RECORD OF DECISION
SITE 1 SOIL
OPERABLE UNIT 1 (OU 1)

NAVAL AIR STATION
JOINT RESERVE BASE
Willow Grove, Pennsylvania

Naval Facilities Engineering Command
Mid-Atlantic

Contract Number N62472-03-D-0057

Contract Task Order 003

SEPTEMBER 2006

TETRA TECH NUS, INC.

TABLE OF CONTENTS

PART I—DECLARATION

PART II—DECISION SUMMARY

TABLE OF CONTENTS (Continued)

PART III—RESPONSIVENESS SUMMARY

TABLES

FIGURES

APPENDICES

RECORD OF DECISION
NAVAL AIR STATION JOINT RESERVE BASE
OPERABLE UNIT 1
SITE 1—PRIVET ROAD COMPOUND SOIL

PART I—DECLARATION

I. SITE NAME AND LOCATION

Naval Air Station Joint Reserve Base (NAS JRB)
Site 1—Privet Road Compound
Horsham Township, Montgomery County
Pennsylvania
ID Number: PA4170000158

II. STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the remedial action alternative selected for Operable Unit 1 (OU 1), soils contaminated with polychlorinated biphenyl (PCB) compounds at Site 1, the Privet Road Compound, at the Naval Air Station Joint Reserve Base (NAS JRB), located in Horsham Township, Montgomery County, Pennsylvania.

This remedial action decision is made in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document explains the factual and legal basis for selecting the remedial action and is based on the Administrative Record for OU 1. Reports and other information used in the remedy selection process are part of the Administrative Record file for OU 1, which is available at the Horsham Township Library, 435 Babylon Road, Horsham, Pennsylvania. The Information Repository had been housed at the Horsham Township Municipal Building on Horsham Road prior to moving to the Horsham Township Public Library on Babylon Road in 2004

The Commonwealth of Pennsylvania Department of Environmental Protection (PADEP) has commented on the selected remedy and concurs. PADEP comments have been incorporated into this ROD. A review of the public response to the OU 1 Proposed Plan is included in the Responsiveness Summary (Part III) of this decision document.

III. DESCRIPTION OF THE SELECTED REMEDY

No further action is to be taken to address soil at the Privet Road Compound.

IV. STATUTORY DETERMINATIONS

The selected remedy for Site 1 is protective of human health and the environment and is cost effective. The Navy and USEPA believe that the selected remedy complies with all federal and state applicable or relevant and appropriate requirements (ARARs). No further action is needed or proposed for Site 1 soil.

Authorizing Signatures

Lead Agency:

Robert F. Lewandowski,
BRAC Environmental Coordinator
Naval Air Station Joint Reserve Base, Willow Grove
BRAC Program Management Office, Northeast

9/27/06
Date

Environmental Protection Agency:

Abraham Ferdas, Director
Hazardous Site Cleanup Division
U.S. EPA Region III

9/29/06
Date

RECORD OF DECISION
Naval Air Station Joint Reserve Base (NAS JRB)
Site 1—The Privet Road Compound
Willow Grove, Pennsylvania

PART II—DECISION SUMMARY

I. SITE NAME, LOCATION, AND DESCRIPTION

NAS JRB Willow Grove is located in Horsham Township, Montgomery County, in southeastern Pennsylvania, approximately 20 miles north of the city of Philadelphia (Figure 1). NAS JRB Willow Grove occupies approximately 1,000 acres of the 1,200 acres maintained by the Department of Defense (DoD) at the Air Station. The Willow Grove Air Reserve Station (ARS) occupies approximately 200 acres of land in the northeastern section of the Air Station and shares common facilities with NAS JRB Willow Grove. The Air Station is comprised of flat to slightly rolling terrain and is generally bounded by State Route 611 to the east, State Route 463 to the southwest, and Keith Valley Road to the north. Figure 2 shows the location of Site 1 at NAS JRB Willow Grove.

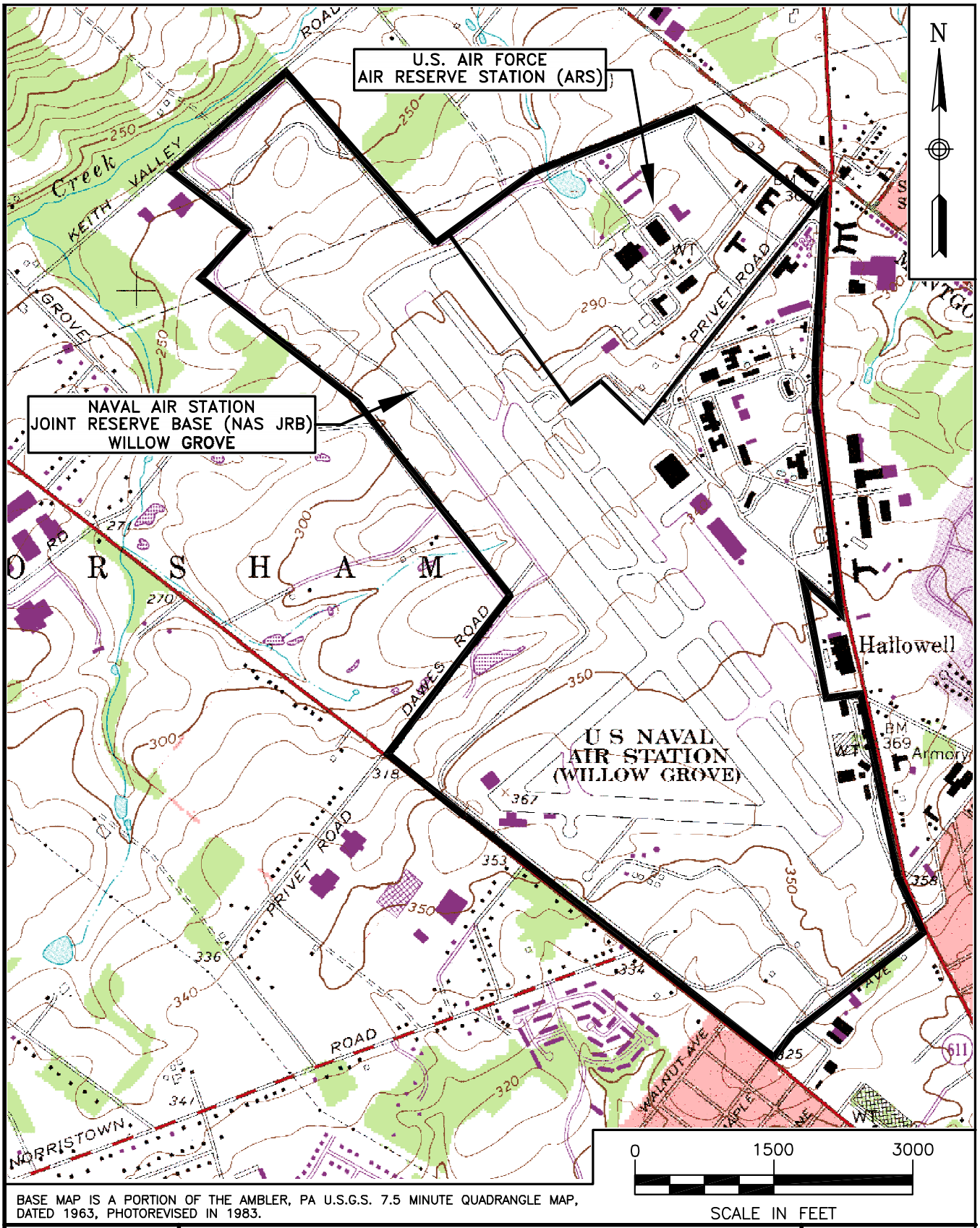
The Privet Road Compound (Figure 3) is a fenced area that is approximately one half of an acre in size located north of the Base Bowling Alley, adjacent to Privet Road, and the ARS and Pennsylvania Air National Guard facilities.

