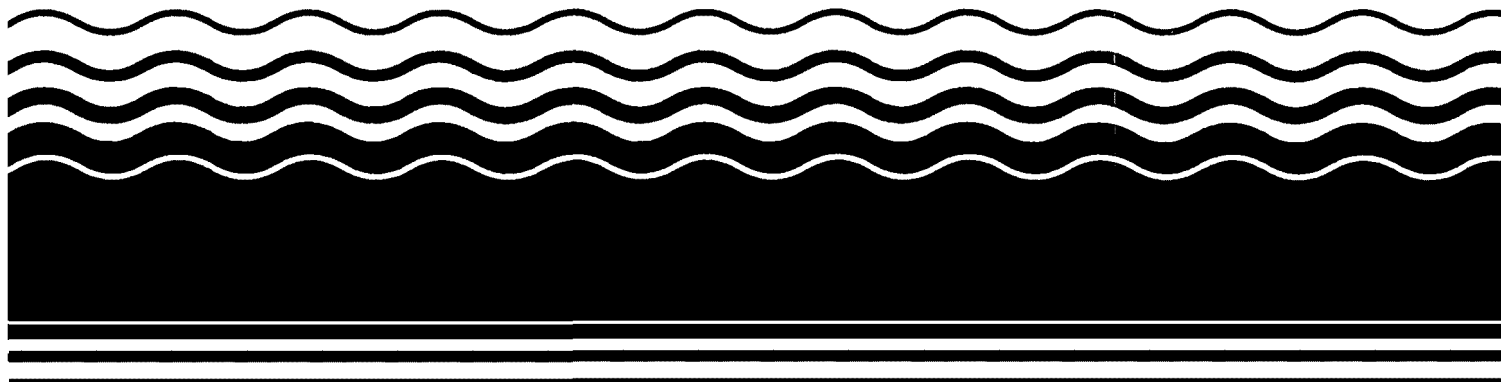




Superfund Record of Decision:

Naval Air Engineering Center
(Operable Unit 6), NJ



NOTICE

The appendices listed in the index that are not found in this document have been removed at the request of the issuing agency. They contain material which supplement, but adds no further applicable information to the content of the document. All supplemental material is, however, contained in the administrative record for this site.

REPORT DOCUMENTATION PAGE	1. REPORT NO. EPA/ROD/R02-92/192	2.	3. Recipient's Accession No.
4. Title and Subtitle SUPERFUND RECORD OF DECISION Naval Air Engineering Center (Operable Unit 6), NJ Fifth Remedial Action - Subsequent to follow	5. Report Date 12/31/91		6.
7. Author(s)	8. Performing Organization Rept. No.		
9. Performing Organization Name and Address	10. Project/Task/Work Unit No.		
	11. Contract(C) or Grant(G) No. (C) (G)		
12. Sponsoring Organization Name and Address U.S. Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460	13. Type of Report & Period Covered 800/000		14.
15. Supplementary Notes PB93-963810			
16. Abstract (Limit: 200 words) The 7,400-acre Naval Air Engineering Center (NAEC) site is located in Jackson and Manchester Townships, Ocean County, New Jersey, approximately 14 miles inland from the Atlantic Ocean. Surrounding land use is primarily undeveloped woodlands and open areas, with the closest residential area, the Borough of Lakehurst, located southeast of the facility. The NAEC, which lies within the Toms River Drainage Basin, contains over 1,300 acres of flood-prone areas. Drinking water in the vicinity of the site is generally supplied to the residents by municipal supply wells. Some private wells exist, but these are used primarily for irrigation purposes. The U.S. Navy assumed control of the property in 1919, and it was formally commissioned Naval Air Station (NAS) Lakehurst in 1921. The NAEC was moved from the Naval Base, Philadelphia to NAS Lakehurst in 1974. The NAEC's mission is to conduct research, development, engineering, testing and system integration, limited production, and procurement for aircraft and airborne weapons systems. Historically, various operations at NAEC have required the use, handling, storage, and occasional onsite disposal of hazardous substances. During the operational period of the facility, there have been reported and suspected releases (See Attached Page)			
17. Document Analysis a. Descriptors Record of Decision - Naval Air Engineering Center (Operable Unit 6), NJ Fifth Remedial Action - Subsequent to follow Contaminated Media: none Key Contaminants: none b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
18. Availability Statement	19. Security Class (This Report) None	21. No. of Pages 26	
	20. Security Class (This Page) None	22. Price	

EPA/ROD/R02-92/192

Naval Air Engineering Center (Operable Unit 6), NJ
Fifth Remedial Action - Subsequent to follow

Abstract (Continued)

of these substances into the environment. The U.S. Air Force's Installation Restoration Program (IRP) has identified 44 contaminated sites at NAEC, 16 of which have warranted further investigation to assess potential impacts. One of these sites, Site 44, was used over a 34-year period for testing and storage of PCB-containing electrical transformers. As part of past operating procedures at the site, a 3-ounce sample of transformer oil was tested yearly and disposed of onto the ground outside Building 191. An estimated total of 26 gallons of PCB oil has been disposed of in this manner. IRP investigations at Site 44 revealed elevated levels of PCBs in soil. In a 1991 removal action, NAEC excavated approximately 13 cubic yards of PCB-contaminated soil at concentrations greater than 5 mg/kg and transported the soil offsite for incineration. This ROD addresses any remaining contaminated soil at Site 44, as OU6. Subsequent RODs will address other OUs at NAEC. Post-excavation sampling has confirmed that the previously implemented removal action has accomplished the primary objective of remediating the site; therefore, there are no contaminants of concern affecting this site.

The selected remedial action for this site is no further action because the previously implemented removal action has eliminated the need to conduct additional clean-up activities. Recently conducted environmental investigations show no evidence of any significant contamination remaining at Site 44. There are no costs associated with this no action remedy.

PERFORMANCE STANDARDS OR GOALS: Not applicable.

ROD FACT SHEET FOR NAEC LAKEHURST
OPERABLE UNIT 6

SITE

Name	NAEC Lakehurst
Location/State	Ocean County, New Jersey
EPA Region	II
HRS Score (date)	49.48 (July 22, 1987)
NPL Rank (date)	Group 4 (July 22, 1987)

ROD

(OU 6 - Site 44)

Date Signed	December 31, 1991
Remedy/ies	No Action
Capital Cost	NA
O & M/year	NA
Present worth	NA

LEAD

Remdial/Enforcement	Federal Facility
EPA/State/PRP	Navy
Primary contact (phone)	Jeff Gratz 212-264-6667
Secondary cont. (phone)	Robert Wing 212-264-8670
Main PRP(s)	Navy
PRP Contact (phone)	Ms. Lucy Bottomley

WASTE

Type (metals, PCB, &c)	PCBs and Petroleum Hydrocarbons
Medium (soil, g.w., &c)	Soil
Origin	Spills from base activities
Est. quantity cu.yd.	Contaminated soil (approx. 13 cu.yds.) removed through previous removal actions

RECORD OF DECISION

DECLARATION

SITE 44

NAVAL AIR ENGINEERING CENTER

FACILITY NAME AND LOCATION

Naval Air Engineering Center
Lakehurst, NJ 08733

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for one individual site located at the Naval Air Engineering Center (NAEC) in Lakehurst, New Jersey. The selected remedial action was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan. This decision is based on the administrative record for this site, which is available for public review at the Ocean County Library, 101 Washington Street, Toms River, New Jersey.

