

**FINAL**

**FINDING OF SUITABILITY TO TRANSFER**

**NAVAL AIR STATION JOINT RESERVE BASE – WILLOW GROVE  
SHENANDOAH WOODS HOUSING COMPLEX  
WARMINSTER, PENNSYLVANIA  
(APPROXIMATELY 55.12 ACRES)**



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**September 2015**

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**1.0 PURPOSE**

This Finding of Suitability to Transfer (FOST) summarizes how the requirements and notifications for hazardous substances, petroleum products and other regulated material on the property have been satisfied, and documents my determination, as the responsible Department of Defense (DoD) component official, that certain real property and associated improvements known as Shenandoah Woods Housing Complex, Warminster, Pennsylvania (hereafter Subject Property) is environmentally suitable for deed transfer. This real property is associated with the former Naval Air Station Joint Reserve Base (NASJRB), Willow Grove, Pennsylvania. This FOST supersedes the July 2012 FOST, in its entirety, due to revisions to Section 3.0.

**2.0 PROPERTY DESCRIPTION**

The Subject Property is located in Warminster, Pennsylvania (Exhibit B). Navy-owned property which is the subject of this FOST consists of approximately 55.12 acres of land which is improved with 199 townhouse units. The Subject Property includes two adjoining parcels: Parcel 1 (51.23 acres) developed with the Shenandoah Woods Housing complex, and Parcel 2 (3.89 acres) improved with a ball field. Improvements on Parcel 1 include 40 buildings comprised of four, five, or six unit, two-story townhouse apartments built in 1974. There are 149 three-bedroom units approximately 1,262 square feet in size and 50 four-bedroom units approximately 1,373 square feet in size. The townhomes are standard wood frame construction with concrete slab on grade foundations. All of the units were renovated during 1994 and 1995. The housing area is provided drinking water and wastewater treatment by Warminster Municipal Authority. Parcel 1 is also improved with a building for the on-site maintenance contractor constructed in 1975, and several recreation areas. Parcel 2 contains only a ball field.

Prior to 1943, the Subject Property consisted of farmland and woods. The Naval Air Material Unit (NAMU), established in 1943 in Warminster, Pennsylvania, is where the United States Navy (Navy) coordinated its activities with the National Defense Research Committee and the Special Weapons Experimental Tactical Test Unit. The NAMU Warminster was designated the Naval Air Development Station (NADS) Warminster, prior to being changed to the Naval Air Development Center (NADC) Warminster in 1949 (Navy, 1999). During the period of development and expansion of NADC Warminster (1940s to 1960s), the land comprising the Subject Property

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remained undeveloped. Farming uses ceased around 1960. The Subject Property was then maintained as a grassy buffer associated with the airfield at NADC Warminster until the Shenandoah Woods housing units were constructed in 1974.

The NADC Warminster was renamed the Naval Air Warfare Center (NAWC) Warminster in January 1993; however, NAWC was closed on 31 March 1997 under the DoD BRAC 1995 program. At that time, ownership of the housing area on the NAWC Warminster property was transferred to NASJRB Willow Grove located in nearby Horsham Township, Montgomery County, Pennsylvania.

Aerial photographs dated at intervals between the 1930s and the present were obtained for the Subject Property from Environmental Data Resources, Inc. during the CERFA review. The 1938 photograph indicated that the Subject Property consisted entirely of farmland. The subsequent photographs do not reveal land uses on the Subject Property other than agriculture and residential uses (TtNUS, 2007).

Parcels surrounding the Subject Property to the south, east and west are residential areas consisting of single family homes. Adjoining the Subject Property to the north is the former NAWC Warminster property that was transferred to the Town of Warminster which redeveloped and maintains the land as a pedestrian park.

The Local Redevelopment Authority for the subject property is the Horsham Township Authority for NASJRB Willow Grove (HLRA). On May 18, 2011, the HLRA for NASJRB Willow Grove submitted an Amendment and Supplement to the Redevelopment Plan and Homeless Assistance Submission dated August 20, 2010 for the surplus property at Shenandoah Woods and Jacksonville Road housing areas (the Plan) (HLRA, 2011a). On July 21, 2011, the Department of Housing and Urban Development (HUD) approved the Plan for the Shenandoah Woods Housing Area as follows: (1) a portion of the property (175 townhouse units situated on approximately 29 acres) would be acquired by Warminster Township via negotiated sale with the Department of the Navy to create a new residential community. Warminster Township would then be responsible for conveying Twenty (20) townhouse units to the Aldie Foundation; and (2) the remaining 24 units situated on approximately 26 acres will be conveyed to Warminster Township for parks and

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recreation uses via a Public Benefit Conveyance (PBC) under the Department of the Interior's Federal Lands to Parks Program.

An executed "Legally Binding Agreement" (LBA) among Horsham Township Authority for NAS-JRB Willow Grove, Warminster Township, and Aldie Foundation, Inc. (HLRA, 2011b) stated that after conveyance of the Shenandoah Woods Property to the HLRA, the HLRA will either implement the Aldie Foundation "Notice of Intent" (NOI) to serve homeless persons for a period of thirty years or pay the Aldie Foundation (Provider) a fixed sum of three hundred fifty thousand dollars (\$350,000.00) as an accommodation to allow the Aldie Foundation to provide addiction treatment services for homeless individuals at another location. In accordance with the LBA, upon HUD approval of the HLRA's Homeless Submission, including the LBA and the Reuse Plan, the HLRA assigned all of its rights and obligations under these agreements to Warminster Township, as the responsible land use jurisdiction.

The Aldie Foundation NOI states that they will acquire five buildings containing 20 townhouse units at Shenandoah Woods to accommodate an average of 10 families and 16 individuals, a full time resident advisor/supervisor, and clinical support programming. This "Passage Program" will provide long term family transitional housing as a final step toward an individual's and family's road to recovery from chemical dependency. The 20 units to be conveyed were identified in the NOI.

The 29 acres, minus the buildings to be conveyed to the Aldie Foundation, will be developed by Warminster Township for single family detached and two family semi-detached homes. Forty seven existing townhomes will be demolished to accommodate 25 new single family detached homes. Existing building footings and foundations, selected sidewalks, curbs, and roads will be reused. Thirty nine existing townhomes will be demolished to create 88 semi-detached homes. Existing building footings, foundations, sidewalks, curbing, and all roads will be reused in this part of the development (HLRA, 2011a).

The PBC for Warminster Township includes transfer of 26 acres of wooded land and conservation district as well as 24 townhouse units (five buildings) in the southwest corner of the Subject Property. Warminster Township plans to demolish these five buildings to develop a storm water management and retention basin. The other uses for this 26 acre land area include open space, parks, and storm water management areas (HLRA, 2011a).

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Exhibit C is the legal description and survey of the Subject Property. Exhibit D contains the interview forms from the 25 March 2009 site visit associated with this FOST, building floor plans, photographs taken during the March 2009 site visit, and notes from a subsequent site visit on April 9, 2015.

**3.0 SUMMARY OF ENVIRONMENTAL REQUIREMENTS AND NOTIFICATION**

All available information concerning the past storage, release, or disposal of hazardous substances and/or petroleum products on the Subject Property, as collected through record searches, historic aerial photographs, personnel interviews, and on-site visual inspections, is contained in the environmental reports cited in Exhibit A. The following sections summarize the findings as they related to the Subject Property; the actions and notification requirements associated with the past storage, release, or disposal of hazardous substances and/or petroleum products or other regulated materials; and, whether transfer restrictions are warranted to ensure protection of human health and the environment and the environmental restoration process.

**A. Comprehensive Environmental Response, Compensation and Liability Act  
(CERCLA)**

CERCLA Responses: The NAWC Warminster was placed on the National Priorities List (NPL) in 1989. This list includes sites where uncontrolled hazardous substance releases present the most significant potential threats to human health and the environment. These sites have been grouped within the following areas on NAWC Warminster property: Area A (Sites 1, 2, and 3 and the Impoundment Area), Area B (Sites 5, 6, and 7), and Area C (Sites 4 and 8). A fourth general area, Area D, primarily includes the main building complex at the base and lies west of Jacksonville Road. All identified NAWC Warminster source areas of hazardous substances have undergone Remedial Investigations (RI) to characterize potential sources of contamination. These investigation activities were completed as part of the Installation Restoration Program (IRP).

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NAWC Warminster was subsequently closed under BRAC, and the custody and control of the Shenandoah Woods housing area was transferred to NASJRB Willow Grove. Area B is located in the southeastern section of the base and encompasses part of the Shenandoah Woods Navy housing area. Groundwater within Area B, identified as OU-1B, is defined as groundwater potentially impacted by contamination attributable to Sites 5, 6, and 7. Area B soils and wastes are identified by two operable units; OU-7 addresses soils and wastes associated with Sites 6 and 7; and OU-10 consists of Site 5 soils, as well as sediment and surface water associated with Area B. Exhibit B contains a figure showing the location of Sites 5, 6, and 7 relative to the Subject Property.

The only portion of Area B at the Subject Property is Site 5. NAWC Warminster IRP Site 5 overlaps the west corner of the Subject Property encompassing buildings numbered 401, 402 and 403, along Skyhawk Drive, paved roadways and walkways, and several housing unit lawns (See Exhibit B). The Navy, in conjunction with the United States Environmental Protection Agency (USEPA) and Pennsylvania Department of Environmental Protection (PADEP), issued a No Action Record of Decision (ROD) for OU-1B (groundwater) in August 2000 and a No Action ROD for OU-10 (soil) in September 2000, indicating that no action is necessary at either OU to be protective of human health and the environment. Risks posed to human health by surface and subsurface soils at Site 5, as well as Area B surface water and sediment, were found to be within the acceptable risk range for lifetime residential exposure scenarios.

In 2007, additional sediment samples were collected, as part of ongoing NAWC Warminster IRP monitoring activities of OU-10 to confirm there are no impacts on the sediments from Area B as required in the No Action ROD (Navy, 2000b). Samples were collected to expand on previous characterization of the creek and to determine whether additional sources of contamination were present. The report concluded that the overall pattern of contaminant distribution and concentrations suggests that Site 5 impacts on sediment are minimal. USEPA and PADEP concurrence was received and no revisions to the ROD for OU-10 sediments were recommended based on the 2007 sediment sampling results (TtNUS, 2007).

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During the 25 March 2009 FOST site visit, Mr. John Floyd and Mr. Ed Strolsky mentioned the presence of what was thought to have been discarded drums buried near 403 Skyhawk Drive adjacent to the asphalt cul-de-sac and the concrete curbing, which had previously been discovered when curbing had been removed as an emergency action to facilitate drainage during Hurricane Floyd.

There were no visible signs of discarded drums near the ground surface during the FOST site visit, but during a follow up investigation conducted on 29 April 2009 (ECOR, 2009) a pipe locator was used to detect subsurface metal, and excavations were performed with hand held shovels in the vicinity of 403 Skyhawk Drive. A photo-ionization device was used to evaluate the potential for volatile organic compounds (VOC) in the vicinity of the excavations and no readings above background were detected. However, a large metal object was encountered a few inches beneath the surface. Upon further excavation it was not apparent whether this was a crushed drum or some other large crushed metal object. The metal object was removed from the excavation. Samples were taken from the soil surrounding the object as well as from a solid tar like substance found on the bottom of the object. Sampling analysis revealed that only the tar like substance and one soil sample had semi-volatile organic compounds (SVOC) above the detection limits. The location of the drum coincided with samples previously collected during the Remedial Investigation (RI) of Site 5 which did not exceed action levels. The excavations were backfilled after samples were collected and all debris collected was properly disposed. The debris encountered during the investigation did not indicate the presence of contamination in this area.

CERCLA Hazardous Substance Notice: In accordance with Title 42, U.S.C., Section 9620 (h)(3)(A)(i) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), all deeds transferring federal property must provide notice, based on a complete search of agency files, of any hazardous substance stored for one year or more, known to have been released or disposed of, in excess of those reportable quantities specified under 40 CFR 373, and all response actions taken to date to address any such releases or disposals.



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There are no records indicating that hazardous substances were used or stored in excess of their threshold quantities on the Subject Property. However, at the Site 5 landfill area, wastes consisting of ash, wood, glass, cardboard, paper, tree limbs, roots, brick fragments, wire, charcoal, and scrap metal were disposed in a matrix of fill material at 3.5 to 8 feet below the ground surface. Thirty-six surface soil and 55 subsurface soil samples were taken in the area of Site 5 as part of the OU-10 Remedial Investigations, prior to the 2000 record of decision. Low levels of the volatile organic compound (VOC) trichloroethylene (TCE) as well as benzo(a)pyrene in two samples and the PCB Aroclor-1254 in three samples were detected indicating that a release may have occurred at some point in time, but quantities are unknown.