II. SITE HISTORY AND ENFORCEMENT ACTIVITY

The compound was constructed to serve as a transfer station for wastes after closure of the Ninth Street Landfill in 1967. The compound operated between 1967 and 1975 and was used as an open disposal area where wastes were burned and buried. The compound was also used to store several PCB-containing electrical transformers. Use of the site as a transfer station and for transformer storage resulted in the contamination of soil.

Work undertaken pursuant to CERCLA at NAS JRB Willow Grove includes the Preliminary Assessment (PA), also known as the Initial Assessment Study (IAS), (Naval Energy and Environmental Support Activity (NEESA), 1986); Site Inspection (SI) (EA, 1990); the first- and second-phase Remedial Investigation (RI) (Halliburton NUS, 1993; Brown & Root Environmental, 1998); and a soil removal action (FWENC, 1999). The PA identified 16 sites requiring further investigation: seven at the Air Reserve Facility in 1984 and nine at the Naval Air Station in 1986 (NEESA, 1986). One additional site was added to the program in 1988 (EA

2192 WillowGrove\1201\2192CM02-1.DWG 01/06/05 MKB



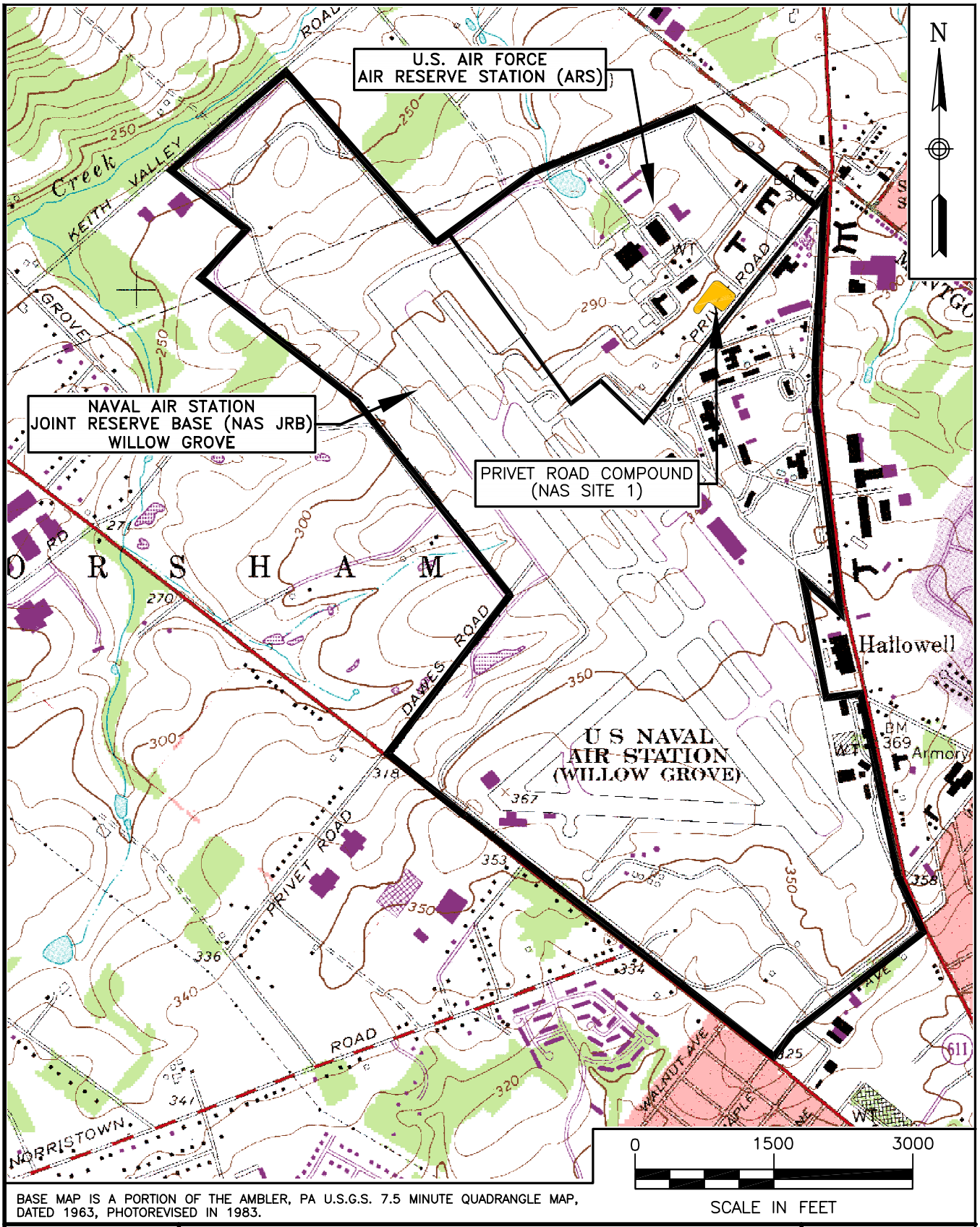
BASE MAP IS A PORTION OF THE AMBLER, PA U.S.G.S. 7.5 MINUTE QUADRANGLE MAP, DATED 1963, PHOTOREVISED IN 1983.

TETRA TECH NUS, INC.

LOCATION MAP
NAS JRB WILLOW GROVE
WILLOW GROVE, PENNSYLVANIA

SCALE	AS NOTED
FILE	2192CM02-1
REV	0
DATE	01/06/05
FIGURE NUMBER	FIGURE 1

2192 WillowGrove\1201\2192CM02-2.DWG 01/06/05 MKB



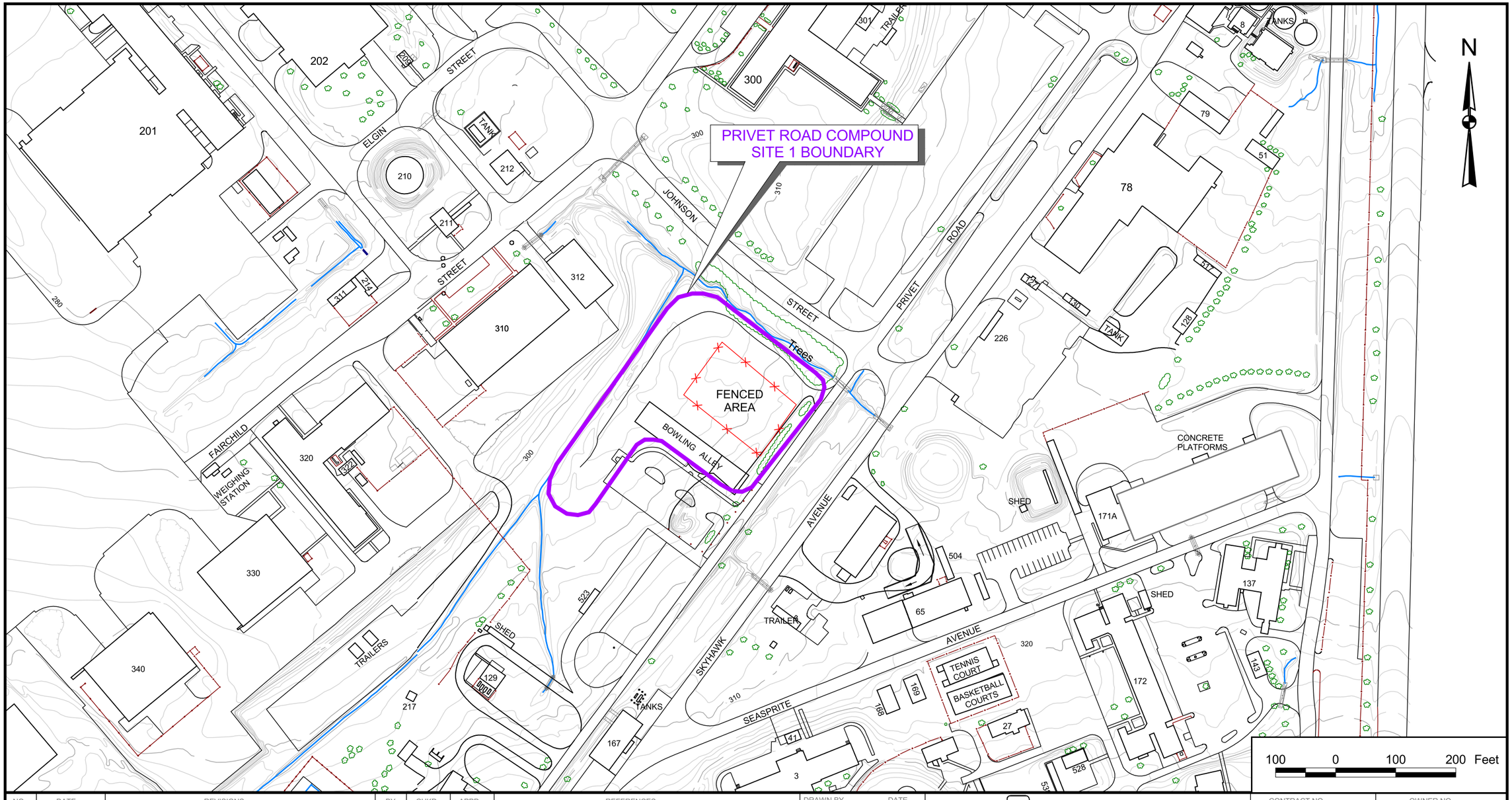
BASE MAP IS A PORTION OF THE AMBLER, PA U.S.G.S. 7.5 MINUTE QUADRANGLE MAP, DATED 1963, PHOTOREVISED IN 1983.