Both the United States Environmental Protection Agency (USEPA), Region II Administrator, and the Commissioner of the New Jersey Department of Environmental Protection and Energy (NJDEPE) concur with the selected remedy.

DESCRIPTION OF THE SELECTED REMEDY

The United States Department of the Navy, the lead agency for this Site, has selected no additional action as the remedy for Site 44.

DECLARATION STATEMENT

The United States Department of the Navy has determined that no additional remedial action is necessary at Site 44 to ensure protection of human health and the environment. At Site 44, a small scale removal in which soil contaminated with elevated levels of PCBs were removed, eliminated the need to conduct additional remedial action.

This Record of Decision concerns Site 44 only. The location of this site within NAEC is shown in Figure 1.




Captain David Raffetto
Commanding Officer
Naval Air Engineering Center
Lakehurst, New Jersey

10 Dec. 1991

(Date)

With the concurrence of:



Constantine Sidamon-Eristoff
Regional Administrator
U.S. Environmental Protection Agency, Region II

12/31/91

(Date)

SITE DESCRIPTION

NAEC is located in Jackson and Manchester Townships, Ocean County, New Jersey, approximately 14 miles inland from the Atlantic Ocean (Figure 2). NAEC is approximately 7,400 acres and is bordered by Route 547 to the east, the Fort Dix Military Reservation to the west, woodland to the north (portions of which are within Colliers Mill Wildlife Management Area), Lakehurst Borough and woodland, including the Manchester Wildlife Management Area, to the south. NAEC and the surrounding area are located within the Pinelands National Reserve, the most extensive undeveloped land tract of the Middle Atlantic Seaboard.

NAEC lies within the Outer Coastal Plain physiographic province, which is characterized by gently rolling terrain with minimal relief. Surface elevations within NAEC range from a low of approximately 60 feet above mean sea level in the eastcentral part of the base, to a high of approximately 190 feet above mean sea level in the southwestern part of the base. Maximum relief occurs in the southwestern part of the base because of its proximity to the more rolling terrain of the Inner Coastal Plain. Surface slopes are generally less than five percent.

NAEC lies within the Toms River Drainage Basin. The basin is relatively small (191 square miles) and the residence time for surface drainage waters is short. Drainage from NAEC discharges to the Ridgeway Branch to the north and to the Black and Union Branches to the south. All three streams discharge into the Toms River. Several headwater tributaries to these branches originate at NAEC. Northern tributaries to the Ridgeway Branch include the Elisha, Success, Harris and Obhanan Ridgeway Branches. The southern tributaries to the Black and Union Branches include the North Ruckles and Middle Ruckles Branches and Manapaqua Brook. The Ridgeway and Union Branches then feed Pine Lake; located approximately 2.5 miles east of NAEC before joining Toms river. Storm drainage from NAEC is divided between the north and south, discharging into the Ridgeway Branch and Union Branch, respectively. The Paint Branch, located in the eastcentral part of the base, is a relatively small stream which feeds the Manapaqua Brook.

Three small water bodies are located in the western portion of NAEC: Bass Lake, Clubhouse Lake, and Pickerel Pond. NAEC also contains over 1,300 acres of flood-prone areas, occurring primarily in the southcentral part of the base, and approximately 1,300 acres of prime agricultural land in the western portion of the base.

There are 913 acres on the eastern portion of NAEC that lie within Manchester Township and the remaining acreage is in Jackson Township. The combined population of Lakehurst Borough, Manchester and Jackson Townships, is approximately 65,400, for an area of approximately 185 square miles. The average population density of Manchester and Jackson Townships is 169 persons per square mile, whereas the density of Lakehurst Borough is 3,061 persons per square mile.

The areas surrounding NAEC are, in general, not heavily developed. The closest commercial area is located near the southeastern section of the facility in the borough of Lakehurst. This is primarily a residential area with some shops but no industry. To the north and south are State wildlife management areas which are essentially undeveloped. Adjacent to and south of NAEC are commercial cranberry bogs, the drainage from which crosses the southeast section of NAEC property.

For the combined area of Manchester and Jackson Townships, approximately 41 percent of the land is vacant (undeveloped), 57 percent is residential, one percent is commercial and the remaining one percent is industrial or farmed. For Lakehurst Borough, 83 percent of the land is residential, 11 percent is vacant, and the remaining 6 percent commercially developed.

In the vicinity of the NAEC, water is generally supplied to the populace by municipal supply wells. Some private wells exist, but these are used primarily for irrigation and not as a source of drinking water. In Lakehurst Borough there is a well field consisting of seven 50 foot deep wells, located approximately two-thirds of a mile south of the eastern portion of NAEC. Three of seven wells (four of the wells are rarely operated) are pumped at an average rate of 70 to 90 gallons per minute and supply drinking water for a population of approximately 3000. Jackson Township operates one supply well in the Legler area, approximately one-quarter mile north of NAEC, which supplies water to a very small population (probably less than 1,000) in the immediate vicinity of NAEC.

SITE HISTORY

The history of NAEC dates back to 1916, when the Eddystone Chemical Company leased from the Manchester Land Development Company property to develop an experimental firing range for the testing of chemical artillery shells. Testing was accomplished in cooperation and agreement with the Russian Imperial Government until its fall in 1919. At the time, the U.S. Army assumed control of chemical warfare testing by the Eddystone Chemical Company and named the area Camp Kendrick. By the early fall of 1919, construction of Hangar No.1 for the Navy had commenced. Camp Kendrick was turned over to the Navy and formally commissioned Naval Air Station (NAS), Lakehurst, New Jersey on June 28, 1921. NAEC was moved from the Naval Base, Philadelphia to Lakehurst in December 1974. At that time, NAEC became the host activity, thus, the new name NAEC Lakehurst.

Currently, NAEC's mission is to conduct programs of technology development, engineering, developmental evaluation and verification, systems integration, limited manufacturing, procurement, integrated logistic support management, and fleet engineering support for Aircraft-Platform Interface (API) systems. This includes terminal guidance, recovery, handling, propulsion support, avionics support, servicing and maintenance, aircraft/weapons/ship compatibility, and takeoff. The Center provides, operates, and maintains product evaluation and verification sites, aviation and other facilities, and support services (including development of equipment and instrumentation) for API systems and other Department of Defense programs. The Center also provides facilities and support services for tenant activities and units as designed by appropriate

authority.

NAEC and its tenant activities now occupy more than 300 buildings, built between 1919 and 1989, totaling over 2,845,00 square feet. The command also operates and maintains: two 5,000-foot long runways, a 12,000-foot long catapult and arrest runway, one one-mile long jet car test track, four one and one-quarter mile long jet car test tracks, a parachute jump circle, a 79-acre golf course, and a 3,500-acre conservation area.

The various operations and activities at NAEC required the use, handling, storage and occasionally the on-site disposal of hazardous substances. During the operational period of the facility, there have been documented, reported or suspected releases of these substances into the environment in some areas.