The hazardous substance notice for the Subject Property is provided in Exhibit E.

CERCLA Covenant: In accordance with CERCLA Section 120(h)(3)(A)(ii), the deed transferring the Subject Property shall contain a covenant warranting that all remedial action necessary to protect human health and the environment with respect to any hazardous substances remaining on the property have been taken before the date of transfer, and any additional remedial action found to be necessary after the date of transfer shall be conducted by the United States.

CERCLA Access Clause: In accordance with CERCLA Section 120(h)(3)(A)(iii), the deed transferring the Subject Property shall contain a clause granting to the United States, its officers, agents, employees, contractors, and subcontractors the right to enter upon the transferred property in any case in which remedial action or corrective action is found to be necessary after the date of transfer or such access is necessary to carry out a response action or corrective action on an adjoining property.

**B. Resource Conservation and Recovery Act (RCRA)**

Based on available information reviewed for this FOST, there are no records of any hazardous waste generation activity or hazardous waste accumulation or storage activity on the Subject Property, except those noted under Section 3A, above.

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**C. Presence of Petroleum Products and Derivatives**

There are no records of any releases or disposal of petroleum products or their derivatives on the Subject Property. However, it was documented in the RI that the NAWC Warminster IR site (Site 5) overlapping the Subject Property contained buried ash, wood, paper, tree limbs, roots, brick fragments, asphalt and scrap metal in a matrix of fill material (Navy, 2000b). The exact location of the asphalt is unknown.

**D. Underground/Aboveground Storage Tank**

There are no records indicating that petroleum or petroleum products were stored in underground or aboveground storage tanks on the Subject Property.

**E. Munitions and Explosives of Concern (MEC)**

There are no records to indicate there are or have been MEC response actions or ordnance handling, storage, or disposal activities on the Subject Property.

**F. Asbestos-Containing Material (ACM)**

The Asbestos Management Plan, Shenandoah Woods (Navy, 1996a) states that an October through November 1996 comprehensive ACM survey prepared by the Navy identified ACM in several of the housing units. ACM was present in the flooring materials, sheet rock, and caulking compound. The recommendations called for the removal and replacement of all confirmed ACM identified as moderate to high hazard potential. The housing areas were abated by the housing department and it was determined that no further action was necessary. The NASJRB Willow Grove personnel interviewed during the 25 March 2009 FOST site visit confirmed the abatement. The Shenandoah Woods Housing Condition Assessment (Willow Grove Housing Department, 2005) described the remodeling of the housing units including the removal and replacement of ACM identified during the 1996 inspection. The condition assessment is included in the references reviewed for this decision.

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An ACM inspection of the Shenandoah Woods housing area was completed from April 2011 to August 2011. The inspection included a survey of all 199 residential housing units, as well as the storage shed and the mini-mart non-residential structures. A total of 1,622 suspect ACM samples were collected and analyzed from the interiors of the housing units and garages, and from associated exteriors (e.g., roofing material). The presence of ACM was identified in two primary materials present in nearly all of the residences, a black sink undercoating, and adhesive coatings underlying renovated vinyl floor tiles and/or wood parquet floors. The floor adhesive that was identified as an ACM was designated as a hazard (e.g., damaged, friable, and accessible) at eleven locations in ten of the buildings as listed below. The findings of the ACM inspection are summarized in the Asbestos Inspection Summary Report (Michael Baker, 2011a).

<b>Building Number</b>	<b>Unit Number(s)</b>	<b>Material</b>	<b>Area in Square Feet</b>
415	607	Black floor adhesive under parquet flooring material	4422
417	617	Black floor adhesive under parquet flooring material	3721
421	1097, 1101, 1107	Black floor adhesive under parquet flooring material	4206
430	1097, 1103, 1105	Black floor adhesive under vinyl floor tile	3721
432	1119, 1127	Black floor adhesive under vinyl floor tile	2420
433	1131, 1139	Black floor adhesive under vinyl floor tile	2420
434	1146	Black floor adhesive under vinyl floor tile	1928
435	1134	Black floor adhesive under vinyl floor tile	2892
436	1116, 1118, 1120	Black floor adhesive under vinyl floor tile	2420
436	1116, 1120	Black floor adhesive under parquet flooring material	3721
437	1102	Black floor adhesive under vinyl floor tile	32

Of the twenty housing units set aside for conveyance to the Aldie Foundation, the 2011 ACM survey identified friable or damaged (hazard) ACM in two of the units, Units 607 and 617. It is likely that ACM in some or all of the remaining units will deteriorate further and become a hazard prior to transfer. Units not conveyed to the Aldie Foundation are planned for renovation or demolition, as specified in the Amendment and Supplement to the Redevelopment Plan and Homeless Assistance Submission (HLRA, 2011a).

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Abatement of ACM in all housing units, including those with friable and damaged ACM, will be the responsibility of the Transferee.

ACM Hazards Advisory Statement: The ACM hazards advisory is included in Exhibit F of this FOST and will be provided to the transferee for signing prior to transfer.

**G. Lead-Based Paint (LBP), Target Housing and Residential Property**

The Lead Management Plan, Shenandoah Woods (Navy, 1996b) states that a comprehensive lead paint survey was conducted October through November 1996 and did not identify the presence of lead based paint (LBP) in samples collected from any of the suspect LBP surfaces tested in several housing units. Paint, dust and soil samples analyzed did not have concentrations that exceeded the corresponding action limits.

A lead-based paint inspection and risk assessment was conducted at the Shenandoah Woods housing area from May 2011 to July 2011. The interior and exterior surfaces of 51 representative housing units were tested for LBP using a hand-held X-Ray Fluorescence (XRF) instrument, the Radiation Monitoring Devices (RMD) model LPA-1. Dust wipe samples were collected from window sills and floors in each representative unit and analyzed for lead via flame atomic absorption spectroscopy (AAS). All XRF-analyzed surfaces were negative for LBP. In addition, soil samples were collected from three locations at each inspected residence: from the building drip line, mid-yard, and in the play area. Soil samples were analyzed for lead via flame AAS. Lead was not detected above the positive threshold value in any of the dust wipe or soil samples collected from the Shenandoah Woods Housing property.

LBP Hazards Advisory Statement: The LBP hazards advisory, is included in Exhibit F of this FOST and will be provided to the transferee for signing prior to transfer.

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**H. Polychlorinated Biphenyls (PCBs)**

All transformers within the Subject Property are Navy-owned and are considered non-PCB containing transformers, i.e. containing less than 50 parts per million PCB. Sampling of the main pad mounted transformer was conducted in 1998. The samples collected indicated that PCBs were found to be less than 1 part per million (AMEC, 2006).

The records indicate PCBs were never stored, released or disposed of on the Subject Property.

**I. Perfluorinated Compounds (PFCs)**

Perfluorinated compounds (PFCs) are a class of “emerging contaminants” (a chemical or material that is characterized by a perceived, potential, or real threat to human health or the environment or by a lack of published health standards) that were detected in groundwater, at and near the Subject Property. Provisional Health Advisory (PHA) levels have been established for only two PFCs; Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). In January 2009, the EPA’s Office of Water established a PHA level of 0.2 micrograms per liter (µg/L) for PFOS and 0.4 µg/L for PFOA to assess the potential risk from short-term exposure of these chemicals through drinking water.

The Navy has initiated a remedial investigation (RI) for PFCs in groundwater at former NAWC Warminster, which is tentatively scheduled to be completed in 2016. The RI will characterize site conditions, the nature and extent of contamination, and risks posed by that contamination to human and/or environmental receptors. The RI will provide the information needed to evaluate and select appropriate remedial alternatives. The Navy will complete the investigation and take appropriate remedial activities as required under CERCLA.

While gathering data under the RI, the Navy performed soil and groundwater sampling for PFOA and PFOS in April and June 2015; see Exhibit G, Perfluorinated Compounds. Pending completion of the RI, this sampling information and site history suggests that the Subject Property is not a source PFC contamination.

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**J. Environmental Restrictions, Provisions, and Conditions**

Based on the current environmental condition of the property as described in this FOST, the following restrictions, provisions and conditions, as a minimum, shall be included in the transfer deed for the Subject Property to ensure the protection of human health and the environment and to prevent the interruption of any environmental restoration activities to be conducted by the Navy, if required.

1. Notice Of Hazardous Substance Activity in accordance with 42 U.S.C. §9620(h)(3)(A)(i): Exhibit “\_” to this Quitclaim Deed provides information as to those hazardous substances which it is known, based upon GOVERNMENT’s complete search of its files, were stored for one (1) year or more, or were released or disposed of on the PROPERTY. The information contained in Exhibit “\_” is required under 42 U.S.C. § 9620(h)(3)(A)(i), and implementing EPA regulations at Title 40, Code of Federal Regulations, Part 373.

2. CERCLA Covenants: Pursuant to Section 120(h)(3)(A)(ii) and (B) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. Section 9620(h)(3)(A)(ii) and (B)), the United States warrants that:

(a) All remedial action necessary to protect human health and the environment with respect to any hazardous substances identified pursuant to Section 120(h)(3)(A)(i)(I) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 remaining on the PROPERTY has been taken before the date of this deed, and

(b) Any additional remedial action found to be necessary after the date of this deed shall be performed by the United States.

3. Reservation of Access as Required by 42 U.S.C. §9620(h)(3)(A)(iii): The United States retains and reserves a perpetual and assignable easement and right of access on, over, and through the PROPERTY, to enter upon the PROPERTY in any case in which an environmental response or corrective action is found to be necessary on the part of

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the United States, without regard to whether such environmental response or corrective action is on the PROPERTY or on adjoining nearby lands. Such easement and right of access includes, without limitation, the right to perform any environmental investigation, survey, monitoring, sampling, testing, drilling, boring, coring, test pitting, installing monitoring or pumping wells or other treatment facilities, response action, corrective action, or any other action necessary for the United States to meet its responsibilities under applicable laws and as provided for in this instrument. Such easement and right of access shall be binding on the GRANTEE and its successors and assigns and shall run with the land.

In exercising such easement and right of access, the United States shall provide the GRANTEE or its successors or assigns, as the case may be, with reasonable notice of its intent to enter upon the PROPERTY and exercise its rights under this clause, which notice may be severely curtailed or even eliminated in emergency situations. The United States shall use reasonable means to avoid and to minimize interference with the GRANTEE's and the GRANTEE's successors' and assigns' quiet enjoyment of the PROPERTY. At the completion of work, the work site shall be reasonably restored. Such easement and right of access includes the right to obtain and use utility services, including water, gas, electricity, sewer, and communications services available on the PROPERTY at a reasonable charge to the United States. Excluding the reasonable charges for such utility services, no fee, charge, or compensation will be due the GRANTEE, nor its successor and assigns, for the exercise of the easement and right of access hereby retained by the United States.

In exercising such easement and right of access, neither the GRANTEE nor its successors and assigns, as the case may be, shall have any claim at law or equity against the United States or any officer, employee, agent, contractor of any tier, or servant of the United States based on actions taken by the United States or its officers, employees, agents, contractors of any tier, or servants pursuant to and in accordance with this clause; Provided, however, that nothing in this paragraph shall be considered as a waiver by the GRANTEE and its successors and assigns of any remedy available to them under the Federal Tort Claims Act.

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4. Discovery of Previously Unknown Contamination: The GRANTEE, its successors and assigns, or their subcontractors, shall stop all work and notify the Navy immediately if previously unknown contamination, such as, but without limitation, buried debris, stained soil, unusual odors, is discovered during soil disturbing activity such as soil excavation, drilling, digging or other ground-disturbing activities, including disturbance of building slabs, roads and other structures and paved areas.

5. Presence of Asbestos: The GRANTEE, its successors, and assigns, covenant and agree that they will comply with all federal, state and local laws relating to ACM in their use of the building and structures included in this transfer. The GRANTOR assumes no new or further liability as a result of this transfer than it would otherwise have for losses, judgments, claims, demands or expenses, or damages of whatever nature or kind from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with ACM from the building, structures, and underground utilities included in this transfer. Due to the presence of known hazard ACM associated with housing units on the Subject Property, the Grantee is responsible for abatement of ACM in all housing units prior to their maintenance, renovation or demolition. Any invasive work performed by the GRANTEE must be conducted in accordance with applicable regulations and conducted by trained, properly-equipped personnel. The buildings included in this transfer will be transferred “as is” and asbestos hazards in said building will become the responsibility of the GRANTEE. The GRANTEE will be required to sign the Asbestos Hazard Disclosure and Acknowledgment Form included as Exhibit F of the FOST prior to execution of the transfer deed.