TETRA TECH NUS, INC.

LOCATION OF SITE 1 PRIVET ROAD COMPOUND
NAS JRB WILLOW GROVE
WILLOW GROVE, PENNSYLVANIA

SCALE	AS NOTED
FILE	2192CM02-2
REV	0
DATE	01/06/05
FIGURE NUMBER	FIGURE 2

2192 WillowGrove\1201\SITE-1 FIGURE 3.APR\FIGURE 3 01/06/05 MKB PHL



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY MKB	DATE 05/06/04
CHECKED BY ___	DATE 05/06/04
COST/SCHED-AREA	
SCALE AS NOTED	

Tetra Tech NUS, Inc.

SITE FEATURES
NAS JRB SITE 1 - PRIVET ROAD
NAS JRB WILLOW GROVE
WILLOW GROVE, PENNSYLVANIA

CONTRACT NO. 2192	OWNER NO. CTO 003
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3	REV.

Engineers and Science, 1990). SI work was performed on 12 of the 17 sites and Remedial Investigation/Feasibility Study (RI/FS) activities have subsequently been completed or are underway at eight sites. Phase I RI activities have been completed for four sites (Halliburton NUS, 1993). The Phase I RI report characterized the physical and chemical nature of these four sites and identified data gaps requiring further study. Recommendations for further investigation included in the Phase I RI report were incorporated into subsequent discussions among the Navy and regulatory agencies for additional work and led to the Phase II activities that were reported in the Phase II RI report (Brown & Root Environmental, 1998).

The final Site 1 RI report (TtNUS, 2002) explains that leakage from PCB-containing transformers stored at the Privet Road Site produced an area of surface and subsurface soils contaminated with PCBs. PCBs, mainly Aroclor 1260, were detected in surface and subsurface soil samples at concentrations up to 230,000 µg/kg (230 parts per million (ppm)), in excess of health-based levels. Limited migration of PCBs had occurred, as evidenced by one detection in surface water sediment receiving drainage from the site over the period of approximately 18 years since the stored transformers were reported removed from the site. Also, concentrations of chlorinated compounds were found in groundwater beneath Site 1 in excess of MCLs. Groundwater beneath the site (OU 3) is being managed separately from soil issues.

Based on the Site 1 Soil Action Memorandum (EFANE, 1999), the Navy performed a removal action in June 1999, which excavated approximately 1,200 tons of PCB-contaminated soils from the area near the bowling alley located on the Privet Road Compound Area. Soil excavation was carried out in three stages until post-excavation confirmation sampling and laboratory analysis demonstrated successful cleanup to the residential level (one part per million (1 ppm) PCB). The contaminated soil was transported off-site for proper disposal. Clearance sampling confirmed that the area had been cleaned to 1 ppm (FWENC, 1999).

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

Based on the soil removal action performed, and the corresponding Site 1 soil closeout report prepared in 1999 (FWENC, 1999), the Navy prepared the Site 1 Soil Proposed Remedial Action Plan (PRAP) for No Further Action (NFA) in September 2004 (TtNUS, 2004). On September 29, 2004, a newspaper notification inviting public comment on the Proposed Plan appeared in *The Intelligencer* newspaper. The newspaper public notice identified the time and location of the public meeting to learn about the Navy's Proposed Plan and the preferred alternative. A public meeting was held at NAS JRB Willow Grove on October 6, 2004 to present the Site 1 soil NFA PRAP. Copies of the Site 1 Soil PRAP were distributed to interested RAB members, and it was also made available for public review at the public meeting and in the Administrative Record (AR) file for NAS JRB located at the Horsham Township Public Library. In accordance with CERCLA Sections 113(k) and 117(a), a public comment period for the PRAP was held from September 27,

2004, through October 27, 2004. More details about the community involvement in this ROD are described in the Responsiveness Summary, which is Part III of this ROD.

IV. SCOPE AND ROLE OF SITE 1 SOIL (OU 1)

As with many Superfund sites, the issues at Site 1 are unique. In this case, the problem of PCB contamination in the shallow soil (OU 1) was not related to the chlorinated contaminants in groundwater (OU 3). As a result, the Navy and EPA with agreement from PADEP organized the response into two operable units:

- Operable Unit 1: Contamination of on-site soil
- Operable Unit 3: Contamination of the groundwater

Site 1 soil (OU 1) is the subject of this ROD. The PCB soil removal action performed in 1999, followed by the Site 1 soil NFA PRAP, that was accepted by the public and regulatory agencies in October 2004, are the basis for this Site 1 Soil NFA ROD. Based on the results of actions taken to date, Site 1 soil does not require further remedial action. OU 3, contamination of groundwater beneath Site 1, will be resolved in accordance with CERCLA and applicable federal and state guidelines.

Other sites at NAS JRB Willow Grove identified as part of the National Priorities List (NPL) site include:

- Site 2—Antenna Field Landfill (OU 5—Site 2 soil; OU 9—Site 2 groundwater)
- Site 3—Ninth Street Landfill (OU 6—Site 3 soil; OU 10—Site 3 groundwater)
- Site 5—Fire Training Area (OU 2—Site 5 groundwater; OU 4—Site 5 soil)

Sites 2, 3, and 5 are in the RI/FS phase of the CERCLA process. At Site 5, a soil removal action (OU 4) is underway.

Two other sites at the Air Station have been assigned operable unit designations by EPA (OU 8—Navy Fuel Farm and OU 7—Air Force Site 1 Ponding Basin). For OU 8, PADEP is the lead regulatory agency because the contamination source is petroleum, which is excluded from CERCLA. For OU 7, the Air Force is the lead agency.

V. SUMMARY OF SITE CHARACTERISTICS

A. Hydrology

Although a significant portion of the ground surface in the area is covered by impermeable paving material, much of the precipitation during normal weather conditions is believed to infiltrate the soil, due to the

relatively gentle slope, intermittent vegetated areas, and the rutted and uneven nature of the ground surface in the compound area. Storm drainage swales parallel the northeastern and southeastern sides of the compound and intersect at the northern corner of the site. Runoff is prevented from entering the site from the south by grading and a storm drainage channel located along the southern side of Privet Road. Runoff from the compound that enters the drainage swales discharges to the Air Reserve Station storm water detention basin. Water flow from the storm water detention basin follows an unnamed tributary to Park Creek and enters the Little Neshaminy Creek drainage basin.