INITIAL INVESTIGATIONS

As part of the DOD Installation Restoration Program, the Navy developed the Navy Assessment and Control of Installation Pollutants (NACIP) program to "identify, assess and control environmental contamination from past methods of storage, handling, and disposal of hazardous substances at naval shore facilities".

As part of the NACIP program, an Initial Assessment Study (IAS) was completed in 1983 by the Naval Energy and Environmental Support Activity (NEESA) at NAEC. The purpose of the IAS was to "identify and assess sites posing a potential threat to human health or the environment due to contamination from past hazardous materials operations".

Based on information from historical records, aerial photographs, field inspections, and personnel interviews, the IAS identified a total of 44 potentially contaminated sites, which were evaluated with regard to contamination characteristics, migration pathways, and pollutant receptors. The IAS concluded that "while none of the sites pose an immediate threat to human health or the environment, 16 warrant further investigation under the NACIP program, to assess potential impacts". A Remedial Investigation (RI) was recommended "to confirm or deny the existence of the suspected contamination and to quantify the extent of any problems which may exist". Following further review of available data by Navy personnel, it was decided that 42 of the 44 sites should be included in the RI. Two potentially contaminated sites - an ordnance site (Site 41) and an Advanced Underground Storage Facility (Site 43), were deleted from the RI because they had already been rehabilitated.

This Record of Decision concerns only Site 44.

NAEC was designated in 1987 as a National Priorities List (NPL) site under CERCLA.

ENVIRONMENTAL INVESTIGATION/FEASIBILITY STUDY

Phase I of the Remedial Investigation (RI-Phase I) was conducted from 1985 to 1987 to (a) confirm or refute the existence of contamination at potentially contaminated sites identified during previous studies; and (b) develop recommendations for further Phase II investigations. The results of the RI-Phase I were presented in a report issued in 1987.

Phase II of the RI was initiated in the summer of 1988 to: (a) confirm the results of the Phase I study, specifically the presence or absence of contamination; (b) identify where contamination is located, assess the potential for contaminant migration and define the sources of contamination; and (c) support a feasibility study and final actions at the sites.

Site 44 Background

Site 44 consists of the transformer storage areas adjacent to Buildings 191 and 272 (see Figure 3). Site 44 is located approximately 900 feet upgradient from the northern boundary of NAEC. The area around Building 272 is paved and the area around Building 191 is primarily unpaved sand/gravel. There is a shallow groundwater table at this site with a depth of approximately 11 feet. Groundwater flow is in a generally northerly direction.

For approximately 34 years, these areas were utilized for the testing and storage of electrical transformers, some of which contained polychlorinated biphenyls (PCBs). It was determined during personal interviews that, as part of normal operating procedures, a three ounce sample of transformer oil was tested yearly for conductance and viscosity then disposed of onto the ground outside of Building 191. The sample was composed mainly of mineral oil and Pryenol. It is estimated that up to 26 gallons of PCB oil were disposed of in this manner, during the time this past practice was in effect.

Environmental Investigation Summary

November 1985 - January 1986 (RI-Phase I) - PCB analysis of two soil samples collected from the northern side of Building 272 revealed no PCBs.

May - June 1988 - Soil gas and shallow groundwater screening surveys conducted in the area north of Building 191 detected trace concentrations of petroleum and chlorinated hydrocarbons. Additional investigations were recommended.

August - December 1988 (RI-Phase II) - Elevated levels of PCBs (2000 ppm, 1100 ppm, and .65 ppm) were detected in three of four surface soil samples collected around Building 191. No PCBs were detected in three soil samples collected around Building 272. Elevated levels of petroleum hydrocarbons (1594.54 ppm, 1306.06 ppm, 1765.42 ppm, 1210.89 ppm, 2094.17 ppm, 1145.81 ppm, and 3627.92 ppm)

were detected in all seven surface soil samples collected at the site. No contamination was detected in groundwater samples collected from a monitoring well (AG) approximately 100 feet downgradient from Building 191. Soil results are contained in Table 1.

Removal Action and Confirmation Sampling Summary

Based on the Remedial Investigation and historical information discussed above, it was determined that PCB contamination was limited to a localized area at the perimeter of Building 191. NAEC initiated, with Federal and State concurrence, a small-scale removal action, in the spring of 1991, which is documented in the Confirmation Sampling Report. To further delineate the contaminated area of soil prior to removal, 37 soil samples were analyzed. The range of concentrations of PCBs in the samples were from 0.06 ppm PCB to 170 ppm PCB (average reading 17.76 ppm PCB) (See Table 2 and Figure 4). Approximately 13 cubic yards of PCB contaminated soil, at concentrations of 5 ppm PCB and higher, were removed, placed in drums, and transported by National Waste Disposal, Incorporated to Aptus in Coffeyville, KS for incineration. Post excavation sampling, determined that the removal action had accomplished the primary objective of the Confirmation Sampling Report: Remediate the site to below the 5 ppm PCB limit set by the NJDEPE for this site at NAEC. The maximum PCB concentration in the remaining soil was 0.22 ppm PCB, as determined during post-removal split sample testing, well below any state or federal action levels for PCBs (See Table 3).

As a secondary objective of the Confirmation Sampling Report, NAEC tested to confirm the presence of elevated levels of petroleum hydrocarbon contamination at Site 44. NAEC sampled 9 locations at the site (3 samples at Building 272 and 6 at Building 191) for total petroleum hydrocarbons. The sample locations were chosen randomly. The results ranged from non-detect to 1,100 ppm petroleum hydrocarbons (average reading 312.2 ppm)(See Table 4). To confirm the absence of carcinogenic compounds and assess the environmental risk, a base neutral/acid extractables analysis was performed, where high levels of petroleum hydrocarbons were found (above 1000 ppm). The results of these analyses confirmed that the petroleum hydrocarbon contamination was not a significant threat (See Tables 5 & 6).

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The Proposed Remedial Action Plan (PRAP) for Site 44 was issued to interested parties on August 23, 1991. On August 26-28, 1991, a newspaper notification inviting public comment on the PRAP appeared in The Asbury Park Press, The Ocean County Observer, and The Advanced News. The comment period was held from August 26 to September 26, 1991. The newspaper notification also identified the Ocean County Library as the location of the Information Repository.

A public hearing was held on September 4, 1991. At this meeting representatives from the Navy, USEPA and NJDEPE were available to answer questions about the Site

and the No Additional Action determination. A list of attendees is attached to this Record of Decision as Appendix A. Comments received and responses provided during the public hearing are included in the Responsiveness Summary, which is part of this Record of Decision. No written comments were received during the public comment period.

This decision document presents the selected remedial action (No Additional Action) for Site 44 of NAEC in Ocean County, Lakehurst, New Jersey, chosen in accordance with CERCLA, as amended by SARA and, to the extent practicable, the National Contingency Plan (NCP). The decision for the site is based on the Administrative Record which is available for public review at the Ocean County Library, 101 Washington Street, Toms River, New Jersey.