6. Presence of Lead-Based Paint: The GRANTEE, its successors, and assigns agree that they will comply with all federal, state, and local laws relating to LBP in their use of the building and structures included in this transfer (including demolition and disposal of existing improvements). The GRANTOR assumes no new or further liability as a result of this transfer than it would otherwise have for losses, judgments, claims, demands, expenses, or damages of whatever nature or kind from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with LBP from the building or structures



**FINDING OF SUITABILITY TO TRANSFER  
NAVAL AIR STATION JOINT RESERVE BASE – WILLOW GROVE  
SHENANDOAH WOODS HOUSING COMPLEX  
WARMINSTER, PENNSYLVANIA**

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included in this transfer. The buildings included in this transfer will be transferred “as is” and LBP hazards in said building will become the responsibility of the GRANTEE. The GRANTEE will be required to sign the Lead-based Paint Hazard Disclosure and Acknowledgment Form included as Exhibit F of the FOST prior to execution of the transfer deed.

7. Presence of Polychlorinated Biphenyls in Building Materials: The GRANTEE acknowledges that fluorescent light fixture ballasts in facilities on the Transfer Parcel may contain PCBs. Prior to beginning any maintenance, alterations, demolition, restoration, or construction work affecting fluorescent light fixtures, the GRANTEE must determine if PCB ballasts are present. If present, PCB ballasts and/or fixtures must be disposed of properly in accordance with all applicable Federal, State, and local laws and regulations. The GRANTEE also acknowledges that buildings constructed or renovated between 1950 and 1978 have the potential to have PCBs contained within caulking, and the PCBs can migrate from the caulk into air, dust and surrounding material, such as wood, bricks and soil. Such materials must be handled, managed and disposed of properly during maintenance, renovations or demolition by the GRANTEE.

8. Groundwater and Emerging Contaminant Notification: The GRANTEE is hereby notified that the PROPERTY contains emerging contaminants called Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) in the soil and/or groundwater. The GRANTEE is also hereby notified that the PROPERTY is adjacent to the Casey Village Section of Warminster Township. Groundwater within Casey Village has been documented to contain Volatile Organic Chemicals (VOC) that are not attributed to sources within the PROPERTY, but may affect groundwater at this PROPERTY

Deed restrictions are placed on the PROPERTY to restrict exposure to potential groundwater contaminants.

9. Covenant and Restriction Regarding the Use of Groundwater: Groundwater drawn from the PROPERTY shall not be used or made available for human consumption. GRANTEE, its successors, and assigns, covenant and agree that prior written approval of the GRANTOR, EPA, PADEP, Bucks County Health Department, and municipal

**FINDING OF SUITABILITY TO TRANSFER  
NAVAL AIR STATION JOINT RESERVE BASE – WILLOW GROVE  
SHENANDOAH WOODS HOUSING COMPLEX  
WARMINSTER, PENNSYLVANIA**

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authorities shall be obtained prior to (i) drilling of any wells on the PROPERTY or (ii) extracting of any groundwater from the PROPERTY.

10. Reservation Regarding Groundwater Monitoring Wells: The GOVERNMENT its successors and assigns reserves for itself an easement for all existing and future groundwater monitoring wells located within the PROPERTY for (a) the periodic sampling of existing groundwater monitoring wells to satisfy the requirements of the Navy Installation Restoration Program (IRP) and (b) the maintenance or abandonment of all existing and future monitoring wells. Existing groundwater monitoring wells are located within the PROPERTY and are more fully described in Exhibit "G", attached hereto and made a part hereof. The GOVERNMENT its successors and assigns shall further have the right, in common with all others entitled thereto, to pass and repass on streets, roadways, and passageways as may exist and as reasonably necessary to perform periodic sampling and required maintenance of the existing and any future groundwater monitoring wells. The GRANTEE, its successors, and assigns shall be able to use the PROPERTY in any manner that does not relocate or otherwise interfere with the integrity, maintenance or continued usefulness of the monitoring wells, or any part or portion thereof without the prior written consent of the GOVERNMENT. If wells become damaged or otherwise rendered inoperable, they will be replaced by the Navy and the cost will be borne by the GRANTEE or its successors and assigns.

11. Pesticide Notification: The GRANTEE is hereby notified that the PROPERTY may contain pesticide residue from pesticides that have been applied in the management of the PROPERTY. The GRANTOR knows of no use of any registered pesticide in a manner inconsistent with its labeling and believes that all applications were made in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA - 7 U.S.C. Sec. 136, et seq.), its implementing regulations, and according to the labeling provided with such substances. It is the GRANTOR's position that it shall have no obligation under the covenants provided pursuant to section 120(h)(3)(A)(ii) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. Sections 9620(h)(3)(A)(ii), for the remediation of legally applied pesticides.

**FINDING OF SUITABILITY TO TRANSFER  
NAVAL AIR STATION JOINT RESERVE BASE – WILLOW GROVE  
SHENANDOAH WOODS HOUSING COMPLEX  
WARMINSTER, PENNSYLVANIA**

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**K. Environmental Compliance Agreements/Permits/Orders**

The Navy has identified one IRP Site, Site 5, known as OU-1B (groundwater) and OU-10 (soil) on the western portion of the Subject Property. The Navy, in conjunction with the USEPA and PADEP, issued a No Action Record of Decision (ROD) for OU-1B (groundwater) on 20 June 2000 and a No Action ROD for OU-10 (soil) on 28 September 2000, indicating that no action is necessary at either site OU to be protective of human health and the environment (Navy, 2000a and 2000b).

**L. Availability of References**

References will be available upon request from the Navy's BRAC Program Management Office East, located in Philadelphia, PA.

**M. Notification to Regulatory Agencies/Public**

In accordance with Section C8.5.5.2 of the Base Redevelopment and Realignment Manual (DoD, 2006), the USEPA and the PADEP have been advised of the proposed transfer of the Subject Property, and copies of the CERFA Report (letter dated 23 April 2007) and a Draft FOST have been provided to PADEP and USEPA for review and comment. PADEP and USEPA provided comments on this Draft FOST (Exhibit H). A public notice of the Navy's intent to sign this FOST will be published at least 30 days prior to transfer by deed. Copies of all transfer documentation will be made available to the HLRA, the USEPA, and PADEP upon request after execution of the same.

**FINDING OF SUITABILITY TO TRANSFER  
NAVAL AIR STATION JOINT RESERVE BASE – WILLOW GROVE  
SHENANDOAH WOODS HOUSING COMPLEX  
WARMINSTER, PENNSYLVANIA**

---

**4.0 FINDING OF SUITABILITY TO TRANSFER**

Based on the information contained in this FOST, the notices discussed herein, and the covenants that will be contained in the deed, the property is suitable for transfer.

9/22/15

Date



David H. Hellman  
Deputy Director  
BRAC Program Management Office  
Washington, DC

**Exhibit A**  
**References**

## REFERENCES

AMEC, 2006. Final Environmental Condition of Property Report for the Off-Base Housing Areas of the Naval Air Station Joint Reserve Base, Willow Grove, Pennsylvania. May.

DoD, 2006. (Department of Defense, Office of the Deputy Undersecretary of Defense [Installations and Environment]) DoD 4165.66-M Base Redevelopment and Realignment Manual. Washington, D.C., March 1, 2006.

ECOR, 2009. Final Summary Report for the April 2009 Soil Investigation Activities Conducted at Shenandoah Woods, Former NAWC Warminster, Pennsylvania. August.

HLRA, 2011a. Horsham Township Authority for NAS-JRB Willow Grove. Amendment and Supplement to the Redevelopment Plan and Homeless Assistance Submission. May.

HLRA, 2011b. Horsham Township Authority for NAS-JRB Willow Grove. Legally Binding Agreement Among HLRA, Warminster Township, and Aldie Foundation, Inc. July.

HUD (U.S. Department of Housing and Urban Development), 2011. Letter from Mark Johnston, Deputy Assistant Secretary for Special Needs, HUD to Michael McGee, Horsham Township Local Redevelopment Authority, re. Approval of Amendment and Supplement to the Redevelopment Plan, July

Michael Baker Jr., Inc., 2011a. Asbestos Inspection Summary Report for NASJRB Willow Grove. October.

Michael Baker Jr., Inc., 2011b. Lead-Based Paint Inspection Summary Report for NASJRB Willow Grove. October.

Navy (Department of the Navy), 1996a. Asbestos Management Plan, Shenandoah Woods, Naval Air Station Joint Reserve Base Willow Grove, Warminster, Pennsylvania. Norfolk, Virginia. December.

Navy, 1996b. Lead Management Plan, Shenandoah Woods, Naval Air Station Joint Reserve Base Willow Grove, Warminster, Pennsylvania. Norfolk, Virginia. December.

Navy, 1999. Draft Environmental Baseline Survey, Naval Family Housing, Naval Air Station Willow Grove, Pennsylvania. Lester, Pennsylvania. August.

**REFERENCES (Continued)**

Navy, 2000a. Record of Decision for OU 1B (Area B Groundwater), Naval Air Warfare Center, Warminster, Pennsylvania. August.

Navy, 2000b. Record of Decision for OU 10 (Site 5 Soil and Area B Surface Water/Sediment), Naval Air Warfare Center, Warminster, Pennsylvania. September.

TtNUS (Tetra Tech NUS, Inc.), 2007a. CERFA Identification of Uncontaminated Property at the Naval Air Station Joint Reserve Base, Willow Grove, Pennsylvania. Germantown, Maryland. April.

TtNUS, 2007b. Operable Unit 10 Sediment Sampling Report, Former Naval Warfare Center Warminster, Warminster, Pennsylvania. King of Prussia, Pennsylvania. October.

Willow Grove Housing Department, 2005. Shenandoah Woods Housing Condition Assessment. Naval Air Station Joint Reserve Base, Willow Grove, Pennsylvania.