B. Geology

The geologic interpretation of the Privet Road Compound is based on the subsurface data (boring logs and geophysical logs obtained during previous site investigations (TtNUS, 2002). The local geology beneath the site is generally consistent with the regional geology discussed in the Remedial Investigation Report for Site 1—The Privet Road Compound (TtNUS, 2002).

Soil and well borings taken during the RI consistently encountered a variably thick overburden section underlain by weathered sandstone. The overburden consisted of sandy silt, silty sand, and silty clay. The thickness of the overburden (or the depth to the top of the weathered bedrock) ranged from approximately 4 feet in the vicinity east of Privet Road (near monitoring well 01MW04) to about 9 feet in the northeastern corner of the compound (near monitoring well 01MW01). Gravel-rich fill material was encountered within 2 feet of the surface at most locations within the former compound but was not encountered beyond the limits of the suspected waste area.

The maximum depth of the monitoring well boreholes at Site 1 is 100 feet. The bedrock to this depth typically consisted of alternating sequences of siltstone and fine- to medium-grained sandstone. Thin beds of shale and claystone were inconsistently encountered within the compound and the northern portion of the site area. In general, the bedrock lithology beneath Site 1 was more variable than that seen at the other sites investigated during this multi-site remedial investigation. That is, thin and vertically alternating sequences of sandstone, siltstone, and shale (or claystone) were typically encountered, rather than thick vertical sequences generally consisting of only one dominant lithology.

Driller's boring logs for Navy Supply Well No. 1 (396 feet deep) and Navy Supply Well No. 2 (351 feet deep) and the results of the borehole geophysical logging program (USGS, 2001) indicate that the lithology below the depth of investigation of the monitoring well network also is consistent with the regional geology and is generally similar to the lithology described from the shallower monitoring well boreholes. Overall, the rock becomes somewhat coarser grained with increasing subsurface depth, and the thickness of the individual lithologic units generally increases, especially below a subsurface depth of about 200 feet.

C. Hydrogeology

The sandstones, shales, and conglomerates of the Triassic Basin are relatively good water-bearing formations. They generally yield abundant supplies to wells (Hall, 1934). The groundwater ranges from soft to hard, and the average hardness is greater than that of most other formations in southeastern Pennsylvania.

The major source of groundwater in the vicinity of NAS JRB Willow Grove is the fractured bedrock of the Stockton Formation (Earth Data Incorporated, 1985). These rocks form a multi-aquifer system of relatively discrete water-bearing zones separated by less permeable zones. Transmissivity and groundwater movement within water-bearing zones are greater parallel to bedding than across bedding. Groundwater can generally be found between 5 and 25 feet below ground surface (bgs).

The groundwater in the area of the Privet Road Compound exists under both unconfined and confined aquifer conditions. Under non-pumping conditions, the hydraulic head within the confined aquifer is higher and the vertical gradient between the two aquifers is oriented upward. Under pumping conditions, the hydraulic head of the confined aquifer within the vicinity of the compound is eventually lowered to a level below the hydraulic head of the unconfined aquifer, which reverses the hydraulic gradient and may induce groundwater flow into the confined aquifer. This reversal of vertical hydraulic gradient does not occur downgradient (northwest) of the compound.

D. Nature and Extent of Contamination

Remedial investigation results of Site 1 soil samples, which were taken before the soil removal, indicated concentrations of three metals, arsenic, iron, and manganese, at levels above background concentrations and human health screening levels. The maximum concentrations detected of each of the metals was 16.2 mg/kg, 27,300 mg/kg, and 643 mg/kg, respectively. PCBs, mainly as Aroclor 1260, were encountered in surface and subsurface soil at concentrations up to 230,000 µg/kg (230 ppm), which is above human health screening levels.

In June 1999, the Navy performed a removal action, which excavated approximately 1,200 tons of PCB-contaminated soils from the area near the bowling alley located on the Privet Road Compound Area. Soil excavation was carried out in three stages until post-excavation confirmation sampling and laboratory analysis demonstrated successful cleanup to the residential level of 1 ppm PCB. The contaminated soil was

transported off-site for proper disposal. Clearance sampling confirmed that the area had been cleaned to 1 ppm of PCB (FWENC, 1999).

VI. SUMMARY OF SITE RISKS

A. Baseline Human Health Risk Assessment

A screening-level human health risk evaluation was performed as part of the Phase II Remedial Investigation undertaken in 1998 (Brown & Root Environmental, 1998). The risk evaluation for Site 1 Soil was undertaken before the 1999 removal action. Surface soil concentrations were compared to residential Region 3 EPA risk-based concentrations (RBC) to be protective of all receptors exposed to surface soil. Subsurface soil concentrations were compared to industrial RBCs since, generally, only industrial receptors are expected to be exposed to subsurface soils during excavation or construction activities. However, in this instance, comparison of subsurface chemical concentrations to residential RBCs generates the same list of COPCs as the comparison to industrial RBCs. Using the RBC screening approach, a chemical was eliminated from consideration as a chemical of potential concern (COPC) at the site if the maximum detected concentration was less than the RBC screening value, at a cancer risk level of 1×10^{-6} or less or a non-cancer Hazard Quotient (HQ) of 0.1 or less, or if site concentrations were not significantly greater than background (inorganics only). The screening-level human health risk evaluation indicated potential risks in surface and subsurface soils above acceptable levels. A summary of the selected COPCs is presented in Table 1.

The potential receptors included current occupational workers, current adolescent and adult trespassers, future excavation workers, future recreational children, and future residents. The risk evaluation assumed that potential human receptors would be exposed to COPCs at Site 1 via incidental ingestion, dermal contact, and inhalation of fugitive dusts from soil.

The quantitative risk assessment evaluated each potential receptor under a reasonable maximum exposure (RME) and a less conservative central tendency exposure (CTE) scenario. RME incorporates input parameters into the exposure scenarios that are protective of 90 to 95 percent of the population, and CTE incorporates input parameters that are representative of an average or median exposure scenario.

Excess lifetime cancer risks were determined for each receptor by multiplying a daily dose with the chemical-specific cancer slope factor. Cancer slope factors have been developed by EPA from epidemiological or animal studies to reflect a conservative "upper bound" of the risk posed by potentially

Table 1
Summmary of Chemicals of Potential Concern Evaluated in the Human Health Risk Assessment
Site 1 - NASJRB Willow Grove

Substance	Frequency of Site-Related Detection	Minimum Range of Positive Detections for Site		Maximum Range of Positive Detections for Site	Representative Concentration	Units
Surface Soil						
1,2,3,4,6,7,8-HPCDD	6/6	0.0647	-	0.136	0.13	ug/kg
1,2,3,4,6,7,8-HPCDF	6/6	0.0048	-	0.321	0.236	ug/kg
1,2,3,4,7,8,9-HPCDF	5/6	0.0063	-	0.19	0.19	ug/kg
1,2,3,4,7,8-HXCDD	4/6	0.0015	-	0.0021	0.0019	ug/kg
1,2,3,4,7,8-HXCDF	6/6	0.0026	-	0.374	0.374	ug/kg
1,2,3,6,7,8-HXCDD	5/6	0.0017	-	0.0051	0.00505	ug/kg
1,2,3,6,7,8-HXCDF	5/6	0.0017	-	0.0248	0.0179	ug/kg
1,2,3,7,8,9-HXCDD	6/6	0.0027	-	0.0129	0.0109	ug/kg
1,2,3,7,8,9-HXCDF	3/6	0.00055	-	0.009	0.009	ug/kg
1,2,3,7,8-PECDF	4/6	0.003	-	0.0049	0.00431	ug/kg
2,3,4,6,7,8-HXCDF	6/6	0.0011	-	0.0136	0.011	ug/kg
2,3,4,7,8-PECDF	5/6	0.0023	-	0.0142	0.0116	ug/kg
2,3,7,8-tetrachlorodibenzofuran	5/6	0.0015	-	0.0076	0.00677	ug/kg
octachlorodibenzo-p-dioxin	6/6	4.58	-	15.59	12.2	ug/kg
octachlorodibenzofuran	6/6	0.009	-	0.815	0.636	ug/kg
aluminum	13/13	9470	-	22000	18200	mg/kg
arsenic	13/13	2	-	16.2	9.52	mg/kg
cadmium	5/13	1.6	-	5.8	2.55	mg/kg
iron	13/13	18600	-	33300	27300	mg/kg
dieldrin	1/13	77	-	77	77	ug/kg
total pcbs	54/64	550	-	230000	52700	ug/kg
benz(a)anthracene	3/6	35	-	1300	1300	ug/kg
benzo(a)pyrene	3/6	40	-	1200	1200	ug/kg
benzo(b)fluoranthene	2/6	440	-	1500	1500	ug/kg
benzo(k)fluoranthene	2/6	260	-	770	589	ug/kg
chrysene	3/6	52	-	1400	1400	ug/kg
dibenz(a,h)anthracene	2/6	43	-	290	252	ug/kg
indeno(1,2,3-cd)pyrene	2/6	160	-	1100	944	ug/kg
Subsurface Soil						
aluminum	59/59	5910	-	24500	16000	mg/kg
arsenic	45/59	0.9	-	16	5.29	mg/kg
iron	59/59	12900	-	35400	25400	mg/kg
pcbs (tot. all)	19/84	11	-	5800	302	ug/kg