SCOPE AND ROLE OF RESPONSE ACTION

The results of environmental investigations show no further evidence of significant contamination at Site 44. Because the available data indicate that conditions at Site 44 pose no unacceptable risks to human health or the environment, no additional action is necessary for this site.

SUMMARIES OF SITE CHARACTERISTICS

The location of the Site within NAEC is shown in Figure 1. A map of the individual site is provided as Figure 3. The entire NAEC is underlain by the Cohansey Formation, a water-table sand aquifer. The general direction of groundwater flow at NAEC is to the east-northeast. Chemicals detected in groundwater and soil are provided in Tables 1-6.

SUMMARIES OF SITE RISKS

The results of the Remedial Investigation and the Confirmation Sampling Report, including the analytical data summarized in Tables 1-6, indicate that conditions at Site 44 pose no unacceptable risks to human health and the environment.

RECORD OF DECISION
RESPONSIVENESS SUMMARY
SITE 44
NAVAL AIR ENGINEERING CENTER

The purpose of this responsiveness summary is to review public response to the Proposed Remedial Action Plan (PRAP) for Site 44. It also documents NAEC's consideration of such comments raised during the public comment period.

The responsiveness summary for the Site is divided into the following three sections:

- * Overview - This section briefly describes the process to develop and evaluate the appropriate remedial responses for the Site, the No Additional Action alternative recommended in the PRAP and any impacts on the proposed plan due to public comment.
- * Background on Community Involvement - This section describes community relations activities conducted with respect to the area of concern.
- * Summary of Major Questions and Comments - This section summarizes verbal and written comments received during the public meeting and public comment period.

OVERVIEW

Site 44 is located at NAEC in Ocean County, Lakehurst, New Jersey. The Site has been under investigation for potential environmental contamination. This responsiveness summary addresses public response to the PRAP, proposing the No Additional Action Alternative, for this Site only.

The PRAP, Conformation Sampling Report and other supporting information is available for public review at the information repository located at the Ocean County Library, 101 Washington Street, Toms River, New Jersey.

BACKGROUND ON COMMUNITY INVOLVEMENT

This section provides a brief history of community participation in the investigation and remedial planning activities conducted at the Site. Throughout the investigation period, the USEPA and NJDEPE have been reviewing work plans and confirmation sampling reports and have been providing comments and recommendations which are incorporated into the appropriate documents. A Technical Review Committee (TRC), consisting of representatives of the Navy, the USEPA, the NJDEPE, the Ocean County Board of Health, the New Jersey Pinelands Commission, other agencies and communities surrounding NAEC was formed and has been holding periodic meetings to maintain open lines of communication and to inform all parties of current activities.

Prior to the public release of site-specific documents, NAEC's public relations

staff compiled a list of local public officials who demonstrated or were expected to have an interest in the investigation. Local environmental interest groups were also identified and included on this list. The list is attached as Appendix B to this Record of Decision.

On August 26, 1991, NAEC mailed the PRAP for the three sites to concerned parties on the list described above. On August 26-28, 1991, a public notice appeared in The Asbury Park Press and The Ocean County Observer, and in The Advanced News. The public notice summarized the PRAP and the preferred alternative (No Additional Action). The announcement also identified the time and location of a public hearing and specified a public comment period, and the address to which written comments could be sent. Public comments were accepted from August 26 through September 26, 1991.

A public meeting was held on September 4, 1991, at 7:30 p.m. at the Lakehurst Elementary School in Lakehurst, New Jersey. The Site investigations, site evaluation process and the proposed remedial alternative (No Additional Action) were discussed for Site 44. Also discussed at the Public Hearing were Sites 5, 19, 21 and Areas A and B. NAEC representatives present included: Carol Ancellin, Deputy Public Affairs Office; Robert Kirkbright, Engineering Director; Lucy Bottomley, Head Environmental Engineer; and Aarti Dalal Reddy, Michael Figura, John Longbottom and Jill Meredith, Environmental Engineers. Mr. Jeffrey Gratz, represented the USEPA's Federal Facility Section; Ms. Donna Gaffigan represented the NJDEPE's Bureau of Federal Case Management; Mr. Kevin Schick represented NJDEPE's Bureau of Environmental Evaluation and Risk Assessment and Ms. Linda Welkom represented NJDEPE's Bureau of Ground Water Pollution Abatement. The complete attendance list is provided in Appendix A to this Record of Decision.

SUMMARY OF MAJOR QUESTIONS AND COMMENTS

Written Comments

During the public comment period from August 26 through September 26, 1991, no written comments were received pertaining to Site 44.

Public Meeting Comments

None of the questions asked during the September 4, 1991 public hearing pertained specifically to Site 44 or the No Additional Action Alternative proposal for the Site. A complete transcript of the questions asked and responses given during the public hearing is provided in Appendix C to this Record of Decision.

TABLE 2
PCB GRID SAMPLING RESULTS

<u>SAMPLE ID</u>	<u>RESULTS (ppm)</u>	<u>DETECTION LIMIT (ppm)</u>
E1	27.4	0.02
E2	2.8	0.02
EE1	0.07	0.02
EE2	0.16	0.02
EE3	0.24	0.02
EE4	31.6	0.02
EE5	1.47	0.02
EE6	0.84	0.02
EE7	4.5	0.02
EE8	0.06	0.02
EE9	1.94	0.02
E2-1	170	10.0
E2-2	1.9	0.10
E2-3	0.88	0.20
E2-4	0.99	0.20
E2-5	3.3	0.40
E2-6	79.6	8.0
E2-7	3.7	0.40
E2-8	0.32	0.02
E2-9	0.14	0.02
E2-10	0.26	0.02
E2-11	0.19	0.02
E2-12	5.9	0.02
E2-13	2.2	0.20
E2-14	13.2	1.0
E3-1	50.2	2.0
E3-2	0.52	0.02
E3-3	0.39	0.1
E3-4	0.12	0.02
E4-1	1.63	0.1
E4-2	2.6	0.1
E4-3	1.88	10.0
E4-4	0.99	0.02
E4-7	1.23	0.04
E4-8	105.2	2.0
E4-9	80.53	2.0
E4-10	59.96	2.0

TABLE 1
RI - PHASE II DATA

Lab Sample Number:		AA19699	AA19700	AA19700DL	AA19700DL2	AA19701	AA19701DL	AA19701DL2	AA19702							
SAMPLE :		S44-4	S44-5	S44-5	S44-5	S44-6	S44-6	S44-6	S44-7							
Collect Date:		04-OCT-88	04-OCT-88	04-OCT-88	04-OCT-88	04-OCT-88	04-OCT-88	04-OCT-88	04-OCT-88							
	UNITS	VALUE	QUAL	VALUE	QUAL	VALUE	QUAL	VALUE	QUAL	VALUE	QUAL	VALUE	QUAL	VALUE	QUAL	
Indeno(1,2,3-c,d)pyrene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Benzo(ghi)perylene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SEMI-VOLATILE ORGANIC (TOTAL)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PESTICIDES / PCBs																
Delta-BHC	ug/kg	8.6 U		9900 U		9900 U		99000 U		860 U		8600 U		86000 U		87 U
4,4'-DDE	ug/kg	17 U		20 U		20000 U		200000 U		1700 U		17000 U		170000 U		170 U
4,4'-DDD	ug/kg	17 U		20 U		20000 U		200000 U		1700 U		17000 U		170000 U		170 U
4,4'-DDT	ug/kg	17 U		20 U		20000 U		200000 U		1700 U		17000 U		170000 U		170 U
Arochlor 1260	ug/kg	173 U		200 D		200000 U		1100000 J		17000 U		170000 D		2000000		650 J
ADDITIONAL PARAMETERS																
Total Petroleum Hydrocarbons	ug/g	1594.54		1306.06		-		-		1765.42		-		-		1210.89
Total Organic Carbon	ug/g	-		-		-		-		-		-		-		-
Sulfate	ug/g	-		-		-		-		-		-		-		-