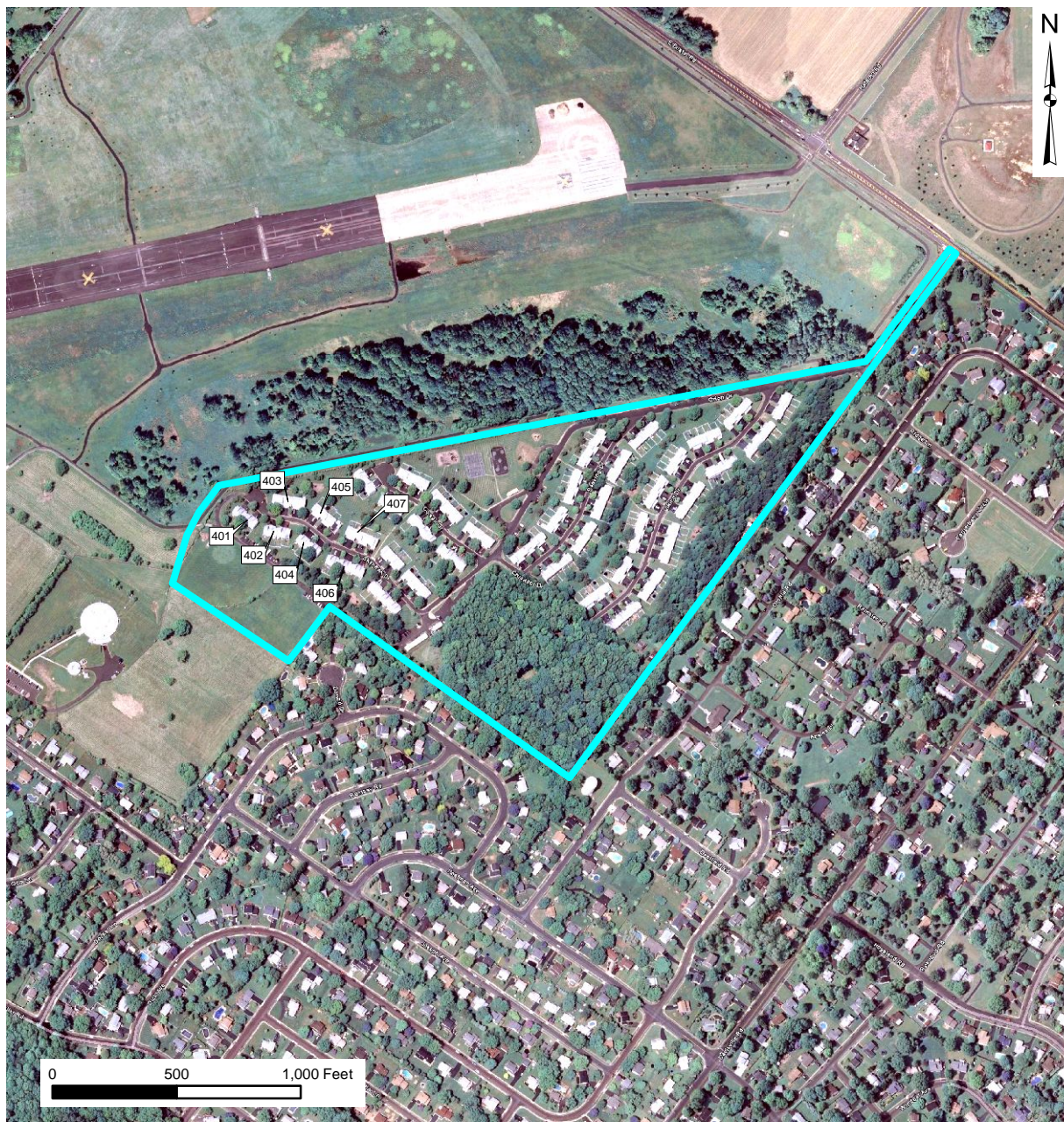
**Exhibit B**

**Site Map**

**Location Map – Sites 5, 6 and 7**



## Site Map




### SITE LOCATION



Background Imagery: Google 2007

### Legend

 Shenandoah Woods Housing Area



**Tetra Tech NUS, Inc**

## SHENANDOAH WOODS HOUSING WARMINSTER, PA

FILE  
Shenandoah Woods Housing Area\_111811

SCALE  
AS NOTED

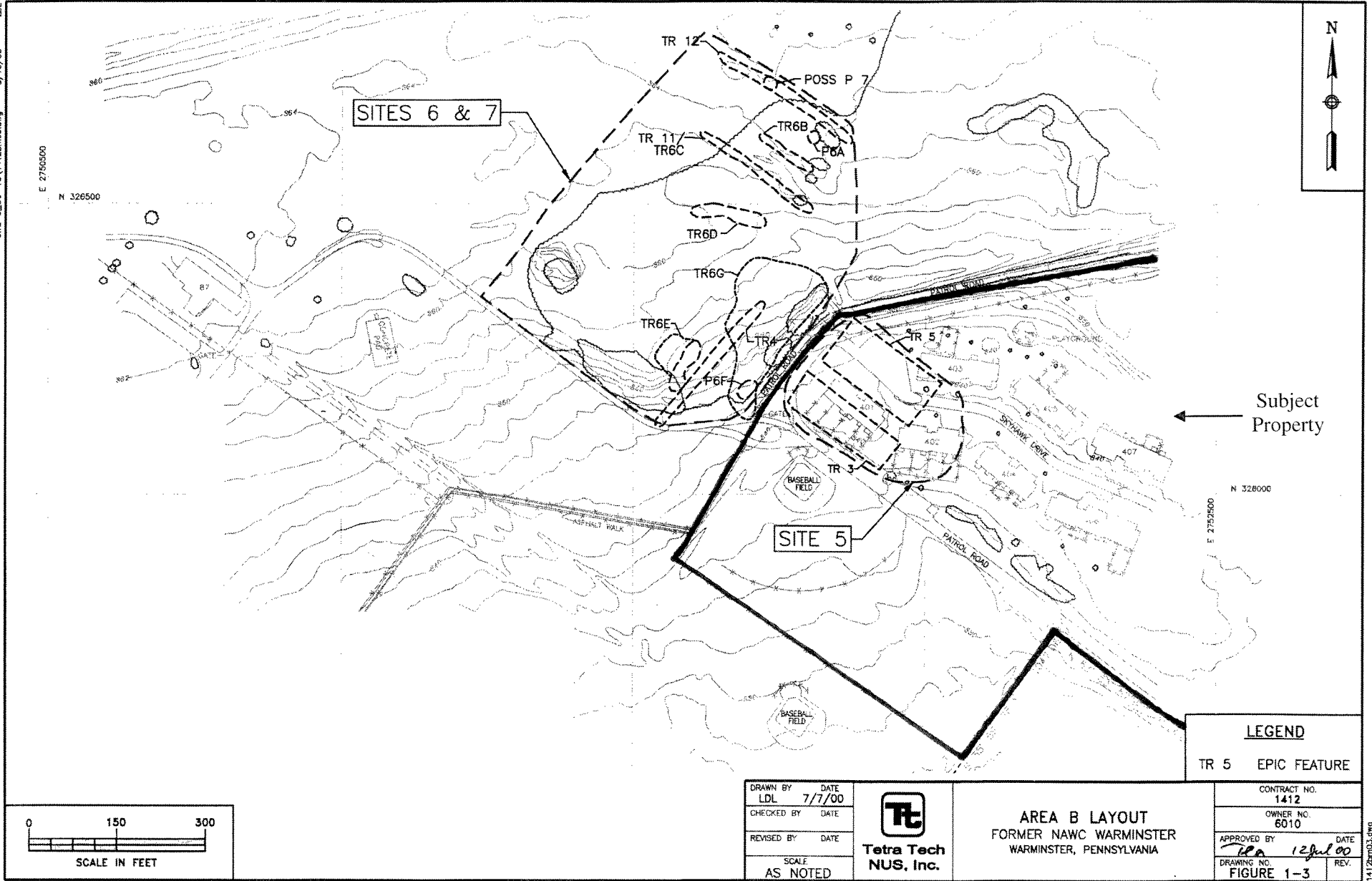
FIGURE NUMBER  
EXHIBIT B

REV  
2

DATE  
11/18/11

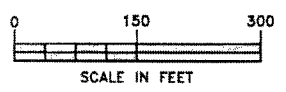
**Location of Sites 5, 6, and 7  
Relative to the Subject Property**

DATE: 5/19/00



Subject Property  
←

**LEGEND**  
TR 5 EPIC FEATURE



DRAWN BY LDL	DATE 7/7/00
CHECKED BY	DATE
REVISED BY	DATE
SCALE AS NOTED	



**AREA B LAYOUT**  
FORMER NAWC WARMINSTER  
WARMINSTER, PENNSYLVANIA

CONTRACT NO. 1412	
OWNER NO. 6010	
APPROVED BY <i>TEA</i>	DATE 12/1/00
DRAWING NO. FIGURE 1-3	REV.

**Exhibit C**

**Legal Description and Survey Map**



**Ludgate Engineering Corporation**

Engineers, Surveyors, Land Planners,  
Environmental Scientists

Robert B. Ludgate, Sr., PE, PLS, President  
Edwin H. Nordahl, II, PE, VP Engineering Services  
Robert B. Ludgate, Jr., VP Municipal Services  
Thomas B. Ludgate, PLS, VP Surveying Services  
Peter C. Eisenbrown, PE, VP Construction Services

Lincoln Corporate Center  
10 Vanguard Drive, Suite 90  
Reading, PA 19606  
610-404-7330  
610-404-7371 (Fax)  
1-888-646-6161 (Toll Free)  
www.ludgate-eng.com

June 30, 2009

Revised July 30, 2009

Deed Description  
Shenandoah Woods Housing

ALL THAT CERTAIN parcel of ground with the improvements thereon on the southwest side of Bristol Road and the south of lands of Township of Warminster situate in Warminster Township, Bucks County, Pennsylvania shown on a Boundary Survey Plan of "Shenandoah Woods Housing" prepared by Ludgate Engineering Corporation Plan Number D-8400609 dated 6-30-09 and being more fully bounded and described as follows to WIT:

Parcel 1

BEGINNING at a P.K. on the southwestern right-of-way line of Bristol Road and a corner of the subdivision plan of Countryside Estates Plan Book Volume 147 pg 17B;  
Thence along Plan Book Volume 147 pg 17B and along Plan Book Volume 6 pg 49 and along Plan Book Volume 84 pg 5A South 45 degrees 04 minutes 22 seconds West 2697.77 feet to a point a corner of Plan Book Volume 25 page 39;  
Thence along Plan Book Volume 25 page 39 North 44 degrees 48 minutes 26 seconds West 1224.05 feet to a point a corner of Parcel 2;  
Thence along Parcel 2 North 44 degrees 50 minutes 39 seconds West 660.57 feet to a point a corner of lands of the Township of Warminster;  
Thence along lands of the Township of Warminster the three following courses and distances:

1. North 44 degrees 43 minutes 11 seconds East 169.62 feet to a point.
2. North 88 degrees 33 minutes 21 seconds East 2653.05 feet to a point.
3. North 45 degrees 05 minutes 10 seconds East 599.65 feet to a point on the right of way of Bristol Road.

Thence along the right of way of Bristol Road South 44 degrees 54 minutes 58 seconds East 59.85 feet to a P.K. the Place of BEGINNING.

CONTAINING: 51.23 Acres.

Parcel 2

BEGINNING at a point a corner of the subdivision of Briar Hill Farms, Inc. Plan Book Volume 25 pg 39 and a corner of Parcel #1;  
Thence along Plan Book Volume 25 pg 39 South 45 degrees 11 minutes 04 seconds West 261.95 feet to a point a corner of lands of Pennsylvania State University;  
Thence along lands of Pennsylvania State University the two following courses and distances:

1. North 46 degrees 43 minutes 19 seconds West 574.21 feet to a point.
2. North 23 degrees 13 minutes 17 seconds East 157.34 feet to a point a corner of lands of Warminster Township.

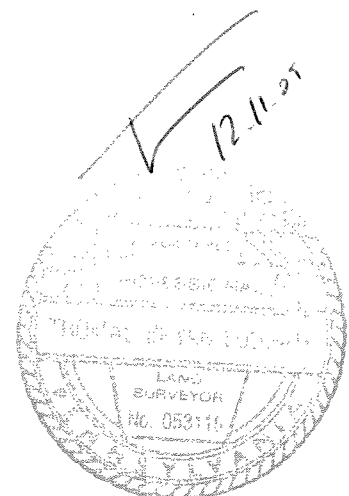
Thence along lands of the Township of Warminster North 33 degrees 31 minutes 04 seconds East 137.64 feet to a point. A corner of Parcel #1;  
Thence along Parcel #1 South 44 degrees 50 minutes 39 seconds East 660.57 feet to a point the Place of BEGINNING

CONTAINING: 3.89 Acres

Being subject to the general notes from

the above referenced plan.

