Evaluation of the need for abandonment and replacement of MW09-14I and MW09-09D after evaluation of the ME 08 results.

**Five-Year Review Summary Form, cont'd.**

**Recommendations and Follow-up Actions: (cont'd)**

3) Repair of rutting in the Long-Term Monitoring Program (LTMP) dirt access roads.

4) Removal of vegetation from drainage pipe outlets and the southern drainage swale.

5) Re-seeding of bare spots on the cap surface.

6) Consider installation of additional geotextile over the area east of piezometer P09-03 where there appears to be some channeling of tidal waters through the breakwater structure.

7) Repair of the small sections of exposed geotextile fabric along the top and toe of the revetment and the breakwater structure.

8) Removal of two large shrubs in the vicinity of gas vent GV09-05 as a precaution so their roots do not impact the multimedia cap.

9) Assess whether or not replanting of the southern portion of the constructed wetland is appropriate.

10) Work with the Town and National Park Service to expedite property transfer and recording of the deed and ELUR.

11) Assess whether or not to replace damaged monitoring wells and/or consider adding wells to the monitoring network.

For Study Areas 01 and 04, and Site 02 and 03:
Continue the Interim Ground-Water Sampling Program (IGWSP) and await the completion of the USACE work at the adjacent, upgradient former PR-58 Nike Site so the Remedial Investigation/Feasibility Study (RI/FS) and ROD can be completed for this portion of the Navy's Parcel 7.

For Site 16:
Complete the remedial investigation and feasibility study.

For the West Davisville Aircraft Counterweight Discovery and Identification area:
Complete the preliminary investigation.

**Protectiveness Statement(s):**
*Include individual operable unit protectiveness statements. For sites that have reached construction completion and have more than one OU, include an additional and comprehensive protectiveness statement covering all of the remedies at the site.*

For Site 07:
A protectiveness determination of the remedy at Site 07 cannot be made at this time until further information is obtained. Site 07 LTM plan states that 8 rounds of sampling will be completed prior to determining the protectiveness of the remedy. As of this date, 3 rounds of sampling have been completed. It is estimated that the 8 rounds of sampling will be completed by November 2006, at which time a protectiveness statement will be made. Based on the reviewed data, the Site 07 remedy is expected to be protective of human health and the environment as long as the institutional controls remain in place as implemented through the Land-Use Control Implementation Plan (LUCIP), and in the interim, the exposure pathways that could result in unacceptable risk are being monitored, including consideration of conducting additional studies and/or other evaluations in the shoreline environment in order to better identify areas where plume discharge has the potential to occur, and to optimize long-term monitoring locations accordingly.

For Site 09:
A protectiveness determination of the remedy at Site 09 cannot be made at this time until further information is obtained. Site 09 LTM plan states that 8 rounds of sampling will be completed prior to determining the protectiveness of the cap. As of this date 3 rounds of sampling have been completed. It

**Five-Year Review Summary Form, cont'd.**

For Site 09: (continued)
is estimated that the 8 rounds of sampling will be completed by May 2004, at which time a protectiveness statement will be made. The remedy is expected to be protective of human health and the environment as long as the cap and institutional controls remain in place. Remedy of the site has been addressed through stabilization and capping of the waste and contaminated soil, gas vents, covering of most of the shoreline sediment with the constructed wetland, the installation of fencing and warning signs, and the implementation of institutional controls through the LUCIP to prevent exposure to, or ingestion of, contaminated ground water and to prevent ground surface activities (e.g., building, motorized vehicles except for LTM activities, digging) that could negatively impact the integrity of the landfill cap. The outstanding issue is the inconclusiveness of the available shoreline piezometer sample data to confirm the quality of ground water discharging from the site to the nearshore. Additional piezometers will be installed at each of the 10 locations to attempt to obtain all planned sample aliquots for analysis starting with ME 05 or ME 06. The results of the future complete analyses are hoped to aid in the determination of the representativeness of this sampled area. In addition, the Navy is considering conducting additional studies and/or other evaluations in the shoreline environment in order to better identify areas where plume discharge has the potential to occur, and to optimize long-term monitoring locations accordingly.

For Study Areas 01 and 04, and Sites 02 and 03:
These sites are under the remedial investigation (RI) phase and so a ROD has not yet been signed for this area; i.e. the remedy for these sites has not been selected. A protectiveness determination of the remedy at this OU can not be made at this time until further information is obtained. The remedy is expected to be implemented in 2007, at which time a protectiveness determination will be made.