Lab Sample Number:		AA19703	AA19703DL	AA19704	AA19705	AA19705DL	AA19705DL2					
SAMPLE :		S44-9	S44-9	S44-10	S44-11	S44-11	S44-11					
Collect Date:		04-OCT-88	04-OCT-88	04-OCT-88	04-OCT-88	04-OCT-88	04-OCT-88					
	UNITS	VALUE	QUAL	VALUE	QUAL	VALUE	QUAL	VALUE	QUAL	VALUE	QUAL	
Indeno(1,2,3-c,d)pyrene	ug/kg	-	-	-	-	-	-	-	-	-	-	
Benzo(ghi)perylene	ug/kg	-	-	-	-	-	-	-	-	-	-	
SEMI-VOLATILE ORGANIC (TOTAL)		-	-	-	-	-	-	-	-	-	-	
PESTICIDES / PCBs												
Delta-BHC	ug/kg	91 U		910 U		83 U		89 U		890 U		1800 U
4,4'-DDE	ug/kg	180 U		1800 U		170 U		180 U		1800 U		3500 U
4,4'-DDD	ug/kg	180 U		1800 U		170 U		180 U		1800 U		3500 U
4,4'-DDT	ug/kg	180 U		1800 U		170 U		180 U		1800 U		3500 U
Arochlor 1260	ug/kg	1800 U		18000 U		1700 U		1800 U		18000 U		35000 U
ADDITIONAL PARAMETERS												
Total Petroleum Hydrocarbons	ug/g	2094.17		-		1145.81		3627.92		-		-
Total Organic Carbon	ug/g	-		-		-		-		-		-
Sulfate	ug/g	-		-		-		-		-		-

TABLE 3
COMPARISON OF PCB SPLIT SAMPLE RESULTS
POST-REMOVAL

ENVIRONMENTAL PROFILES			INTECH BIOLABS	
SAMPLE ID	RESULT (ppm)	DETECTION LIMIT (ppm)	RESULT (ppm)	DETECTION LIMIT (ppm)
1	ND	0.02	0.018	0.018
2	0.22	0.02	0.15	0.018
3	0.10	0.02	0.058	0.017

ND=NONE DETECT

TABLE 4
TPHC SAMPLE RESULTS

SAMPLE ID	RESULTS (ppm)	DETECTION LIMIT (ppm)
1	90	10
2	1100	50
3	ND	10
4	40	10
5	10	10
6	ND	10
7	450	20
8	20	10
9	1100	50

ND=NONE DETECT

TABLE 5
 BASE NEUTRAL/ACID EXTRACTABLES ANALYSIS DATA
 FOR E7-10 AND E7-11

COMPOUND	E7-10		E7-11	
	RESULTS (ppm)	MDL	RESULTS	MDL
N-nitroso-dimethylamine	ND	.330	ND	.340
bis(2-Chloroethyl) Ether	ND	.330	ND	.340
1,3-Dichlorobenzene	ND	.330	ND	.340
1,4-Dichlorobenzene	ND	.330	ND	.340
Benzyl alcohol	ND	.330	ND	.340
1,2-Dichlorobenzene	ND	.330	ND	.340
bis(2-chloroisopropyl) ether	ND	.330	ND	.340
N-Nitroso-Di-n-propylamine	ND	.330	ND	.340
Hexachloroethane	ND	.330	ND	.340
Nitrobenzene	ND	.330	ND	.340
Isophorone	ND	.330	ND	.340
Benzoic Acid	ND	1.7	ND	1.7
bis(2-Chloroethoxy)methane	ND	.330	ND	.340
1,2,4-Trichlorobenzene	ND	.330	ND	.340
Napthalene	ND	.330	ND	.340
Hexachlorobutadiene	ND	.330	ND	.340
2-Methylnapthalene	ND	.330	ND	.340
Hexachlorocyclopentadiene	ND	.330	ND	.340
2-Chloronapthalene	ND	.330	ND	.340
Dimethylphthalate	ND	.330	ND	.340
Acenaphthylene	ND	.330	ND	.340
Acenaphthene	ND	.330	ND	.340
Dibenzofuran	ND	.330	ND	.340
2,6-Dinitrotoluene	ND	.330	ND	.340
2,4-Dinitrotoluene	ND	.330	ND	.340
Diethylphthalate	ND	.330	ND	.340
4-Chlorophenyl-phenylether	ND	.330	ND	.340
Fluorene	ND	.330	ND	.340
N-Nitrosodiphenylamine	ND	.330	ND	.340
4-Bromophenyl-phenylether	ND	.330	ND	.340
Hexachlorobenzene	ND	.330	ND	.340
Phenanthrene	ND	.330	0.053	.340
Anthracene	ND	.330	ND	.340
Di-n-butylphthalate	ND	.330	ND	.340
Fluoranthene	ND	.330	1.1	.340
Benzidine	ND	.330	ND	.340
Pyrene	ND	.330	1.1	.340
Butylbenzylphthalate	ND	.330	ND	.340
3,3-Dichlorobenzidine	ND	.670	ND	.680
Benzo(a)anthracene	ND	.330	0.32	.340
bis(2-Ethylhexyl)phthalate	ND	.330	ND	.340
Chrysene	ND	.330	0.68	.340
Di-n-octylphthalate	ND	.330	ND	.340
Benzo(b)fluoranthene	ND	.330	0.40	.340

TABLE 5
 BASE NEUTRAL/ACID EXTRACTABLES ANALYSIS DATA
 (Continued)

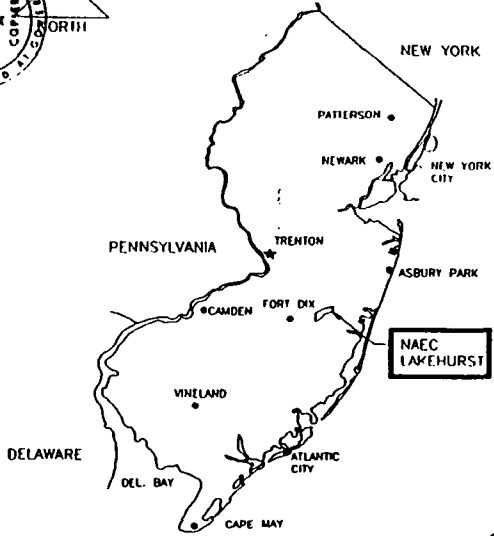
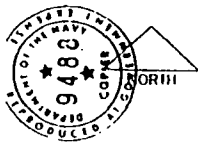
COMPOUND	E7-10		E7-11	
	RESULTS (ppm)	MDL	RESULTS	MDL
Benzo(k) fluoranthene	ND	.330	0.087	.340
Benzo(a) pyrene	ND	.330	0.29	.340
Indeno(1,2,3-cd)pyrene	ND	.330	ND	.340
Dibenz(a,h)anthracene	ND	.330	ND	.340
Benzo(g,h,i)perylene	ND	.330	ND	.340
1,2-Diphenylhydrazine	ND	.330	ND	.340