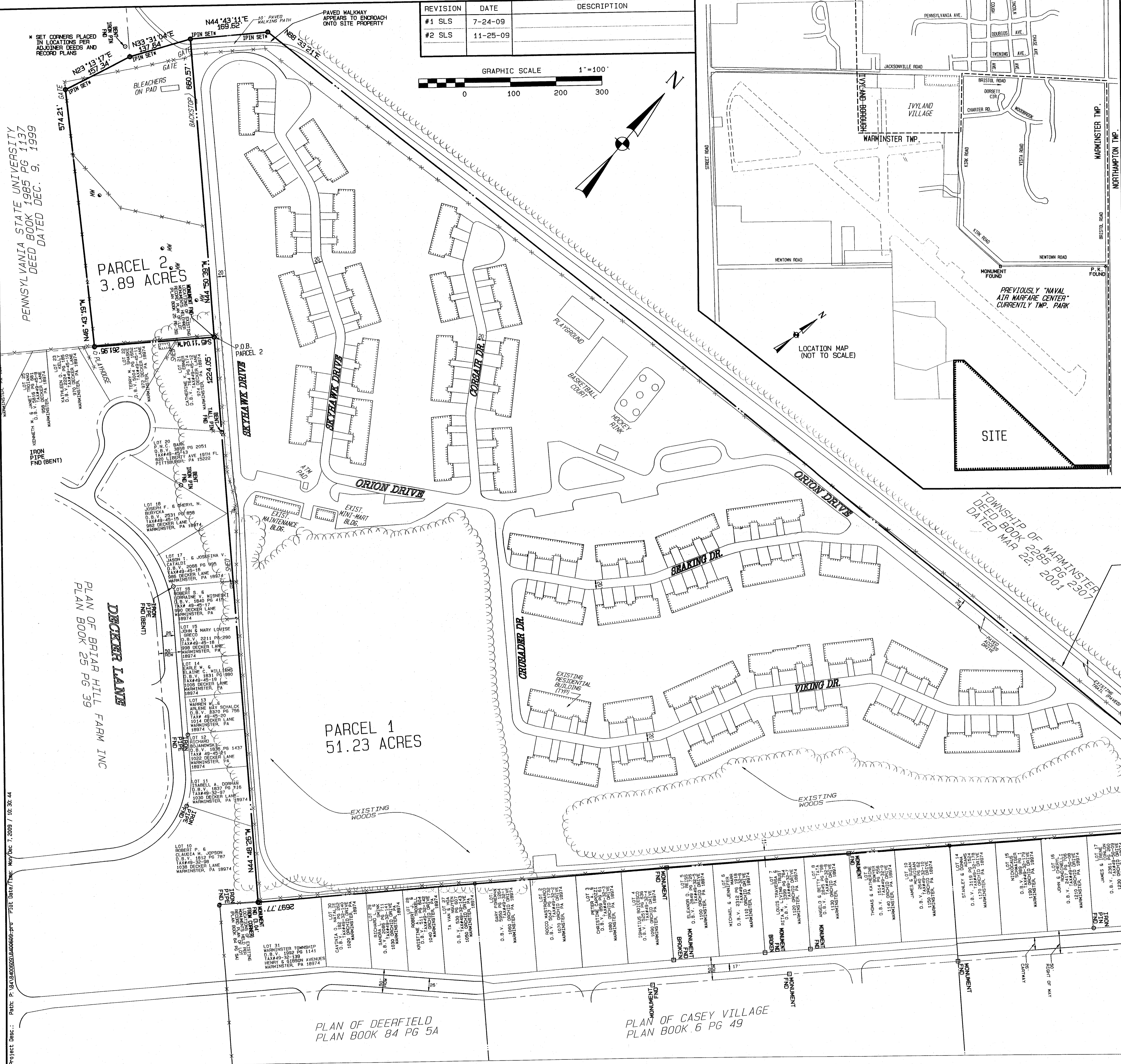
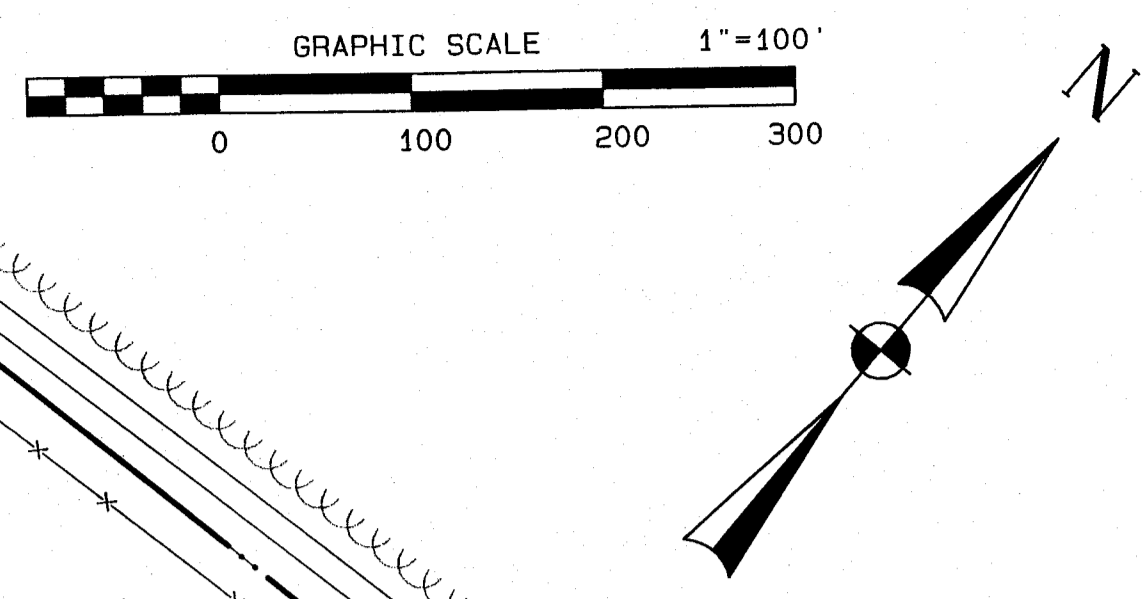
CHECK: gus  
COMPUTER CHECK: gus



# BOUNDARY SURVEY & LIMITED TOPOGRAPHIC SURVEY PLOT

SITUATE IN: WARMINSTER TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA		<b>SHENANDOAH WOODS HOUSING</b>																									
PREPARED FOR: NAVY BRAC PROGRAM MANAGEMENT OFFICE, BRAC PMO NORTHEAST, PHILADELPHIA, PA 19112		<b>Ludgate Engineering Corporation</b> <small>ENGINEERS SURVEYORS PLANNERS ENVIRONMENTAL SCIENTISTS © 2009</small>																									
LINCINN CORPORATE CENTER 10 VANGUARD DRIVE, SUITE 90 READING, PA 19606 PHONE 610/404-7330 FAX 610/404-7371																											
<small>© COPYRIGHT 2009 BY LUDGATE ENGINEERING CORPORATION</small>	<small>ALL RIGHTS RESERVED. NEITHER ALL NOR ANY PART OF THIS DOCUMENT MAY BE REPRODUCED, COPIED, OR USED IN ANY FORM OR MANNER EXCEPT PURSUANT TO CONTRACT WITH THE SPECIFIC WRITTEN PERMISSION OF LUDGATE ENGINEERING CORPORATION.</small>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td><small>DRAWN</small></td> <td><small>COMP (BNDY)</small></td> <td><small>COMP (LOT#)</small></td> <td><small>PA ONE</small></td> <td><small>COMPUTER FILE</small></td> </tr> <tr> <td><small>SLS</small></td> <td><small>SLS</small></td> <td><small>SLS</small></td> <td><small>CALL DATE</small></td> <td><small>P: 8400609.PRO</small></td> </tr> <tr> <td><small>6-30-09</small></td> <td><small>11-24-09</small></td> <td></td> <td></td> <td></td> </tr> <tr> <td><small>SCALE</small></td> <td><small>TAX MAP PARCEL</small></td> <td colspan="3"><small>DRAWING NUMBER</small></td> </tr> <tr> <td><small>1"=100'</small></td> <td><small>SEE NOTES</small></td> <td colspan="3"><small>D-8400609</small></td> </tr> </table>	<small>DRAWN</small>	<small>COMP (BNDY)</small>	<small>COMP (LOT#)</small>	<small>PA ONE</small>	<small>COMPUTER FILE</small>	<small>SLS</small>	<small>SLS</small>	<small>SLS</small>	<small>CALL DATE</small>	<small>P: 8400609.PRO</small>	<small>6-30-09</small>	<small>11-24-09</small>				<small>SCALE</small>	<small>TAX MAP PARCEL</small>	<small>DRAWING NUMBER</small>			<small>1"=100'</small>	<small>SEE NOTES</small>	<small>D-8400609</small>		
<small>DRAWN</small>	<small>COMP (BNDY)</small>	<small>COMP (LOT#)</small>	<small>PA ONE</small>	<small>COMPUTER FILE</small>																							
<small>SLS</small>	<small>SLS</small>	<small>SLS</small>	<small>CALL DATE</small>	<small>P: 8400609.PRO</small>																							
<small>6-30-09</small>	<small>11-24-09</small>																										
<small>SCALE</small>	<small>TAX MAP PARCEL</small>	<small>DRAWING NUMBER</small>																									
<small>1"=100'</small>	<small>SEE NOTES</small>	<small>D-8400609</small>																									

REVISION	DATE	DESCRIPTION
#1 SLS	7-24-09	
#2 SLS	11-25-09	

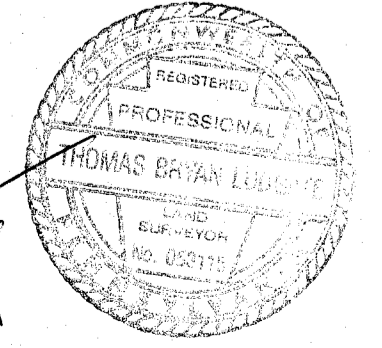


- ### NOTES
- SITE FEATURES SHOWN PER LIMITED FIELD WORK AND AERIAL PHOTO OVERLAY. THESE ARE SHOWN FOR GENERAL REFERENCE ONLY AND ARE NOT SUITABLE FOR THE BASIS OF ANY WORK/DESIGN. LUDGATE ENGINEERING CORPORATION FIELD SURVEY OF 6-19-09.
  - REFERENCES:
    - \* BUCKS COUNTY TAX MAPS
    - \* DEEDS AS SHOWN
    - \* RECORD PLANS
      - \*\* PLAN OF "STORYBOOK HOMES" PBV 25 PG 32A DATED 2-19-63 PREPARED BY ENGINEERING & PLANNING ASSOCIATES, INC.
      - \*\* PLAN OF "DEERFIELD" PBV 84 PG 51 DATED 3-25-70 PREPARED BY SUBURBAN GREENS INC.
      - \*\* PLAN OF "BRIAR HILL FARM INC" PBV 25 PG 39 DATED 11-6-1962 PREPARED BY ENGINEERING & PLANNING ASSOCIATES, INC.
      - \*\* PLAN OF "CASEY VILLAGE" PBV 6 PG 49 DATED 7-24-53 PREPARED BY PICKERING, CORTS & SUMMERSON
      - \*\* PLAN OF "COUNTRYSIDE ESTATE" PBV 147 PG 17B DATED 5-10-73 PREPARED BY TRI-STATE ENGINEERS & LAND SURVEYORS INC.
      - \*\* PLAN OF "STORM DRAIN EASEMENT" PBV 124 PG 7 DATED 6-27-74
      - \*\* PLAN OF "PROPOSED BOUNDARY PLAN" PBV 299 PG 27 DATED 6-24-98 PREPARED BY PENNONI ASSOCIATES INC.
  - THE SITE BOUNDARY IS SHOWN PER THE LIMITS OF ADJOINING DEEDS AND RECORD PLANS AND PHYSICAL BOUNDARY EVIDENCE FOUND. THERE IS NOT A RECORD METES AND BOUNDS DESCRIPTION OF THE SITE AS IT CURRENTLY EXISTS.
  - SITE OWNER:  
USA DEPT OF NAVY,  
US NAVAL AIR DEVT ST,  
JOHNSVILLE, PA 18974  
D.B.V. 760 PG. 175  
TAX#49-024-015 & #49-024-015-10
  - SITE AREA: PARCEL 1 = 51.23 ACRES/2,231,578 SQ. FT.  
PARCEL 2 = 3.89 ACRES/169,448 SQ. FT.  
TOTAL = 55.12 ACRES/2,401,026 SQ. FT.

### LEGEND

	= WOODS LINE
	= EXIST. FENCE LINE
	= IRON PIN OR P.K. FOUND
	= MONUMENT FOUND
	= EXISTING BUILDINGS
	= MONITORING WELL (MW)
	= SUBJECT PROPERTY LINE

Project Desc.: Patch, P. 04/23/09 10:30:44



12/11/09



**Exhibit D**  
**Interview Forms, Floor Plans, Site Inspection Photographs,**  
**and Site Visits**

## **Interview Forms**

**FINDINGS OF SUITABILITY TO TRANSFER  
INTERVIEW RECORD**

**SUBJECT PROPERTY NAME:**

Shenandoah Woods Housing Complex, Warminster, Pennsylvania (NASJRB Willow Grove)

**INTERVIEW DATE:**

25 March 2009

**INTERVIEWERS:**

Ms. Amy Stattel, Tetra Tech NUS, Inc.

Ms. Samantha Brenner, Tetra Tech NUS, Inc.

**PERSONS INTERVIEWED:**

Mr. John Floyd, Navy Housing Facilities Manager, NASJRB Willow Grove

**INTERVIEW LOCATION/SETTING:**

NASJRB Willow Grove, Housing Office, Building 148, FOST Kickoff Meeting  
(In Person) and  
Shenandoah Woods Housing Complex, FOST Site Visit (In Person)

**INTERVIEW LOG:**

Mr. Floyd was asked to provide information about any environmental issues or property conditions that have changed since the completion of the 2007 CERFA Report for NASJRB Willow Grove, which included the CERFA assessment for the subject property (TiNUS, 2007). Mr. Floyd reported in the last two years the youth center was removed, and a sinkhole that had been previously repaired has re-appeared below part of the hockey rink and near the basketball courts.

Mr. Floyd reported that about five years ago, there was a problem with flooding at the end of Skyhawk Drive due to heavy rainfall during Hurricane Floyd. The grounds maintenance contractor for Shenandoah Woods, Larad Services, had to perform an emergency drainage measure for water that was pooling in the back yard of unit #571, or 403 Skyhawk Drive. The emergency measure, completed in the middle of the night, was to use a loader to break up the curb along Skyhawk Drive and allow the water to flow downstream in a westerly direction onto the paved turnaround and then southeast with stormwater drainage along Skyhawk Drive. Mr. Floyd reported that Ed Strolsky, Director of Larad Services, observed the loader uncovered what appeared to be the tops of several drums as it scraped and disturbed the grass and soil near the curb. Mr. Floyd indicated that the lids of the drums were ajar, and the contents were unknown although at first they thought the contents were tar, possibly buried by the contractor for the original construction of the housing units. He indicated the suspected drums were then covered back over with the removed soil.

Mr. Floyd reported that there have been long-standing issues of surface drainage from the southwest border of the property spilling over across Decker Road. An engineering company was hired to do a study and drainage correction plan. The 75% design was implemented but not the portion of drainage

**FINDINGS OF SUITABILITY TO TRANSFER  
INTERVIEW RECORD**

system off Navy property; further action by the township is still required to fully implement the design. The Navy installed a standpipe system but existing detention basin is still not sufficient. Dewberry & Davis did a plan for two additional detention basins, but Mr. Floyd said that plan was rejected.