For Site 16:
This site is under the RI phase and so a ROD has not yet been signed for this area; i.e. the remedy for this site has not been selected. A protectiveness determination of the remedy at this OU can not be made at this time until further information is obtained. The ROD is expected in FY 2005. The remedy is expected to be implemented in 2006, at which time a protectiveness determination will be made.

For the West Davisville Aircraft Counterweight Discovery and Identification area:
This location is under a preliminary investigative stage and so a ROD has not yet been signed for this location. A protectiveness determination cannot be made at this time until further information is obtained. Further information will be obtained from the preliminary investigative fieldwork planned for Spring 2003. A protectiveness determination will be made once the investigation is completed and a remedy is implemented (if needed).

# 1. INTRODUCTION

Under Contract No. N62472-92-D-1296, Contract Task Order No. 0099, the Department of the Navy, Engineering Field Activity Northeast (EFANE) contracted with EA Engineering, Science, and Technology (EA) to prepare this Five-Year Review Report for the Former Naval Construction Battalion Center (NCBC) Davisville, North Kingstown, Rhode Island.

## 1.1 OVERVIEW OF THE FIVE-YEAR REVIEW PROCESS

The purpose of the five-year review process is to determine whether the remedies at sites are or are expected to be protective of human health and the environment through review of the available reports for the former NCBC Davisville facility. The findings and conclusions of the review are documented in this report for the former NCBC Davisville facility.

The following presents the requirements for five-year reviews:

a. The statutory requirement for five-year review was added to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as part of the Superfund Amendments and Reauthorization Act of 1986 (SARA). A five-year review is required when **both** of the following conditions are met, whether the site is on the National Priorities List (NPL) or not:

   1) Upon completion of the remedial actions at a site, hazardous substances, pollutants, or contaminants will remain above levels that allow for unlimited use and unrestricted exposure. For example, if a site is restricted to industrial use because hazardous substances, pollutants, or contaminants remain above levels that allow for unlimited use and unrestricted exposure, five-year reviews must be conducted.

   2) The Record of Decision (ROD) or Decision Document (DD) for the site was signed on or after October 17, 1986 (the effective date of SARA).

b. CERCLA §121(c), as amended, states:

   *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

c. The National Contingency Plan (NCP), 42 U.S.C. § 9621(c), implementing regulations, 40 C.F.R. Part 300.430(f)(4)(ii), provide:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after initiation of the selected remedial action.*

This Five-Year Review Report has been prepared in accordance with the U.S. Environmental Protection Agency (EPA) Comprehensive Five-Year Review Guidance, June 2001, EPA 540-R-01-007, OSWER No. 9355.7-03B-P, and the U.S. Department of the Navy Policy for Conducting Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Statutory Five-Year Reviews (U.S. Navy 2001). The EPA would include all 16 of the sites and study areas at the former NCBC Davisville facility in the five-year review. The locations of these sites and study areas are shown in Figure 1. The Navy has prepared the following two chapters:

1) Chapter 2—Includes the active sites for which the selected remedy includes hazardous substances, pollutants, or contaminants remaining above levels that allow for unlimited use and unrestricted exposure (Site 07 – Calf Pasture Point, and Site 09 – Allen Harbor Landfill) located in Parcels 9 and 10 and shown in Figures 1–5.

2) Chapter 3—Includes the active sites that are in the investigation phase (Study Areas 01 and 04 and Sites 02 and 03 – the Construction Engineering Division (CED) area, and Site 16 – Former Creosote Dip Tank Area and Suspected Former Fire Fighter Training Area) located in Parcel 7 and shown in Figure 1 and Figures 6–10.

The description and status of the nine sites and one study area for which No Further Action (NFA) has been determined through investigation or removal action (Sites 05, 06, 08, 10, 11, 12, 13 and 14, and Study Area 15) are provided as Appendix A and their locations are shown in Figure 1.

In keeping with the requirements of CERCLA §121(c) and the NCP, initiation of a selected remedial action for a site at an installation that will result in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure after the remedial action is complete is the "trigger" that starts the five-year review clock. The first site on an installation that triggers the five-year review clock triggers the five-year review clock for the entire installation, or that portion of the installation addressed under the ROD or DD. The trigger for this first five-year review of the former NCBC Davisville facility is the initiation of the first remedy that left waste in place at concentrations above unrestricted use levels, (i.e., the remedy for Site 09[Allen Harbor Landfill]), and specifically the remedy initiation letter from the Navy dated 30 March 1998.. This is the first five-year review of the former NCBC Davisville facility and covers the period of 30 March 1998 to 31 December 2002.