TABLE 6
 BASE NEUTRAL/ACID EXTRACTABLES ANALYSIS DATA
 FOR E7-12 AND E7-13

COMPOUND	E7-12		E7-13	
	RESULTS (ppm)	MDL	RESULTS	MDL
N-nitroso-dimethylamine	ND	.330	ND	.340
bis(2-Chloroethyl) Ether	ND	.330	ND	.340
1,3-Dichlorobenzene	ND	.330	ND	.340
1,4-Dichlorobenzene	ND	.330	ND	.340
Benzyl alcohol	ND	.330	ND	.340
1,2-Dichlorobenzene	ND	.330	ND	.340
bis(2-chloroisopropyl) ether	ND	.330	ND	.340
N-Nitroso-Di-n-propylamine	ND	.330	ND	.340
Hexachloroethane	ND	.330	ND	.340
Nitrobenzene	ND	.330	ND	.340
Isophorone	ND	.330	ND	.340
Benzoic Acid	ND	1.6	ND	1.7
bis(2-Chloroethoxy)methane	ND	.330	ND	.340
1,2,4-Trichlorobenzene	ND	.330	ND	.340
Napthalene	ND	.330	ND	.340
Hexachlorobutadiene	ND	.330	ND	.340
2-Methylnaphthalene	ND	.330	ND	.340
Hexachlorocyclopentadiene	ND	.330	ND	.340
2-Chloronaphthalene	ND	.330	ND	.340
Dimethylphthalate	ND	.330	ND	.340
Acenaphthylene	ND	.330	ND	.340
Acenaphthene	ND	.330	ND	.340
Dibenzofuran	ND	.330	ND	.340

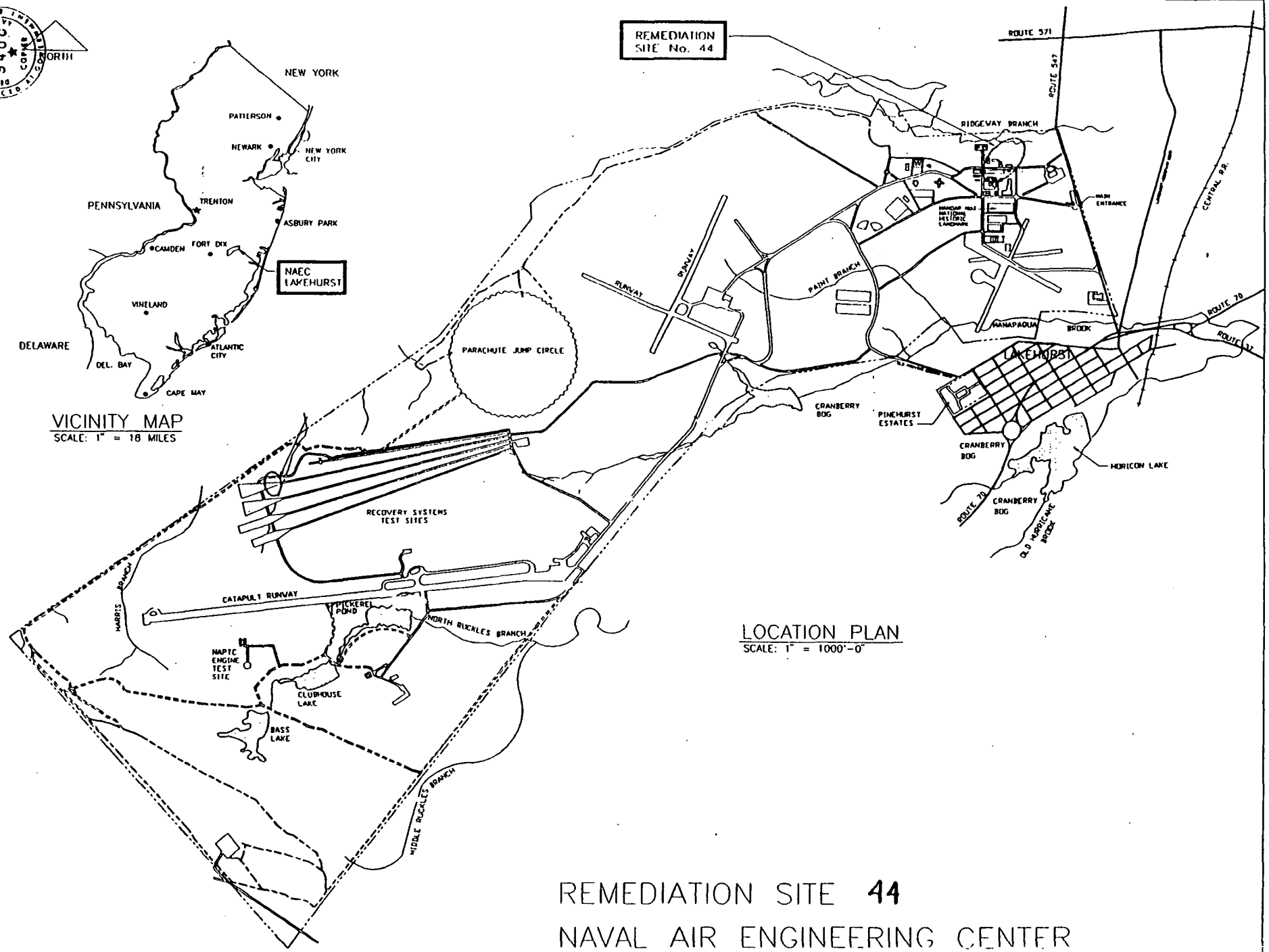
TABLE 6
 BASE NEUTRAL/ACID EXTRACTABLES ANALYSIS DATA
 (Continued)

COMPOUND	E7-12		E7-13	
	RESULTS (ppm)	MDL	RESULTS	MDL
2,6-Dinitrotoluene	ND	.330	ND	.340
2,4-Dinitrotoluene	ND	.330	ND	.340
Diethylphthalate	ND	.330	ND	.340
4-Chlorophenyl-phenylether	ND	.330	ND	.340
Fluorene	ND	.330	ND	.340
N-Nitrosodiphenylamine	ND	.330	ND	.340
4-Bromophenyl-phenylether	ND	.330	ND	.340
Hexachlorobenzene	ND	.330	ND	.340
Phenanthrene	ND	.330	ND	.340
Anthracene	ND	.330	ND	.340
Di-n-butylphthalate	ND	.330	ND	.340
Fluoranthene	ND	.330	ND	.340
Benzidine	ND	.330	ND	.340
Pyrene	ND	.330	ND	.340
Butylbenzylphthalate	ND	.330	ND	.340
3,3-Dichlorobenzidine	ND	.660	ND	.680
Benzo(a)anthracene	ND	.330	ND	.340
bis(2-Ethylhexyl)phthalate	ND	.330	ND	.340
Chrysene	ND	.330	ND	.340
Di-n-octylphthalate	ND	.330	ND	.340
Benzo(b)fluoranthene	ND	.330	ND	.340
Benzo(k)fluoranthene	ND	.330	ND	.340
Benzo(a)pyrene	ND	.330	ND	.340
Indeno(1,2,3-cd)pyrene	ND	.330	ND	.340
Dibenz(a,h)anthracene	ND	.330	ND	.340
Benzo(g,h,i)perylene	ND	.330	ND	.340
1,2-Diphenylhydrazine	ND	.330	ND	.340