During inspection of housing unit at 1131 Viking Road, Mr. Floyd reported that the units all have new windows, new paint on the interior trim, and were renovated with new gas-fired furnaces and hot-water heaters in 1994-95. He reported that the units receive town water and sewer services.

Mr. Floyd provided copies of the Asbestos Management and Lead Management Plans that apply to the Shenandoah Woods housing complex.

**FINDINGS OF SUITABILITY TO TRANSFER  
INTERVIEW RECORD**

**SUBJECT PROPERTY NAME:**

Shenandoah Woods Housing Complex, Warminster, Pennsylvania (NASJRB Willow Grove)

**INTERVIEW DATE:**

25 March 2009

**INTERVIEWERS:**

Ms. Amy Stattel, Tetra Tech NUS, Inc.

Ms. Samantha Brenner, Tetra Tech NUS, Inc.

**PERSONS INTERVIEWED:**

Mr. Ed Strolsky, Director, Larad Services (housing contractor, NASJRB Willow Grove)

**INTERVIEW LOCATION/SETTING:**

NASJRB Willow Grove, Housing Office, Building 148, FOST Kickoff Meeting  
(In Person)

**INTERVIEW LOG:**

Mr. Strolsky reported that about five years ago, heavy rainfall during Hurricane Floyd caused water to back up in the back yard of unit #571, or 403 Skyhawk Drive. Mr. Strolsky's company, Larad Services, had to perform an emergency drainage measure in the middle of the night to prevent water from flowing in the back patio door at this housing unit. They used a loader to break up the curb along Skyhawk Drive releasing the water pooled up on the grass behind the curb. As the loader scraped the grass and soil near the curb, they uncovered several suspected drums with the lids ajar. Mr. Strolsky reported that the suspected drums had unknown contents, that appeared to be purple and almost "fluorescent". He indicated the drums were then covered back over with the removed soil and to his knowledge were left in place since that time. He reported he did not uncover any other wastes or debris during grounds maintenance activities at Shenandoah Woods, including installation of drains along Skyhawk Drive.

9 APR 2015

MEMORANDUM FOR THE RECORD

Subj: SHENANDOAH WOODS HOUSING COMPLEX WARMINSTER, PENNSYLVANIA  
VISUAL SITE INSPECTION OF 9 APRIL 2015

Ref: (a) FOST of Subject Property, July 2012

1. This memorandum documents a visual site inspection of the Shenandoah Woods Housing Complex, Warminster, Pennsylvania (hereafter Subject Property). The purpose of the 9 April 2015 site inspection was to verify site information from reference (a).

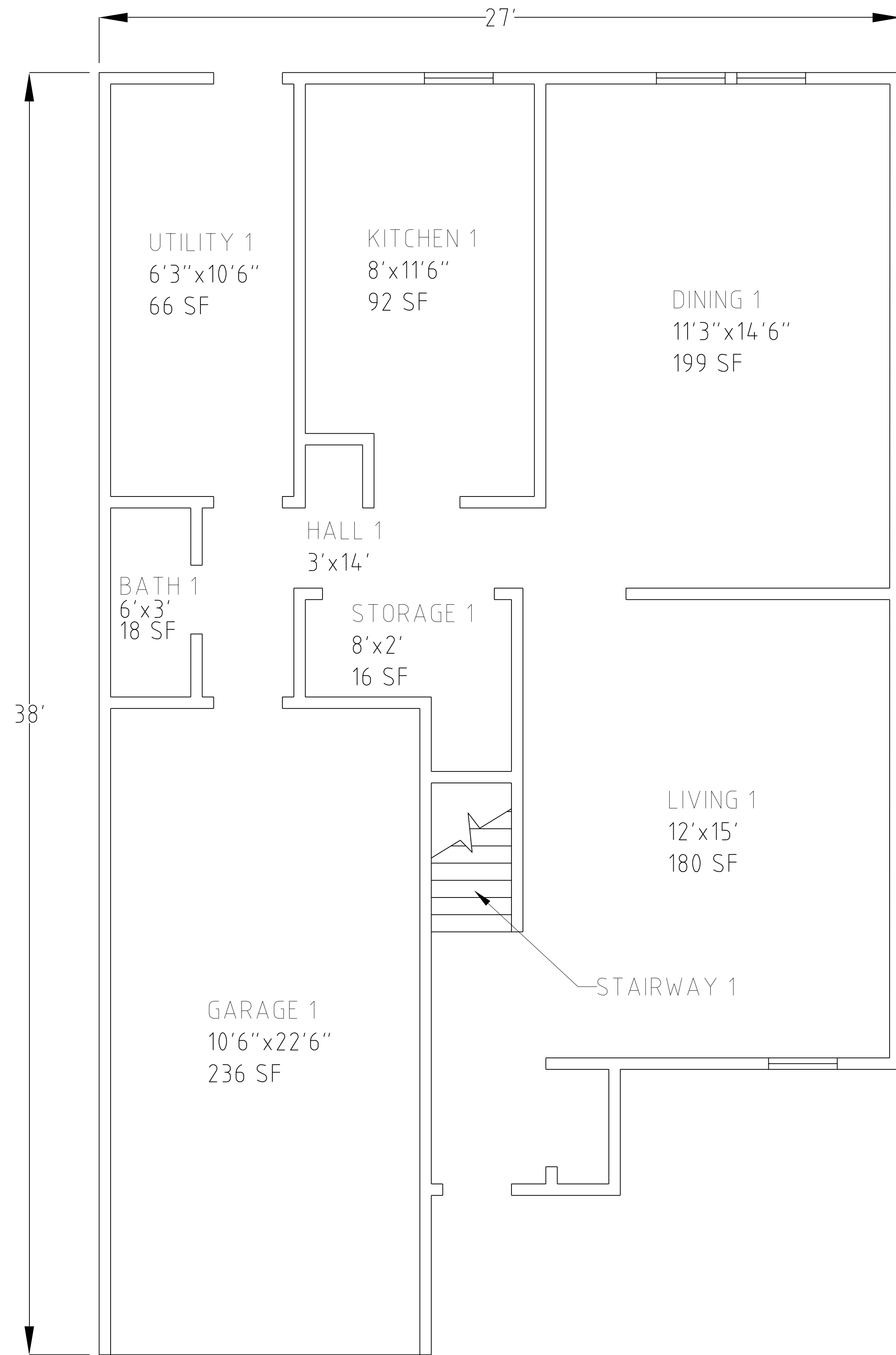
2. Attendees: Willington Lin, Martin Schy, Jeffrey Dale, and James Rugh from NAVFAC BRAC Program Management Office.

3. No changes to conditions identified in paragraph 3.0 of reference (a) were observed.

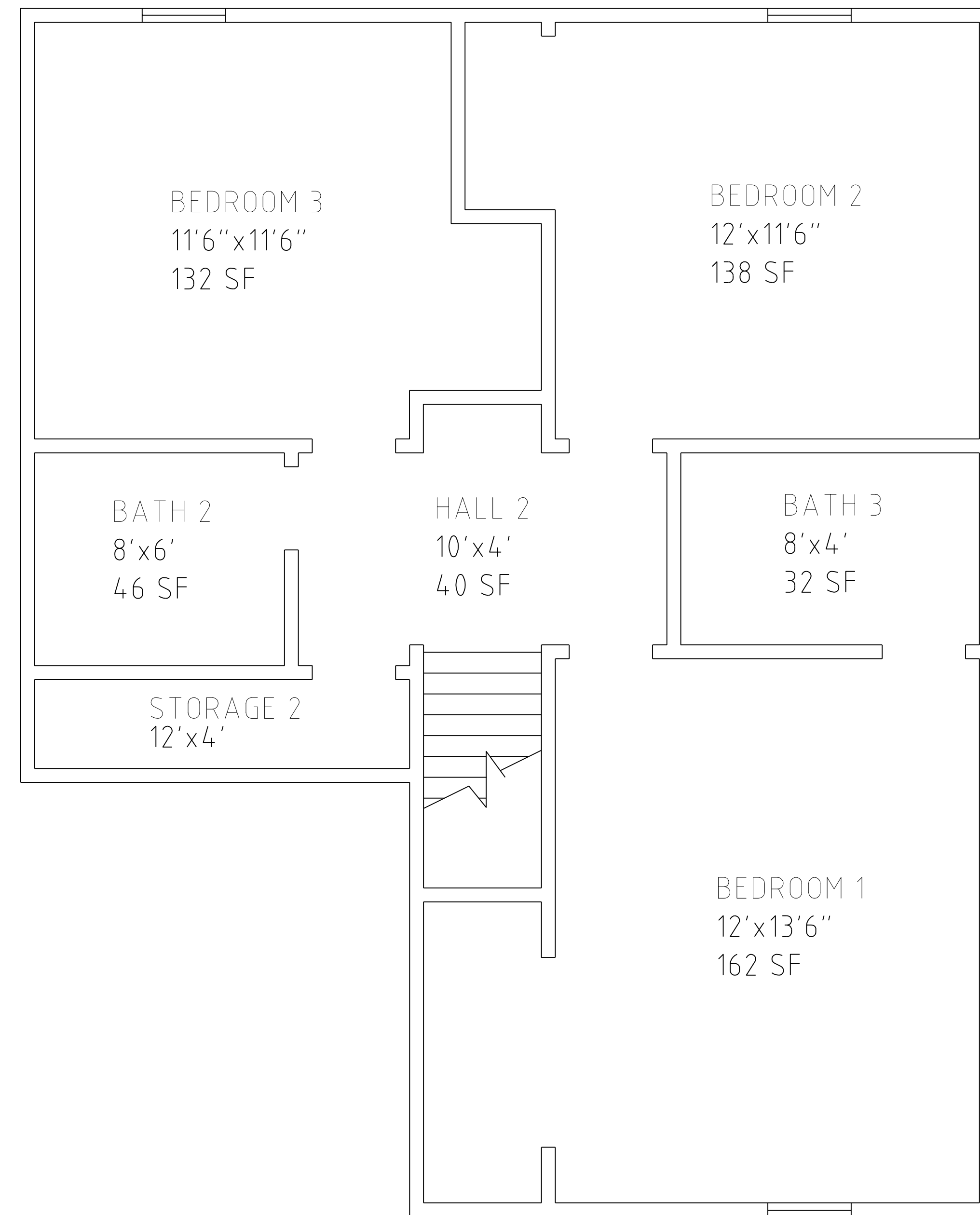
A handwritten signature in black ink, appearing to read 'W. LIN', with a horizontal line extending to the right.