carcinogenic compounds. Pursuant to 40 CFR Section 300.430 (e)(2)(i)(A)(*2*), EPA's maximum acceptable carcinogen risk range for site-related exposure is $1x\ 10^{-6}$ to 1×10^{-4}.

Non-carcinogenic risks are presented in the form of an HQ and Hazard Index (HI), which are determined by dividing the daily dose by the published reference doses (RfDs). RfDs have been developed by EPA and represent a level to which an individual may be exposed that is not expected to result in any deleterious effect. An HQ less than or equal to 1.0 indicates that a receptor's dose of a single contaminant is less than the RfD and that adverse non-carcinogenic effects from that chemical are unlikely. The HQs for each COPC that the receptor is assumed to be exposed to via a specific pathway are summed to yield the HI for that pathway. A total HI is then calculated for each receptor by summing the pathway-specific HIs.

The results of the risk assessment, which was undertaken before the 1999 removal action, showed that the estimated RME carcinogenic risks for the current occupational worker (1.20×10^{-4}) and future resident (4.34×10^{-4}) exceeded the EPA's acceptable risk range of 1×10^{-6} to 1×10^{-4}. The principle COPCs contributing to this cancer risk were arsenic, total PCBs, and benzo(a)pyrene in surface soil.

Potential non-carcinogenic risks before the soil removal action under the current and future scenarios were below an HI of 1.0, except for under the future residential child scenario, which exceeded the acceptable level with an RME HI of 2.28 and a CTE HI of 1.35. The principle COPC contributing to the non-carcinogenic risk was iron in surface soil.

In June of 1999 the Navy performed a soil removal action for PCB-contaminated soil followed by subsequent confirmatory sampling to ensure all soils containing PCBs in excess of one ppm had been removed. The carcinogenic human health risk assessment was recalculated using the confirmatory sampling results to demonstrate that human health risk was reduced (TtNUS, 2002).

Table 2 lists the estimated RME and CTE carcinogenic risks for current occupational workers, current trespassers, future recreational children, future excavation workers, and future adult residents after PCB-contaminated soils were removed. After accounting for the PCB-contaminated soil removal, the revised calculated RME carcinogenic risks for the current occupational worker (2.79×10^{-5}), current trespasser (5.48×10^{-6}), future recreational child (1.03×10^{-6}), and future excavation worker (5.18×10^{-7}) were all less than or within the carcinogenic risk range designated as acceptable under the NCP at 40 CFR 300.430(e)(2)(i)(A)(*2*). The revised calculated RME carcinogenic risk for the future resident was 1.15×10^{-4}, which slightly exceeds the upper bound of the risk range from the NCP; however, the CTE carcinogenic risk for a future resident was 2.49 x 10-5, which is within the acceptable risk range from the NCP. In addition, when the risk assessment analysis was updated to determine the risk posed by the soil

Table 2
Summary of Cancer Risks - After Soil Removal
Site 1 - NASJRB Willow Grove

Reasonable Maximum Exposure

Media	Estimated Cancer Risk Current Occupational Worker				Estimated Cancer Risk Current Trespasser				Estimated Cancer Risk Future Recreational Child			
	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total
Surface Soil, TOTAL RISK:	7.87E-06	2.01E-05	7.16E-09	2.79E-05	2.60E-06	2.87E-06	5.92E-10	5.48E-06	6.95E-07	3.33E-07	7.90E-11	1.03E-06
Subsurface Soil, TOTAL RISK:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GROUP TOTAL:	**7.87E-06**	**2.01E-05**	**7.16E-09**	**2.79E-05**	**2.60E-06**	**2.87E-06**	**5.92E-10**	**5.48E-06**	**6.95E-07**	**3.33E-07**	**7.90E-11**	**1.03E-06**

Media	Estimated Cancer Risk Future Excavation Worker				Estimated Cancer Risk Future Resident			
	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total
Surface Soil, TOTAL RISK:	3.62E-07	9.63E-08	1.03E-10	4.59E-07	7.05E-05	4.41E-05	4.41E-08	1.15E-04
Subsurface Soil, TOTAL RISK:	4.73E-08	1.19E-08	2.59E-11	5.92E-08	NA	NA	NA	NA
GROUP TOTAL:	**4.09E-07**	**1.08E-07**	**1.29E-10**	**5.18E-07**	**7.05E-05**	**4.41E-05**	**4.41E-08**	**1.15E-04**

Central Tendency Exposure

Media	Estimated Cancer Risk Current Occupational Worker				Estimated Cancer Risk Current Trespasser				Estimated Cancer Risk Future Recreational Child			
	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total
Surface Soil, TOTAL RISK:	2.83E-06	7.22E-06	2.58E-09	1.01E-05	1.72E-07	3.31E-07	7.82E-11	5.03E-07	1.16E-07	1.10E-07	2.63E-11	2.26E-07
Subsurface Soil, TOTAL RISK:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GROUP TOTAL:	**2.83E-06**	**7.22E-06**	**2.58E-09**	**1.01E-05**	**1.72E-07**	**3.31E-07**	**7.82E-11**	**5.03078E-07**	**1.16E-07**	**1.10E-07**	**2.63E-11**	**2.26E-07**

Media	Estimated Cancer Risk Future Excavation Worker				Estimated Cancer Risk Future Resident			
	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total
Surface Soil, TOTAL RISK:	1.81E-07	4.81E-08	5.16E-11	2.29E-07	1.13E-05	1.35E-05	1.96E-08	2.49E-05
Subsurface Soil, TOTAL RISK:	2.36E-08	5.95E-09	1.29E-11	2.96E-08	NA	NA	NA	NA
GROUP TOTAL:	**2.05E-07**	**5.41E-08**	**6.45E-11**	**2.59E-07**	**1.13E-05**	**1.35E-05**	**1.96E-08**	**2.49E-05**

Notes:
NA -- Not Applicable

after removal of the PCBs, the reduction in other contaminants driving the risk calculation, such as arsenic and benzo-a-pyrene, which had also been removed with the PCB-contaminated soil, was not included in the calculations. Moreover, the site of the removal was backfilled with clean fill. Thus, the realistic risk posed by the soil to the future resident is less than the RME risk calculated.

The non-carcinogenic human health risk assessment was recalculated post-excavation using the confirmatory sampling results (FWENC, 1999). However, for the non-carcinogenic risk estimate, there was little difference in the total risk under each exposure scenario compared to before the soil removal because iron was the principle COPC. Table 3 lists the estimated RME and CTE non-carcinogenic risks for current occupational workers, current trespassers, future recreational children, future excavation workers, and future adult residents before PCB-contaminated soils were removed.