VICINITY MAP
SCALE: 1" = 18 MILES

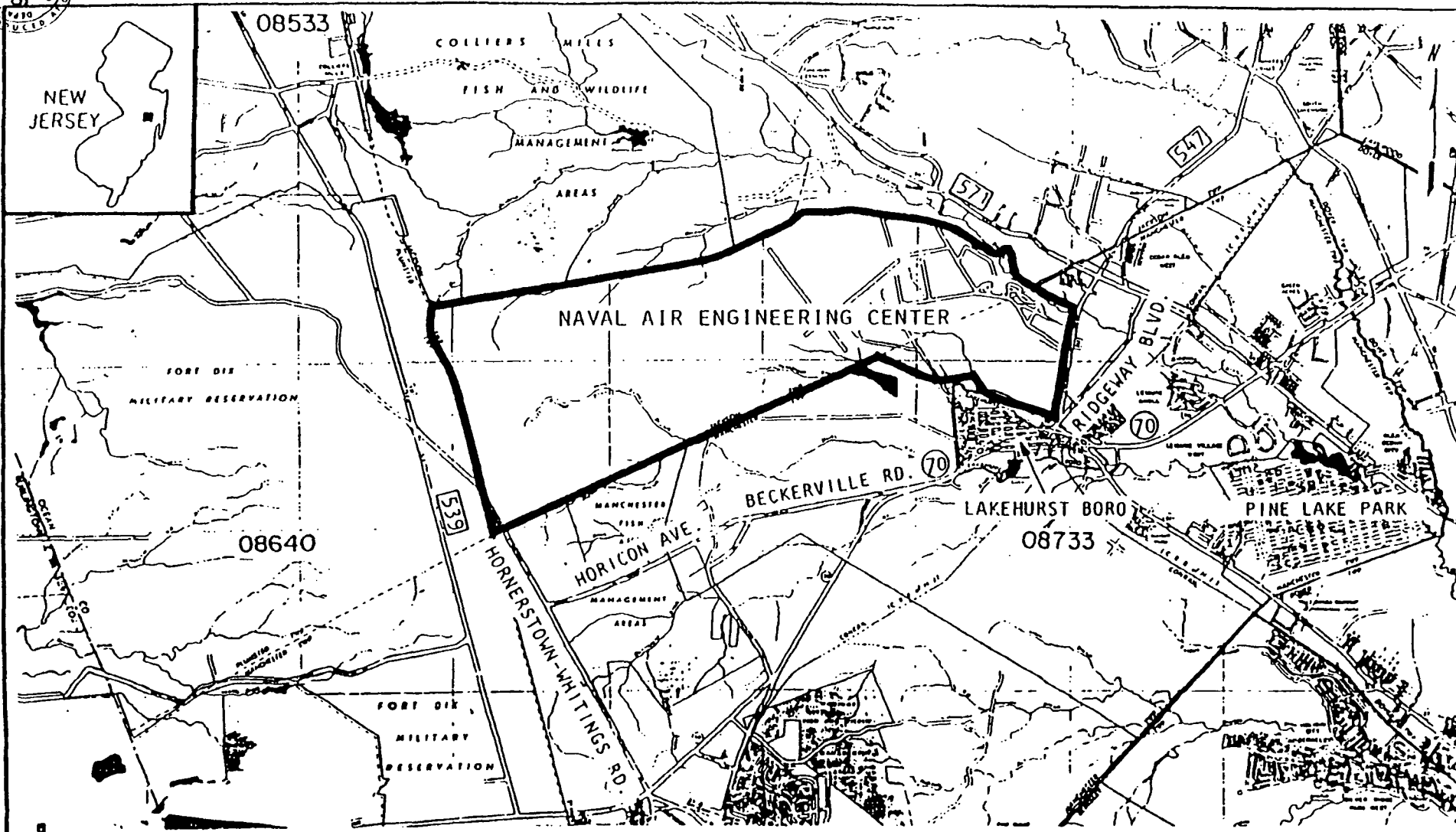
REMEDIA-
TION
SITE No. 44



LOCATION PLAN
SCALE: 1" = 1000'-0"

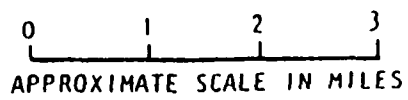
REMEDIA-
TION SITE 44
NAVAL AIR ENGINEERING CENTER

FIGURE 1



VICINITY MAP

**NAVAL AIR ENGINEERING CENTER
LAKEHURST, NEW JERSEY**



REFERENCE: HANGSTROM MAP
OCEAN CO., N.J.