W. LIN  
BRAC Environmental Coordinator  
NAVFAC BRAC PMO

## Floor Plans

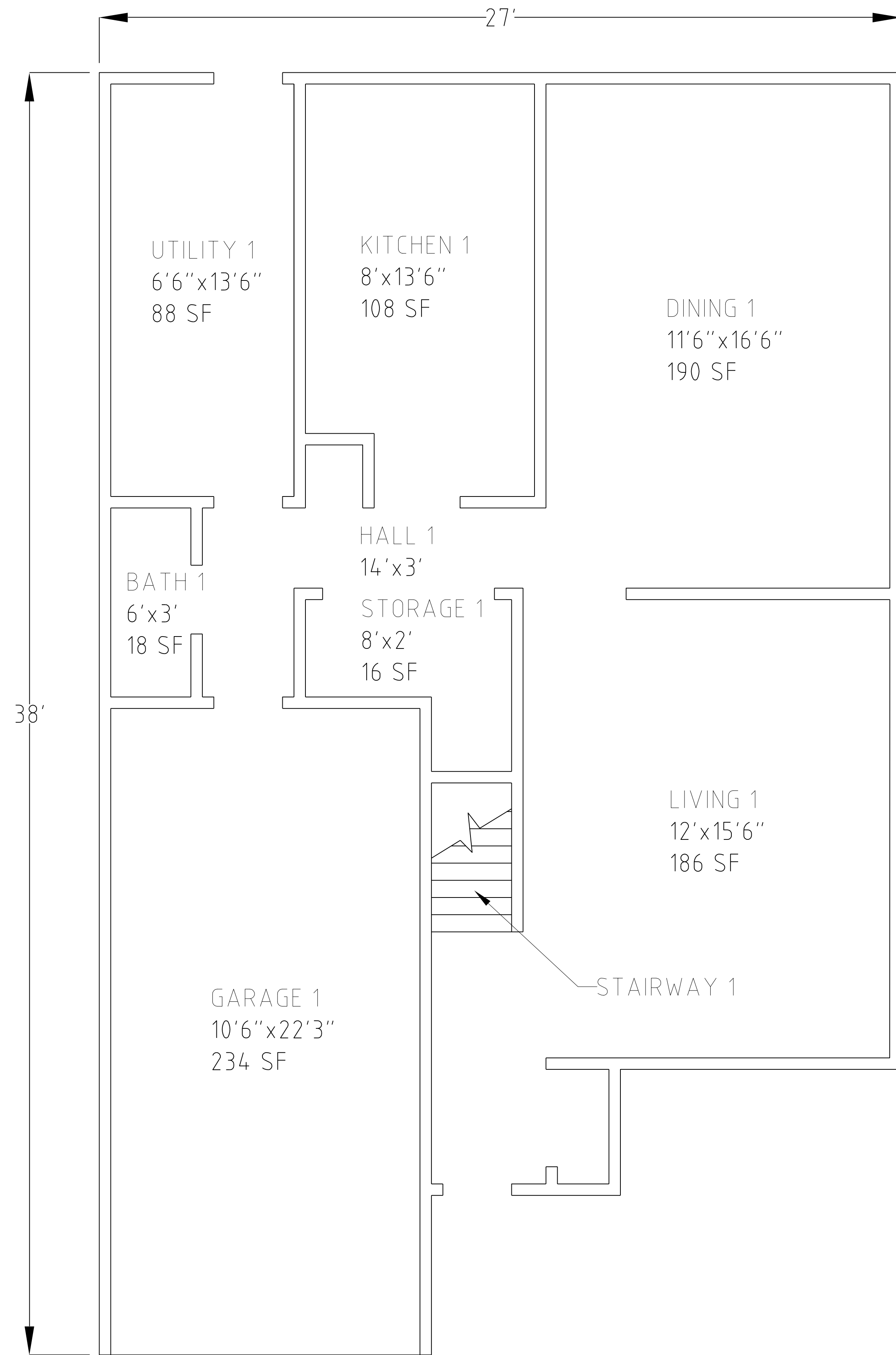


FIRST FLOOR

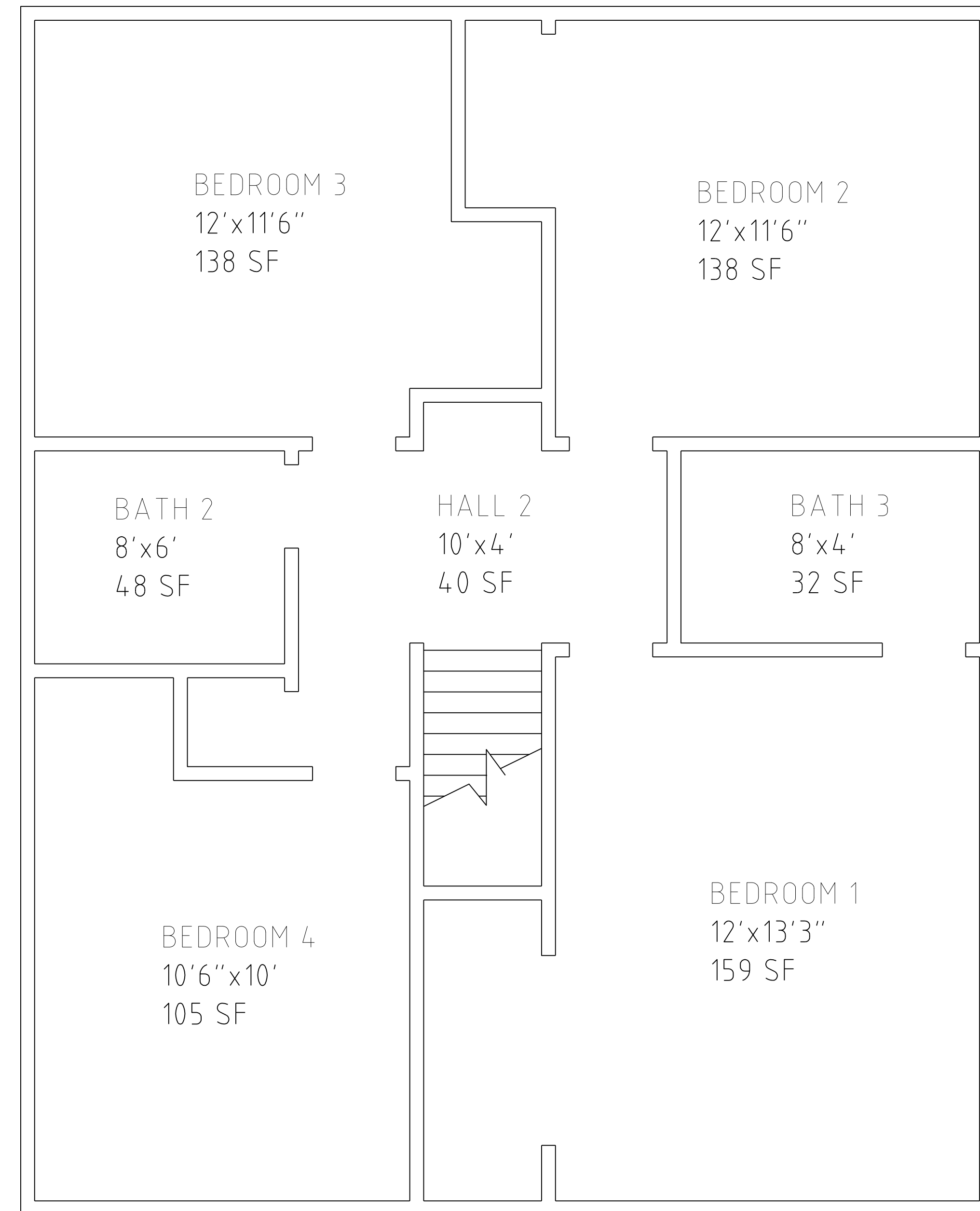


SECOND FLOOR





FIRST FLOOR



SECOND FLOOR

**Site Photographs**

**Naval Air Station Joint Reserve Base – Willow Grove  
Shenandoah Woods Housing Complex  
Warminster, Pennsylvania**

**25 March 2009**



Photo 1  
Typical Shenandoah Woods Housing Unit



Photo 2  
Shenandoah Woods Power Transfer Station





Photo 3  
Stormwater Retention Pond  
Located South of Facilities Maintenance Department Garage



Photo 4  
Curbing Removed to Facilitate Drainage during Hurricane Floyd  
Located on the Northern Portion of the Property Near 403 Skyhawk Drive



Photo 5  
Recreation Fields  
Located on the Southwestern Portion of the Subject Property



Photo 6  
Shenandoah Woods Housing Maintenance Building

**Exhibit E**

**CERCLA Hazardous Substances Notice**

**EXHIBIT E**  
**CERCLA HAZARDOUS SUBSTANCE NOTICE**  
**SHENANDOAH WOODS HOUSING COMPLEX**  
**WARMINSTER, PENNSYLVANIA**

Location	Substance Name	CAS Registry Number	40 CFR 302.4 Regulatory Synonyms	RCRA Waste Number	Quantity Stored	Date of Storage	Quantity Released	Date of Release	Response
Site 5 North, East and South of Building 401 and West of Building 403	Solid Waste including ash, wood, glass, cardboard, paper, tree limbs, roots, brick, wire, charcoal and scrap metal in a matrix of fill material	79-01-6	Trichloroethene	F001	Unknown	1960 to mid 1980's	Unknown	Unknown	RI, Risk Assessment, "No Action" ROD (September 2000)
		1336363	Aroclors, PBCs	-	Unknown	1960 to mid 1980's	Unknown	Unknown	RI, Risk Assessment, "No Action" ROD (September 2000)
		50-32-8	Benzo(a)pyrene	U022	Unknown	1960 to mid 1980's	Unknown	Unknown	RI, Risk Assessment, "No Action" ROD (September 2000)

**Exhibit F**  
**Hazard Advisory Statements**



**ASBESTOS-CONTAINING MATERIALS  
HAZARD DISCLOSURE AND ACKNOWLEDGMENT FORM**

**ASBESTOS WARNING STATEMENT**

YOU ARE ADVISED THAT CERTAIN HOUSING UNITS WITHIN THE SHENANDOAH WOODS HOUSING COMPLEX AT NAVAL AIR STATION JOINT RESERVE BASE WILLOW GROVE, PENNSYLVANIA HAVE ASBESTOS-CONTAINING MATERIALS. INDIVIDUALS (WORKERS) MAY SUFFER ADVERSE HEALTH EFFECTS AS A RESULT OF INHALATION EXPOSURE TO ASBESTOS. THESE ADVERSE HEALTH EFFECTS INCLUDE ASBESTOSIS (PULMONARY FIBROSIS) AND MESOTHELIOMAS (BENIGN OR MALIGNANT TUMORS).

**ACKNOWLEDGMENT**

I acknowledge that:

- (1) I have read and understand the above-stated Asbestos Warning Statement.
- (2) I have received from the Government the following document(s): (a) *Asbestos Management Plan, Shenandoah Woods, Naval Air Station Joint Reserve Base Willow Grove, Warminster, Pennsylvania* (Navy, 1996a); (b) *Asbestos Inspection Summary Report, NASJRB Willow Grove* (Baker, 2011a); and (c) *Finding of Suitability to Transfer, Naval Air Station Joint Reserve Base-Willow Grove, Shenandoah Woods Housing Complex, Warminster, Pennsylvania* (BRAC PMO East, 2015) representing the best information available to the Government as to the presence of and condition of asbestos-containing-materials hazards in the housing units covered by this transfer (deed).

Buildings and housing units known to contain friable and damaged ACM are listed on the below table.

**Friable, Accessible, Damaged ACM at Shenandoah Woods Housing Buildings**

<b>Building Number</b>	<b>Unit Number(s)</b>	<b>Material</b>	<b>Area in Square Feet</b>
415	607	Black floor adhesive under parquet flooring material	4422
417	617	Black floor adhesive under parquet flooring material	3721
421	1097, 1101, 1107	Black floor adhesive under parquet flooring material	4206
430	1097, 1103, 1105	Black floor adhesive under vinyl floor tile	3721
432	1119, 1127	Black floor adhesive under vinyl floor tile	2420
433	1131, 1139	Black floor adhesive under vinyl floor tile	2420
434	1146	Black floor adhesive under vinyl floor tile	1928
435	1134	Black floor adhesive under vinyl floor tile	2892
436	1116, 1118, 1120	Black floor adhesive under vinyl floor tile	2420
436	1116, 1120	Black floor adhesive under parquet flooring material	3721
437	1102	Black floor adhesive under vinyl floor tile	32

- (3) I understand that my failure to inspect or to become fully informed of the condition of all or any portion of the property offered will not constitute grounds for any claim or demand for adjustment or withdrawal of any bid or offer made after its opening or tender.
  
- (4) I understand that, upon execution of this transfer (deed), I shall assume full responsibility for preventing future asbestos exposure by properly managing and maintaining or, as required by applicable federal, State, or local laws or regulations, for abating any asbestos hazard that may pose a risk to human health.

\_\_\_\_\_  
Transferee (or duly authorized agent)

\_\_\_\_\_  
Date

**LEAD-BASED PAINT HAZARD  
DISCLOSURE AND ACKNOWLEDGMENT FORM**

**LEAD WARNING STATEMENT**

YOU ARE ADVISED THAT STRUCTURES CONSTRUCTED PRIOR TO 1978 MAY PRESENT EXPOSURE TO LEAD FROM LEAD-BASED PAINT THAT MAY PLACE YOUNG CHILDREN AT RISK OF DEVELOPING LEAD POISONING. LEAD POISONING IN YOUNG CHILDREN MAY PRODUCE PERMANENT NEUROLOGICAL DAMAGE. YOU ARE FURTHER ADVISED THAT LEAD POISONING ALSO POSES A PARTICULAR RISK TO PREGNANT WOMEN. WORKERS MAY ALSO SUFFER ADVERSE HEALTH EFFECTS FROM LEAD DUST AND FUME EXPOSURE

**ACKNOWLEDGMENT**

I acknowledge that:

1. I have read and understand the above stated Lead Warning Statement;
2. I have received from the Federal Government the following document(s): (a) *Lead Management Plan, Shenandoah Woods, Naval Air Station Joint Reserve Base Willow Grove, Warminster, Pennsylvania* (Navy, 1996b); (b) *Lead-Based Paint Inspection Summary Report for NASJRB Willow Grove* (Baker, 2011b); and (c) *Finding of Suitability to Transfer, Naval Air Station Joint Reserve Base-Willow Grove, Shenandoah Woods Housing Complex, Warminster, Pennsylvania* (BRAC PMO East, 2015), representing the best information available to the Government as to the presence of Lead-Based Paint and Lead-Based Paint hazards for the buildings covered by this Transfer;
3. I understand that my failure to inspect, or to become fully informed as to the condition of all or any portion of the property offered will not constitute grounds for any claim or demand for adjustment or withdrawal of any bid or offer made after its opening or tender; and
4. I understand that upon execution of this Transfer, I shall assume full responsibility for preventing future lead exposure by properly managing and maintaining or, as required by applicable Federal, state, or local laws or regulations, for abating any lead-based paint hazard that may pose a risk to human health.