Potential future exposure to combined surface and subsurface soil by a child resident may result in a potential noncarcinogenic hazard above USEPA's target hazard index of 1, primarily due to ingestion of iron. The CTE noncarcinogenic hazard is slightly above USEPA's target HI. Although the potential RME hazards are associated with naturally occurring constituents, the concentrations of iron detected in the Site 1 soil are greater than the concentrations of iron in the background dataset (TtNUS, 2002). However, iron is an essential human nutrient, which complicates the derivation of a reference dose (USEPA, 1999). The reference dose is the toxicity factor used, along with the intake (amount of soil ingested and taken into the body through dermal contact), to calculate the noncarcinogenic hazard index. The estimated RME intake of iron via incidental ingestion of Site 1 soil (6.3 mg/day or 0.40 mg/kg-day) is within the recommended dietary allowance (RDA) range of iron for children ages 6 months to 10 years (10 mg/day or 0.36 to 1.11 mg/kg-day) (USEPA, 1999). As a comparison, children's vitamins typically contain 18 mg of iron. Also the tolerable upper-limit intake level (the maximum level of daily intake that is likely to pose no risk of adverse effects) for iron is 40 mg/day (National Academy of Sciences, 2006). Therefore, the concentration of iron in Site 1 soil is not unacceptable for ingestion by future child residents under conservative exposure scenario assumptions.

B. Ecological Risk Assessment

A screening-level ecological risk assessment (ERA) was performed to characterize the potential risks from site-related contaminants to ecological receptors that inhabit the installation (TtNUS, 2002). All analytes detected in surface soil samples collected during the 1991 Phase I and 1997 Phase II sampling activities were assessed in this investigation. However, calcium, magnesium, potassium, and sodium were excluded in the screening process since they are essential nutrients that are toxic only at extremely high concentrations.

Table 3
Summary of Non-cancer Risks - Before Soil Removal
Site 1 - NASJRB Willow Grove

Reasonable Maximum Exposure

Exposure Medium	Estimated Hazard Index Current Occupational Worker				Estimated Hazard Index Current Adult Trespasser				Estimated Hazard Index Current Adolescent Trespasser				Estimated Hazard Index Future Residential Child			
	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total
Site 01																
Surface Soil, TOTAL RISK:	7.10E-02	1.19E-01	NT	1.90E-01	1.36E-02	1.14E-02	NT	2.51E-02	2.98E-02	2.95E-02	NT	5.93E-02	1.85E+00	4.25E-01	NT	2.28E+00
Subsurface Soil, TOTAL RISK:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GROUP TOTAL:	**7.10E-02**	**1.19E-01**	**NT**	**1.90E-01**	**1.36E-02**	**1.14E-02**	**NT**	**2.51E-02**	**2.98E-02**	**2.95E-02**	**NT**	**5.93E-02**	**1.85E+00**	**4.25E-01**	**NT**	**2.28E+00**

Exposure Medium	Estimated Hazard Index Future Recreational Child				Estimated Hazard Index Future Excavation Worker				Estimated Hazard Index Future Residential Adult			
	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total
Site 01												
Surface Soil, TOTAL RISK:	2.61E-02	NT	2.08E-06	2.61E-02	8.17E-02	1.43E-02	NT	9.60E-02	1.99E-01	1.67E-01	NT	3.65E-01
Subsurface Soil, TOTAL RISK:	NA	NA	NA	NA	6.67E-02	8.37E-03	NT	7.50E-02	NA	NA	NA	NA
GROUP TOTAL:	**2.61E-02**	**NT**	**2.08E-06**	**2.61E-02**	**1.48E-01**	**2.27E-02**	**NT**	**1.71E-01**	**1.99E-01**	**1.67E-01**	**NT**	**3.65E-01**

Central Tendency Exposure

Exposure Medium	Estimated Hazard Index Current Occupational Worker				Estimated Hazard Index Current Adult Trespasser				Estimated Hazard Index Current Adolescent Trespasser				Estimated Hazard Index Future Residential Child			
	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total
Site 01																
Surface Soil, TOTAL RISK:	7.10E-02	1.19E-01	NT	1.90E-01	3.41E-03	5.72E-03	NT	9.12E-03	7.45E-03	1.51E-02	NT	2.26E-02	9.27E-01	4.21E-01	NT	1.35E+00
Subsurface Soil, TOTAL RISK:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GROUP TOTAL:	**7.10E-02**	**1.19E-01**	**NT**	**1.90E-01**	**3.41E-03**	**5.72E-03**	**NT**	**9.12E-03**	**7.45E-03**	**1.51E-02**	**NT**	**2.26E-02**	**9.27E-01**	**4.21E-01**	**NT**	**1.35E+00**

Exposure Medium	Estimated Hazard Index Future Recreational Child				Estimated Hazard Index Future Excavation Worker				Estimated Hazard Index Future Residential Adult			
	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total	Ingestion	Dermal Contact	Inhalation	Total
Site 01												
Surface Soil, TOTAL RISK:	1.31E-02	NT	2.08E-06	1.31E-02	4.09E-02	7.15E-03	NT	4.80E-02	9.93E-02	1.67E-01	NT	2.66E-01
Subsurface Soil, TOTAL RISK:	NA	NA	NA	NA	3.33E-02	4.19E-03	NT	3.75E-02	NA	NA	NA	NA
GROUP TOTAL:	**1.31E-02**	**NA**	**2.08E-06**	**1.31E-02**	**7.42E-02**	**1.13E-02**	**NT**	**8.55E-02**	**9.93E-02**	**1.67E-01**	**NT**	**2.66E-01**

Notes:

NA -- Not considered applicable
NT -- No toxicity factor
NC -- No COPC's selected
CTE -- Central Tendency Exposure
RME -- Reasonable Maximum Exposure

Initial screening levels for soil organisms consisted of primarily EPA Region 3 Biological Technical Assistance Group (BTAG) screening levels, Oak Ridge National Laboratory surface soil screening levels, and Dutch "B" levels that represent ecological toxicity endpoints.

Aluminum, arsenic, cadmium, chromium, iron, lead, manganese, mercury, thallium, vanadium, and zinc were retained as inorganic COPCs in soil since their maximum concentrations exceeded screening levels. Aroclor 1260, total PCBs, total PAHs, and pyrene were retained as organic COPCs in soils since their maximum concentrations exceeded screening levels. In addition, 1,2,4-trichlorobenzene, 2-methylnaphthalene, and the VOCs acetone and chloroform were retained as organic COPCs since no screening levels were available. Table 4 shows the results of the selection of COPCs in surface soil.

In accordance with EPA and Navy policy, and in accordance with discussions with EPA Region 3 BTAG personnel, a portion of Step 3 of the eight-step ERA process (EPA, 1997) was included in the assessment. Step 3a involves the consideration of factors such as background data (mainly for inorganics), toxicological evaluation of COPCs, frequency of detection, and comparisons of COPCs to alternate guidelines.

Almost all of the COPCs were eliminated as chemicals of concern (COCs) in the risk management phase of the assessment for one or more reasons, including low frequency of detection, maximum concentrations comparable to or below background (primarily inorganics), or alternative guidelines and spatial analysis of detection. PCBs were determined to be present at high enough concentrations in soils, and with sufficiently high frequencies of detection, to pose potential risks to terrestrial receptors. Therefore, PCBs were selected as the only COC in soil.

An exposure assumption inherent in the Hazard Quotients shown in Table 4 is that the Privet Road Compound provides habitat that supports ecological receptors, and exposure to site-related contaminants is possible at the site. However, the site lies within a heavily developed section of NAS JRB Willow Grove. Most of the two-acre area where wastes were formerly handled is covered by gravel, a bowling alley, or a parking lot. The remainder of the site consists of largely mowed turf grass, with a small area of occasionally mowed weeds. Although a few ecological receptors utilize the lawn and weedy portions of the site, the developed condition of the site and poor habitat largely preclude the significant use of the site by ecological receptors.