FIGURE 2

DAMES & MOORE

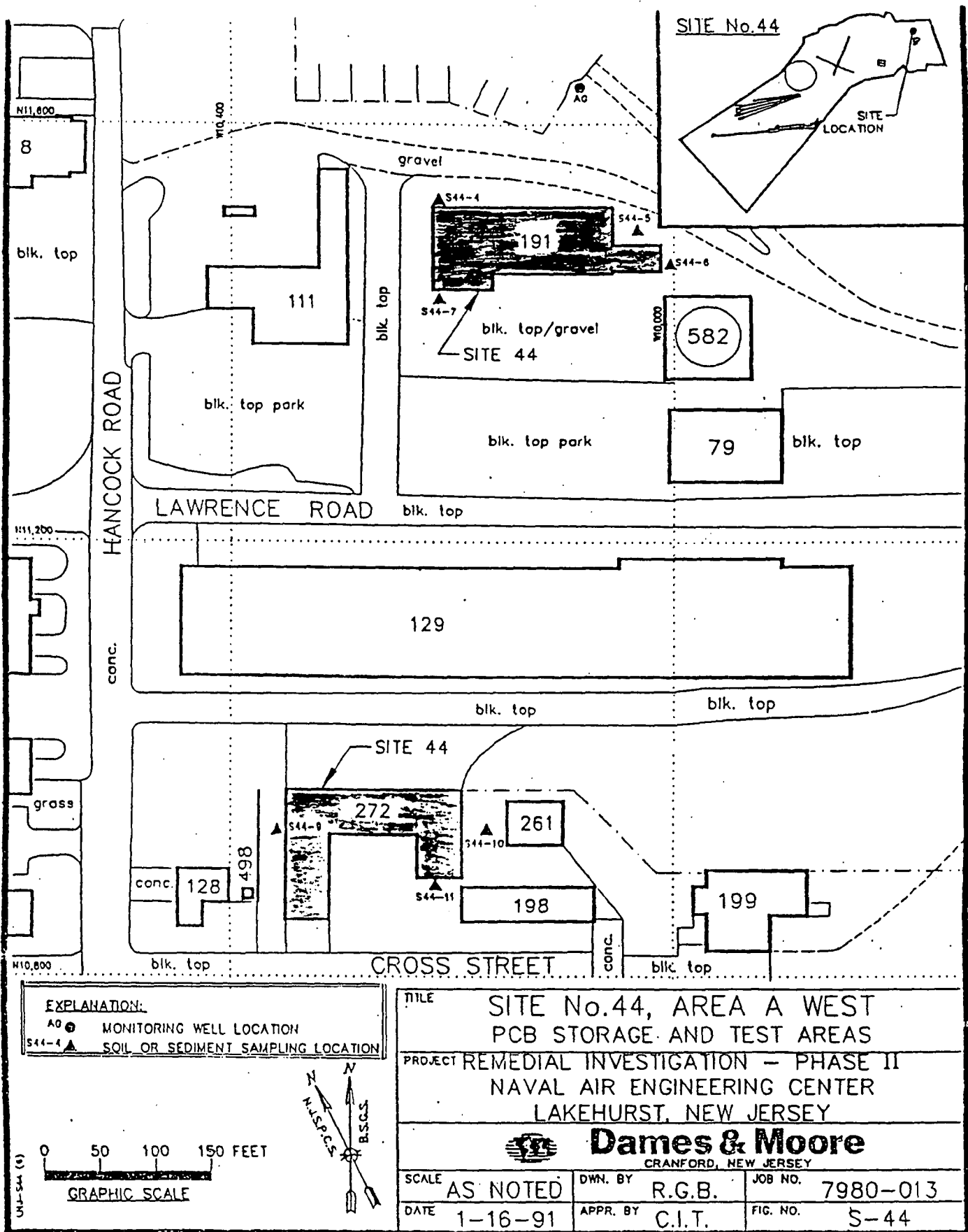
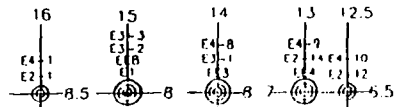


FIGURE 3



ENLARGED SOIL SAMPLE LOCATIONS

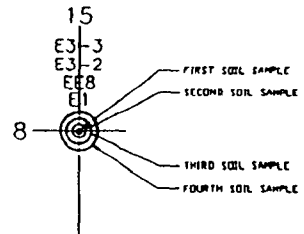


LEGEND

- E1 - SOIL SAMPLE IDENTIFICATION (INITIAL ROUND)
- EE1 - SOIL SAMPLE IDENTIFICATION (SECOND ROUND)
- E2-1 - SOIL SAMPLE IDENTIFICATION (THIRD ROUND)
- E3-1 - SOIL SAMPLE IDENTIFICATION (FOURTH ROUND)
- E4-1 - SOIL SAMPLE IDENTIFICATION (FIFTH ROUND)
- E5-1 - SOIL SAMPLE IDENTIFICATION (SIXTH ROUND)
- 28 - LABORATORY ANALYSIS RESULTANT (PPM)

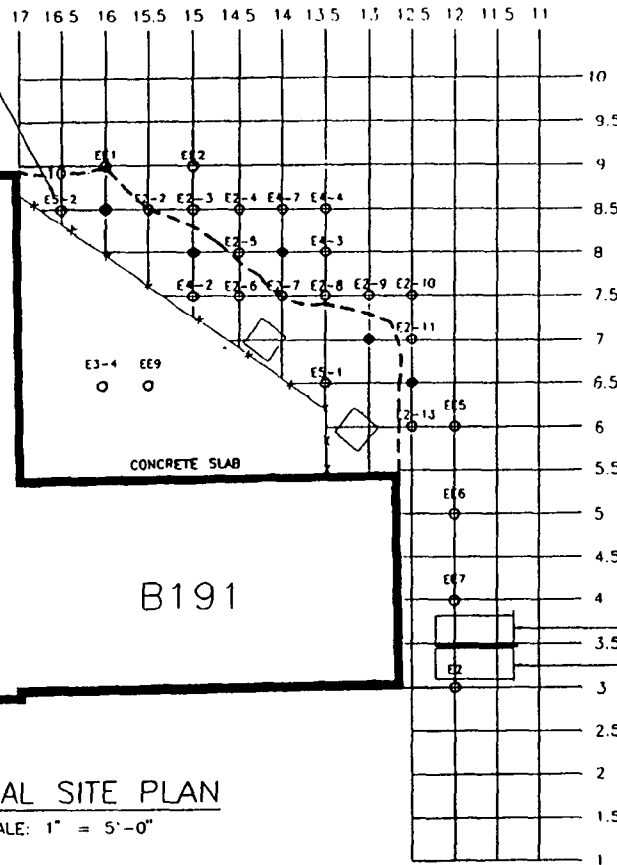
SYMBOLS ;

- - - - - CONTAMINATION CONCENTRATION (PPM)
- SINGLE SOIL SAMPLE LOCATION (SINGLE EXCAVATION)
- MULTIPLE SOIL SAMPLE LOCATION (REFER TO ENLARGED SOIL SAMPLE LOCATIONS)



- B191 - BUILDING
- HANNOLE

PCB CONTAMINATION



B191

CONCRETE

PARTIAL SITE PLAN

SCALE: 1" = 5'-0"

FIGURE 4

PCB SAMPLE LOCATIONS & EXCAVATION AREA

REMEDIATION SITE No. 44
 NAVAL AIR ENGINEERING CENTER
 06-25-91

Jeff G: XTRA COPIES



State of New Jersey
Department of Environmental Protection and Energy
Office of the Commissioner
CN 402
Trenton, NJ 08625-0402
Tel. # 609-292-2885
Fax. # 609-984-3962

CS-6

Muszynski

U. Callahan

Scott A. Weiner
Commissioner

December 30, 1991

Captain David Raffetto, Commander
Lakehurst Naval Air Engineering Center
Lakehurst, NJ 09733-5000

Dear Captain Raffetto:

Re: Record of Decision
Lakehurst NAEC, Site 44
Jackson and Manchester Townships, Ocean County, New Jersey

This is to formally notify the United States Navy that the New Jersey Department of Environmental Protection and Energy (NJDEPE) has evaluated the selected remedy for Site 44 at Lakehurst Naval Air Engineering Center Superfund Site and concurs with the remedy as stated in the Record of Decision.

The Record of Decision documents the selection of the "no action" alternative for this site. It was determined that no additional remedial action is necessary at this site to ensure the protection of human health and the environment.

New Jersey fully appreciates the importance of the Record of Decision in the cleanup process and will continue to take all reasonable steps to ensure that the State's commitments in this area are met.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott A. Weiner".

Scott A. Weiner
Commissioner

SAW:DG:kj

c: Mr. Constantine Sidamon-Eristoff, USEPA/Region II

U.S.E.P.A.
92 JAN -8 PM 3:15
OFF. OF POLICY & MGMT.