The former NCBC Davisville facility was placed on the CERCLA NPL on 21 November 1989 supported by a Hazard Ranking System (HRS) scoring package that "used an aggregate of the two most seriously impacted sites ... Site 09 – Allen Harbor Landfill and Site 07 – Calf Pasture Point" (TRC 1994). A Federal Facilities Agreement (FFA) was signed by the Navy, the State of Rhode Island, and the EPA in March 1992. The FFA outlines the response action requirements under CERCLA and the Navy's Installation Restoration (IR) Program at NCBC Davisville and was developed in part to ensure that disposal sites are thoroughly investigated and remediated as necessary.

### 1.1.1 Community Involvement

During the January, March, and June 2002 Restoration Advisory Board (RAB) meetings, the community was informed of the five-year review process for the former NCBC Davisville facility and copies of a related EPA handout were provided by EPA entitled "Focus on 5-Year Reviews and Involving the Community, Checking Up on Superfund Sites" (U.S. EPA 2001). Persons with related comments and/or information were asked to contact the EPA Remedial Project Manager (RPM) and/or the Navy RPM. Notes of each RAB meeting are prepared and sent out to approximately 150 addressees on the NCBC Davisville community mailing list. A copy of the EPA handout was included with the notes of the January 2002 RAB meeting.

Upon completion of the five-year review and Five-Year Review Report, a brief summary of the report would be made during the March or June 2003 quarterly RAB meeting. The summary would include a short description of remedial actions, deficiencies, recommendations, and follow-up actions that are directly related to protectiveness of the remedies, and the determination(s) of whether the remedies are or are expected to be protective of human health and the environment. The summary would also provide the location of where a copy of the complete report can be reviewed, and provide the date of the next five-year review or notify the community that five-year reviews will no longer be necessary. Five-year reviews are not Administrative Record material and are not to be included therein. However, the Navy will ensure that the signed Five-Year Review Report is placed in the site information repository.

### 1.1.2 Facility Location and Description

The former NCBC Davisville facility is located in the Town of North Kingstown, Rhode Island, approximately 18 miles south of the state capital, Providence. NCBC Davisville (Figure 1) is composed of three areas: the Main Center (Zones 1–4), the West Davisville storage area, and Camp Fogarty – a training facility located approximately 4 miles west of the Main Center. Camp Fogarty was transferred to the U.S. Department of the Army in December 1993 and is assigned to the Rhode Island National Guard. Adjoining the southern boundary of the Main Center is the decommissioned Naval Air Station (NAS) Quonset Point, which was transferred by the General Services Administration to the Rhode Island Port Authority (RIPA) (currently named the Rhode Island Economic Development Corporation [RIEDC]) and others between 1975 and 1980.

NCBC Davisville's mission was to provide mobilization support to the active Naval Construction Force; to act as a mobilization base for the rapid assembly outfitting and readying of Reserve Construction Battalions; to store, preserve, and ship advanced base and mobilization stocks; and to procure, receive, pack, and ship collateral equipment for Atlantic, European, and Caribbean military construction projects. NCBC Davisville was comprised primarily of warehouse space and freight yards, most of which are currently demolished, redeveloped, or empty.

The history of NCBC Davisville is related to the history of Quonset Point. Quonset Point was the location of the first annual encampment of the Brigade Rhode Island Militia in 1893. During World War I, it was a campground for the mobilization and training of troops and later was the home of the Rhode Island National Guard. In the 1920s and 1930s, it was a summer resort. In 1939, Quonset Point was acquired by the Navy to establish a Naval Air Station, with construction beginning in 1940. By 1942, the operations at NAS Quonset Point had expanded into what is now called NCBC Davisville. Land at Davisville adjacent to NAS Quonset Point was designated the Advanced Base Depot. Also in 1942, the Naval Construction Training Center, known as Camp Endicott, was established to train the newly-established construction battalions.