A complete exposure pathway has three components: a source of contaminants that can be released to the environment, a route of contaminant transport through an environmental medium, and an exposure or contact point for an ecological receptor. The absence of terrestrial habitat (other than small areas of turf grass and weedy areas) and the developed condition of the site and surrounding vicinity largely preclude

TABLE 4
SELECTION OF PRELIMINARY CONTAMINANTS OF CONCERN FOR SURFACE SOIL
SITE 1 - NASJRB WILLOW GROVE

Contaminant	Frequency of Detection	Range of Detections		Location of Maximum	Screening Level	Hazard Quotient	Selected as PCOC?
		Minimum	Maximum				
Inorganics (mg/kg)							
Aluminum	13/13	9470.00	22000.00	01SB17-0002	1[1]	22000	Yes
Arsenic	13/13	2.00	16.00	01SB11-0002	10[2]	1.6	Yes
Barium	13/13	59.00	129.00	01SB03-0002	412.5[3]	0.3	No
Cadmium	5/13	2.00	6.00	01SB11-0002	3[2]	2.0	Yes
Chromium	13/13	22.00	37.00	01SB16-0002	10[4]	3.7	Yes
Cobalt	13/13	7.00	12.20	01SB16-0002	130[3]	0.1	No
Copper	13/13	13.00	44.00	01SB12-0002	100[2]	0.4	No
Iron	13/13	18600.00	33300.00	01SB17-0002	12[1]	2750	Yes
Lead	13/13	9.00	149.00	01SB11-0002	50[4]	3.0	Yes
Manganese	13/13	166.00	867.00	01SB03-0002	330.00[1]	2.63	Yes
Mercury	5/13	0.14	0.36	01SB07-0002	0.1[4]	3.6	Yes
Nickel	13/13	12.00	20.00	01SB16-0002	30[2]	0.7	No
Silver	1/13	3.00	3.00	01SB07-0002	9.8E-06[1]	3.1E-05	No
Thallium	6/10	0.25	0.45	01SB17-0002	0.001[1]	450	Yes
Vanadium	13/13	27.00	48.00	01SB17-0002	20[4]	2.4	Yes
Zinc	13/13	39.00	200.00	01SB11-0002	50[4]	4.0	Yes
Pesticides/PCBs (ug/kg)							
PCBs (immunoassay)	46/51	550	25000	01SS23	510[3]	49	Yes
PCBs (total)	54/64	550	230000	01SB03-0002	510[3]	451	Yes
Aroclor-1260	11/16	51	230000	01SB03-0002	51[3]	4510	Yes
Dieldrin	1/13	77.00	77.00	01SB10-0002	100[1]	0.77	No
SVOCs (ug/kg)							
1,2,4-trichlorobenzene	1/6	120.00	120.00	01SS25	NA	NA	Yes
2-methylnaphthalene	1/6	130.00	130.00	01SS25	NA	NA	Yes
Acenaphthene	1/6	66.00	66.00	01SS25	100[1]	0.66	No
Anthracene	1/6	250.00	250.00	01SS25	2050[3]	0.1	No
Benzo(a)anthracene	3/6	35.00	1300.00	01SS25	2050[3]	0.6	No
Benzo(a)pyrene	3/6	40.00	1200.00	01SS25	2050[3]	0.6	No
Benzo(b)fluoranthene	2/6	440.00	1500.00	01SS25	2050[3]	0.7	No
Benzo(g,h,i)perylene	2/6	140.00	960.00	01SS25	2050[3]	0.5	No
Benzo(k)fluoranthene	2/6	260.00	770.00	01SS25	2050[3]	0.4	No
Butylbenzylphthalate	2/6	220.00	270.00	01SS26	3005[3]	0.1	No
Chrysene	3/6	52.00	1400.00	01SS25	2050[3]	0.7	No
Di-n-butylphthalate	2/6	91.00	110.00	01SS25	3005[3]	0.04	No
Dibenz(a,h)anthracene	2/6	43.00	290.00	01SS25	2050[3]	0.1	No
Fluoranthene	3/6	53.00	1800.00	01SS25	2050[3]	0.9	No
Fluorene	1/6	65.00	65.00	01SS25	2050[3]	0.03	No
Indeno(1,2,3-cd)pyrene	2/6	160.00	1100.00	01SS25	2050[3]	0.5	No
Naphthalene	1/6	92.00	92.00	01SS25	2050[3]	0.04	No

TABLE 4
SELECTION OF PRELIMINARY CONTAMINANTS OF CONCERN FOR SURFACE SOIL
SITE 1 - NASJRB WILLOW GROVE

Contaminant	Frequency of Detection	Range of Detections		Location of Maximum	Screening Level	Hazard Quotient	Selected as PCOC?
		Minimum	Maximum				
Phenanthrene	2/6	370.00	1100.00	01SS25	2050[3]	0.5	No
Pyrene	3/6	59.00	2500.00	01SS25	2050[3]	1.2	Yes
Total PAHs	3/6	217.5	14,500	01SS25	4,000[5]	3.6	Yes
VOCs (ug/kg)							
Acetone	3/12	4.00	7.00	PRB-7-0002	NA	NA	Yes
Chloroform	1/13	1.00	1.00	PRB-8-0002	NA	NA	Yes
Dioxins/Furans (ug/kg)							
TCDD Toxicity Equivalents	6/6	0.00955	0.0648	01SB19-0002	10	0.01	No

1. Region III BTAG screening level (EPA, 1995)
2. Will and Suter (1995b)
3. Netherlands (1994)
4. ORNL (1996)
5. ERL for sediment (Longetal, 1995)
6. ERL for sediment (Longetal, 1995)

the use of the site by terrestrial receptors. Aquatic habitat is absent. Thus, these conditions prevent any substantial exposure to soil contaminants. For these reasons, a complete exposure pathway does not exist at the site. Therefore, the potential for ecological impacts from site-related contaminants is negligible. The current conditions at the site are expected to exist throughout the foreseeable future.

Despite the low level of ecological risk posed by site soils, in June of 1999, the Navy performed a soil removal action for PCB-contaminated soil. Subsequent confirmatory sampling was performed to ensure all soils containing PCBs in excess of 1 ppm had been removed. Because there are few receptors, there is only one COC (PCBs) and PCB-contaminated soils have been removed, potential for ecological impacts from site-related contaminants is negligible. Therefore, no further action to remediate site soils is necessary to ensure protection of the environment.

VII. DOCUMENTATION OF SIGNIFICANT CHANGES

No significant changes from the Proposed Plan appear in this ROD.

RECORD OF DECISION
Naval Air Station Joint Reserve Base (NAS JRB)
Site 1 - The Privet Road Compound
Willow Grove, Pennsylvania

PART III - RESPONSIVENESS SUMMARY

The purpose of this Responsiveness Summary is to review public response to the Proposed Plan for Site 1 soil. It also documents the consideration of comments during the decision-making process and provides answers to any comments raised during the public comment period.

The Responsiveness Summary for Site 1 soil is divided into the following sections:

- **Overview** - This section briefly describes the remedial alternative recommended in the Proposed Plan 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 the public comment period.

I. OVERVIEW

This Responsiveness Summary addresses public response to the No Further Action Proposed Plan. The Proposed Plan and other supporting information are maintained for public review in the Administrative Record file for Site 1, which is maintained at the Horsham Township Public Library, 435 Babylon Road, Horsham, Pennsylvania.

II. BACKGROUND ON COMMUNITY INVOLVEMENT

This section provides a brief history of community participation in the investigation and interim remedial planning activities conducted for Site 1. Throughout the investigation period, USEPA and PADEP reviewed work plans and reports and provided comments and recommendations, which were incorporated into appropriate documents. A Technical Review Committee (TRC), consisting of representatives from the Navy, USEPA, the PADEP, and other agencies and local groups surrounding NAS JRB Willow Grove, was formed. The TRC later was transformed into the Restoration Advisory Board (RAB) to include community members, as well as the original officials from the TRC. The RAB has been holding periodic meetings to maintain open lines of communication with the community and to inform all parties of current activities.