While NAS Quonset Point remained a site of Naval activity, Davisville was inactive between World War II and the Korean Conflict. In 1951, it became the Headquarters Construction Battalion Center. The Construction Battalion Center loaded ships and trained men for both the Korean and Vietnam Conflicts. In 1974, the NAS and a Naval Air Rework Facility at Quonset Point were decommissioned, and operations at the Base were greatly reduced pursuant to the Shore Establishment Realignment Act of 1973. In 1989, NCBC Davisville was placed on the EPA NPL. In 1991, the closure of NCBC Davisville was announced, and operations were phased down to minimum staffing levels for public works, maintenance, security, and personnel. NCBC Davisville was decommissioned on 25 March 1994 and closed on 1 April 1994 under the Base Realignment and Closure (BRAC). A detailed description of the Base history can be found in the Final Basewide Environmental Baseline Survey (EBS) (EA 1995). NCBC Davisville was transferred to Northern Division, Naval Facilities Engineering Command, currently designated as EFANE, which has caretaker status pending disposal. EFANE is currently working closely with RIEDC towards lease or transfer of suitable parcels.

Adjacent and west of a portion of the former NCBC Davisville facility is a former Nike missile facility (Nike Battery Site PR-58) (Figure 1) that included three underground missile silos, a refueling area, a missile assembly and test building with an underground storage tank (UST), a generator building with a 4,000-gal UST, and personnel quarters (Metcalf & Eddy 1994). The facility (a Nike "Ajax"-only site) was constructed during the initial round of Nike Site construction in the mid-1950s and was equipped with short-range, conventionally-armed Nike Ajax missiles. The PR-58 facility was deactivated in 1962. This property then had two other reported historical activities. The Navy used the area west of the missile silos as a Disaster Recovery Training Area between 1964 and 1974 (SEC 1988). In 1978, the GSA transferred ownership to RIPA (now RIEDC). RIPA leased 2.2 acres of land to Peabody Clean Industries between 1980 and 1982 for use as a hazardous waste tank farm. Peabody Clean Industries

ceased operations in 1982 and conducted closure activities through 1983 (ERA 1984). In 1983, RIDEM directed Peabody Clean Industries in a cleanup of contaminated soil that had resulted from the Peabody Clean Industries activities at the site. RIPA (now RIEDC) removed the 4,000-gal UST at Building 345 and demolished many structures as part of cleanup/closure activities. Details of this property, located adjacent and upgradient of a portion of NCBC, are provided in the report "Characterization of CVOC Contamination at the Former PR-58 Nike Site and Adjacent Navy NCBC Davisville Site 03" (EA 2001g).

### 1.1.3 Facility Investigation History

An Initial Assessment Study (IAS) prepared for the Navy in September 1984 (Hart 1984) described the past waste generation and disposal practices at NCBC Davisville. The Initial Assessment Study and subsequent investigations identified 16 disposal areas at NCBC Davisville that have been addressed through the Department of Defense IR Program. The former NCBC Davisville facility was placed on the CERCLA NPL in November 1989. An FFA was signed by the Navy, the State of Rhode Island, and the EPA in March 1992. The FFA outlines the response action requirements under CERCLA and the Navy's IR Program at NCBC Davisville and was developed in part to ensure that disposal sites are thoroughly investigated and remediated as necessary.

During the Phase II EBS Program, the Navy investigated 97 locations at NCBC Davisville to evaluate whether or not hazardous substances or petroleum products had been disposed or released to the environment. The results were reported in the Final Phase II EBS Report (EA 1998d). Other facility-wide studies include the following:

- Confirmation Study - Verification Step Report (TRC 1987)
- Phase I RI Report (TRC 1991)
- Phase II RI Report (TRC 1994)
- Facility-Wide Freshwater/Terrestrial Ecological Risk Assessment (EA 1996b)
- Basewide Ground-Water Inorganics Study (Stone & Webster 1997).

## 1.2 ROLES AND RESPONSIBILITIES

EA has been contracted by EFANE to prepare this five-year review for the former NCBC Davisville with their review and input. The review team includes EPA and the Rhode Island Department of Environmental Management (RIDEM).

## 1.3 ORGANIZATION OF REPORT

Chapter 1 of this report presents the introduction and description of the five-year review process, description and background of the former NCBC Davisville, and community awareness. Chapter 2 presents the active sites with the selected remedy implemented. Chapter 3 presents the active sites that are still under investigation. Appendix A presents the status of sites for which NFA has been determined to be appropriate. Appendixes B and C provide support

documentation for Site 07 and Site 09, respectively. Appendix D provides copies of the responses to comments received from the regulatory agencies for the Draft and Revised Draft versions of this document.

## 1.4 NEXT FIVE-YEAR REVIEW

The next five-year review for the former NCBC Davisville facility is required by March 2008, five years from the date of this review