On September 29, 2004, a newspaper notification inviting public comment on the Proposed Plan appeared in *The Intelligencer* newspaper. The newspaper public notice identified the time and location of the public meeting to learn about the Navy's Proposed Plan and the preferred alternative. At the public meeting, the Navy specified a public comment period as well as the address to which written comments could be sent. Public comments were accepted from September 27, 2004 to October 27, 2004. At the public meeting, the Navy explained that a copy of the Proposed Plan, along with the entire Administrative Record (AR) file, was available for public review at the Navy's Information Repository. The Information Repository had been housed at the Horsham Township Municipal Building on Horsham Road prior to moving to the Horsham Township Public Library on Babylon Road in 2004.

The public meeting was held on October 6, 2004 at 6:00 PM at Building 1, NAS JRB Willow Grove, Pennsylvania. At this meeting, representatives from the Navy, USEPA and PADEP were available to answer questions concerning Site 1 Soil and the preferred alternative. The attendance list for the October 6, 2004 public meeting is included in Appendix A.

III. SUMMARY OF MAJOR QUESTIONS AND COMMENTS

A. Written Comments

During the public comment period from September 27, 2004 to October 27, 2004, no written comments were received from the public pertaining to Site 1. No new comments were received from PADEP or USEPA.

B. Public Meeting Comments

Questions or comments concerning Site 1 Soil received from the public at the October 6, 2004 public meeting are presented with the government response in Appendix B.

IV. LIST OF REFERENCES

Brown & Root Environmental, 1998. Phase II Remedial Investigation Report for Sites for NASJRB Willow Grove (Volume I and Volume II).

EA Engineering and Science (EA) 1990. Final Site Inspection Studies at NAS Willow Grove (Volume I and Volume II).

EA Engineering and Science, 1992. Extended Site Inspection Studies at NAS Willow Grove.

Earth Data Incorporated, 1986. Draft Hydrogeologist's Report, Potable Water Treatability Study, Willow Grove Naval Air Station.

Foster Wheeler Environmental Corporation (FWENC), 1999. Final Contractors Closeout Report of PCB-Contaminated Soil at Privet Road Compound Site, Willow Grove Naval Air Station, Willow Grove, Pennsylvania.

Hall, GM., 1934. Groundwater in Southeastern Pennsylvania: Pennsylvania Geological Survey, 4th ser., Water Resources Report 2.

Halliburton NUS, 1993' Remedial Investigation Report for Sites 1, 2, 3 and 5 Naval Air Station Willow Grove (Volume I and Volume II).

National Academy of Sciences, Institute of Medicine, Food and Nutrition Board, 2006. Dietary Reference Intakes: Elements. *Available online at* United Stated Department of Agriculture, National Agricultural Library, Food and Nutrition Information Center, http://fnic.nal.usda.gov/nal_display/index.php?info_center=4&tax_level=3&tax_subject=256&topic_id=1342&level3_id=5140&level4_id=0&level5_id=0&placement_default=0

Naval Energy and Environmental Support Activity (NEESA) 1986. Initial Assessment Study of Naval Air Station Willow Grove.

Northern Division Naval Facilities Engineering Command (EFANE), 1999. Action Memorandum for Removal of Soils Contaminated With Polychlorinated Biphenyls (PCBs) Site 1—Privet Road Compound.

Tetra Tech NUS (TtNUS), 2002. Remedial Investigation Report for Site 1—Privet Road Compound, NASJRB Willow Grove.

TtNUS, 2004. Proposed Remedial Action Plan for Soil (OU 1) Site 1—Privet Road Compound NASJRB Willow Grove.

United States Geological Survey (USGS), 2001. Evaluation of Borehole Geophysical Logs and Hydraulic Tests Conducted in Supply Wells 1 and 2, Willow Grove Naval Air Station/Joint Reserve Base, Horsham Township, Montgomery County, Pennsylvania.

USEPA, 1997. *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecologic I Risk Assessments* (ERAGS), EPA 540-R-97-006, OSWER Directive # 9285.7-25.

USEPA, 1999. Risk Assessment Issue Paper for: Derivation of a Provisional RfD for Iron. National Center for Environmental Assessment, Cincinnati, Ohio. January.

APPENDIX A

LIST OF ATTENDEES

PUBLIC MEETING HELD ON OCTOBER 6, 2004

NAVAL AIR STATION JOINT RESERVE BASE WILLOW GROVE
PUBLIC MEETING TO PRESENT THE PROPOSED REMEDIATION PLAN FOR SITE 1 SOIL
OCTOBER 6, 2004

NAME	ADDRESS	PHONE NUMBER	ANY ORGANIZATIONAL AFFILIATION
Ed Boyle	EFANE, Lester, PA	610-595-0567 x175	Navy
Jeff Dale	EFANE, Lester, PA	610-595-0567 x120	Navy
Jim Edmond	NAS JRB Willow Grove	215-443-6939	Navy
Kevin Kilmartin	TtNUS, King of Prussia, PA	610-491-9688	Tetra Tech
Marge D. Johnston	CNRMA, Navy	215-399-6897	Navy
Russ Turner	TtNUS, King of Prussia, PA turner@ttnus.com	610-491-9688	Tetra Tech
Hal Dusen	Air Reserve		Air Force
Charanitit Gill	Air Reserve	215-443-1105	Air Force
Scott Show	sshaw@geotransinc.com	703-444-7000	Tt EMI
Mary E. "Liz" Gemmill	26 Harding Avenue, Hatboro, PA 19040	XXXX	Community
Mark Stephens	USEPA 1650 Arch Street Philadelphia, PA	XXXX	EPA
Yuiry Neboga	PADEP	484-250-5782	PADEP
Rich Peffall	Sterling Drive, Horsham, PA 19044	XXXX	Community
Charles Gaffney	Gibralter Road, Horsham, PA	215-957-XXXX	Versar, Inc.
Christopher Snyder	Gibralter Road, Horsham, PA	215-957-XXXX	Versar, Inc.
Pnaty Fli	69 Bub Road, Fleetwood, PA	215-515-XXXX	Community
April Flipse	PADEP	484-250-5721	PADEP
Arnold Haggerty	Country Line, Horsham	215-343-XXXX	Community
Jack Dunleavy	Fairway Road Huntington Valley, PA 19006	215-784-XXXX	RAB Member
Captain Rick Cline	NAS JRB Willow Grove	215-443-6051	NAS JRB WG XO
LTCDR. Jeff Killian	NASJRB Willow Grove	215-443-6221	NAS JRB WG PWO
Paul Ruppel	The Intelligencer 145 Easton Road	215-957-8168	The Intelligencer

APPENDIX B

RESPONSE TO QUESTIONS AND COMMENTS

PUBLIC MEETING HELD ON OCTOBER 6, 2004

RESPONSIVENESS SUMMARY

RECORD OF DECISION
Naval Air Station Joint Reserve Base (NAS JRB)
Site 1 - The Privet Road Compound Soil
Willow Grove, Pennsylvania
(October 6, 2004 Public Meeting)

Reply to Comments on the Site 1 Proposed Plan

1. A RAB Member asked if the 30-day comment period began that night.

Response: Mr. Edmond replied that the comment period was from September 27 through October 27, 2004. Mr. Turner mentioned that comments received in this public meeting or during the public comment period would be incorporated into a Record of Decision (ROD) document for signature by EPA and the Navy.

2. A RAB Member asked to clarify that the soil removal actually occurred in the past and that the RAB presentation and PRAP document was providing public notice that the work was done and that there was no more action needed.

Response: Mr. Boyle and Mr. Edmond agreed that was correct, the PRAP document is part of the EPA-mandated process so that the Navy can obtain agreement from all parties that no further action (NFA) is needed.

3. A RAB Member asked if there was testing done after the soil removal.

Response: Mr. Edmond explained that there was soil testing performed before the removal, during the removal, and testing continued until permissible levels were reached before clean soil was backfilled into the excavation site. Mr. Turner added that the removal action was followed by a final closeout report prepared by the Navy that was accepted by the Navy, EPA and PADEP.