\_\_\_\_\_  
Transferee (or duly authorized agent)

\_\_\_\_\_  
Date



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# Protect Your Family From Lead in Your Home

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United States  
Consumer Product  
Safety Commission



United States  
Department of Housing  
and Urban Development

## Are You Planning to Buy or Rent a Home Built Before 1978?

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Did you know that many homes built before 1978 have **lead-based paint**? Lead from paint, chips, and dust can pose serious health hazards.

### Read this entire brochure to learn:

- How lead gets into the body
- About health effects of lead
- What you can do to protect your family
- Where to go for more information

### Before renting or buying a pre-1978 home or apartment, federal law requires:

- Sellers must disclose known information on lead-based paint or lead-based paint hazards before selling a house.
- Real estate sales contracts must include a specific warning statement about lead-based paint. Buyers have up to 10 days to check for lead.
- Landlords must disclose known information on lead-based paint and lead-based paint hazards before leases take effect. Leases must include a specific warning statement about lead-based paint.

### If undertaking renovations, repairs, or painting (RRP) projects in your pre-1978 home or apartment:

- Read EPA's pamphlet, *The Lead-Safe Certified Guide to Renovate Right*, to learn about the lead-safe work practices that contractors are required to follow when working in your home (see page 12).



## Simple Steps to Protect Your Family from Lead Hazards

### If you think your home has lead-based paint:

- Don't try to remove lead-based paint yourself.
- Always keep painted surfaces in good condition to minimize deterioration.
- Get your home checked for lead hazards. Find a certified inspector or risk assessor at [epa.gov/lead](https://www.epa.gov/lead).
- Talk to your landlord about fixing surfaces with peeling or chipping paint.
- Regularly clean floors, window sills, and other surfaces.
- Take precautions to avoid exposure to lead dust when remodeling.
- When renovating, repairing, or painting, hire only EPA- or state-approved Lead-Safe certified renovation firms.
- Before buying, renting, or renovating your home, have it checked for lead-based paint.
- Consult your health care provider about testing your children for lead. Your pediatrician can check for lead with a simple blood test.
- Wash children's hands, bottles, pacifiers, and toys often.
- Make sure children avoid fatty (or high fat) foods and eat nutritious meals high in iron and calcium.
- Remove shoes or wipe soil off shoes before entering your house.

## Lead Gets into the Body in Many Ways

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### Adults and children can get lead into their bodies if they:

- Breathe in lead dust (especially during activities such as renovations, repairs, or painting that disturb painted surfaces).
- Swallow lead dust that has settled on food, food preparation surfaces, and other places.
- Eat paint chips or soil that contains lead.

### Lead is especially dangerous to children under the age of 6.

- At this age, children's brains and nervous systems are more sensitive to the damaging effects of lead.
- Children's growing bodies absorb more lead.
- Babies and young children often put their hands and other objects in their mouths. These objects can have lead dust on them.



### Women of childbearing age should know that lead is dangerous to a developing fetus.

- Women with a high lead level in their system before or during pregnancy risk exposing the fetus to lead through the placenta during fetal development.

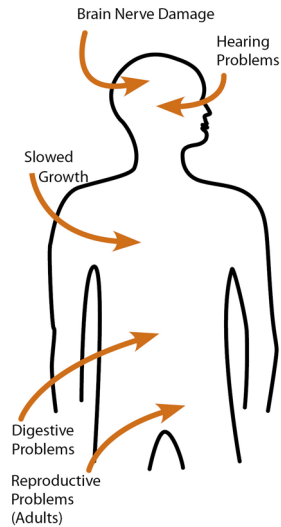
## Health Effects of Lead

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**Lead affects the body in many ways.** It is important to know that even exposure to low levels of lead can severely harm children.

### **In children, exposure to lead can cause:**

- Nervous system and kidney damage
- Learning disabilities, attention deficit disorder, and decreased intelligence
- Speech, language, and behavior problems
- Poor muscle coordination
- Decreased muscle and bone growth
- Hearing damage



While low-lead exposure is most common, exposure to high amounts of lead can have devastating effects on children, including seizures, unconsciousness, and, in some cases, death.

Although children are especially susceptible to lead exposure, lead can be dangerous for adults, too.

### **In adults, exposure to lead can cause:**

- Harm to a developing fetus
- Increased chance of high blood pressure during pregnancy
- Fertility problems (in men and women)
- High blood pressure
- Digestive problems
- Nerve disorders
- Memory and concentration problems
- Muscle and joint pain



## Check Your Family for Lead

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**Get your children and home tested if you think your home has lead.**

Children's blood lead levels tend to increase rapidly from 6 to 12 months of age, and tend to peak at 18 to 24 months of age.

Consult your doctor for advice on testing your children. A simple blood test can detect lead. Blood lead tests are usually recommended for:

- Children at ages 1 and 2
- Children or other family members who have been exposed to high levels of lead
- Children who should be tested under your state or local health screening plan

**Your doctor can explain what the test results mean and if more testing will be needed.**

## Where Lead-Based Paint Is Found

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In general, the older your home or childcare facility, the more likely it has lead-based paint.<sup>1</sup>

**Many homes, including private, federally-assisted, federally-owned housing, and childcare facilities built before 1978 have lead-based paint.** In 1978, the federal government banned consumer uses of lead-containing paint.<sup>2</sup>

Learn how to determine if paint is lead-based paint on page 7.

### Lead can be found:

- In homes and childcare facilities in the city, country, or suburbs,
- In private and public single-family homes and apartments,
- On surfaces inside and outside of the house, and
- In soil around a home. (Soil can pick up lead from exterior paint or other sources, such as past use of leaded gas in cars.)

Learn more about where lead is found at [epa.gov/lead](https://www.epa.gov/lead).

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<sup>1</sup> “Lead-based paint” is currently defined by the federal government as paint with lead levels greater than or equal to 1.0 milligram per square centimeter (mg/cm), or more than 0.5% by weight.

<sup>2</sup> “Lead-containing paint” is currently defined by the federal government as lead in new dried paint in excess of 90 parts per million (ppm) by weight.

# Identifying Lead-Based Paint and Lead-Based Paint Hazards

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**Deteriorating lead-based paint (peeling, chipping, chalking, cracking, or damaged paint)** is a hazard and needs immediate attention. **Lead-based paint** may also be a hazard when found on surfaces that children can chew or that get a lot of wear and tear, such as:

- On windows and window sills
- Doors and door frames
- Stairs, railings, banisters, and porches

**Lead-based paint is usually not a hazard if it is in good condition** and if it is not on an impact or friction surface like a window.

**Lead dust** can form when lead-based paint is scraped, sanded, or heated. Lead dust also forms when painted surfaces containing lead bump or rub together. Lead paint chips and dust can get on surfaces and objects that people touch. Settled lead dust can reenter the air when the home is vacuumed or swept, or when people walk through it. EPA currently defines the following levels of lead in dust as hazardous:

- 40 micrograms per square foot ( $\mu\text{g}/\text{ft}^2$ ) and higher for floors, including carpeted floors
- 250  $\mu\text{g}/\text{ft}^2$  and higher for interior window sills

**Lead in soil** can be a hazard when children play in bare soil or when people bring soil into the house on their shoes. EPA currently defines the following levels of lead in soil as hazardous:

- 400 parts per million (ppm) and higher in play areas of bare soil
- 1,200 ppm (average) and higher in bare soil in the remainder of the yard

**Remember, lead from paint chips—which you can see—and lead dust—which you may not be able to see—both can be hazards.**

The only way to find out if paint, dust, or soil lead hazards exist is to test for them. The next page describes how to do this.

## Checking Your Home for Lead

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You can get your home tested for lead in several different ways:

- A lead-based paint **inspection** tells you if your home has lead-based paint and where it is located. It won't tell you whether your home currently has lead hazards. A trained and certified testing professional, called a lead-based paint inspector, will conduct a paint inspection using methods, such as:
  - Portable x-ray fluorescence (XRF) machine
  - Lab tests of paint samples
- A **risk assessment** tells you if your home currently has any lead hazards from lead in paint, dust, or soil. It also tells you what actions to take to address any hazards. A trained and certified testing professional, called a risk assessor, will:
  - Sample paint that is deteriorated on doors, windows, floors, stairs, and walls
  - Sample dust near painted surfaces and sample bare soil in the yard
  - Get lab tests of paint, dust, and soil samples
- A combination inspection and risk assessment tells you if your home has any lead-based paint and if your home has any lead hazards, and where both are located.



Be sure to read the report provided to you after your inspection or risk assessment is completed, and ask questions about anything you do not understand.

## Checking Your Home for Lead, continued

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In preparing for renovation, repair, or painting work in a pre-1978 home, Lead-Safe Certified renovators (see page 12) may:

- Take paint chip samples to determine if lead-based paint is present in the area planned for renovation and send them to an EPA-recognized lead lab for analysis. In housing receiving federal assistance, the person collecting these samples must be a certified lead-based paint inspector or risk assessor
- Use EPA-recognized tests kits to determine if lead-based paint is absent (but not in housing receiving federal assistance)
- Presume that lead-based paint is present and use lead-safe work practices

There are state and federal programs in place to ensure that testing is done safely, reliably, and effectively. Contact your state or local agency for more information, visit [epa.gov/lead](https://www.epa.gov/lead), or call **1-800-424-LEAD (5323)** for a list of contacts in your area.<sup>3</sup>

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<sup>3</sup> Hearing- or speech-challenged individuals may access this number through TTY by calling the Federal Relay Service at 1-800-877-8399.

## What You Can Do Now to Protect Your Family

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**If you suspect that your house has lead-based paint hazards, you can take some immediate steps to reduce your family's risk:**

- If you rent, notify your landlord of peeling or chipping paint.
- Keep painted surfaces clean and free of dust. Clean floors, window frames, window sills, and other surfaces weekly. Use a mop or sponge with warm water and a general all-purpose cleaner. (Remember: never mix ammonia and bleach products together because they can form a dangerous gas.)
- Carefully clean up paint chips immediately without creating dust.
- Thoroughly rinse sponges and mop heads often during cleaning of dirty or dusty areas, and again afterward.
- Wash your hands and your children's hands often, especially before they eat and before nap time and bed time.
- Keep play areas clean. Wash bottles, pacifiers, toys, and stuffed animals regularly.
- Keep children from chewing window sills or other painted surfaces, or eating soil.
- When renovating, repairing, or painting, hire only EPA- or state-approved Lead-Safe Certified renovation firms (see page 12).
- Clean or remove shoes before entering your home to avoid tracking in lead from soil.
- Make sure children avoid fatty (or high fat) foods and eat nutritious meals high in iron and calcium. Children with good diets absorb less lead.

## Reducing Lead Hazards

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**Disturbing lead-based paint or removing lead improperly can increase the hazard to your family by spreading even more lead dust around the house.**

- In addition to day-to-day cleaning and good nutrition, you can **temporarily** reduce lead-based paint hazards by taking actions, such as repairing damaged painted surfaces and planting grass to cover lead-contaminated soil. These actions are not permanent solutions and will need ongoing attention.
- You can minimize exposure to lead when renovating, repairing, or painting by hiring an EPA- or state-certified renovator who is trained in the use of lead-safe work practices. If you are a do-it-yourselfer, learn how to use lead-safe work practices in your home.
- To remove lead hazards permanently, you should hire a certified lead abatement contractor. Abatement (or permanent hazard elimination) methods include removing, sealing, or enclosing lead-based paint with special materials. Just painting over the hazard with regular paint is not permanent control.



**Always use a certified contractor who is trained to address lead hazards safely.**

- Hire a Lead-Safe Certified firm (see page 12) to perform renovation, repair, or painting (RRP) projects that disturb painted surfaces.
- To correct lead hazards permanently, hire a certified lead abatement professional. This will ensure your contractor knows how to work safely and has the proper equipment to clean up thoroughly.

Certified contractors will employ qualified workers and follow strict safety rules as set by their state or by the federal government.

## Reducing Lead Hazards, continued

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**If your home has had lead abatement work done** or if the housing is receiving federal assistance, once the work is completed, dust cleanup activities must be conducted until clearance testing indicates that lead dust levels are below the following levels:

- 40 micrograms per square foot ( $\mu\text{g}/\text{ft}^2$ ) for floors, including carpeted floors
- 250  $\mu\text{g}/\text{ft}^2$  for interior windows sills
- 400  $\mu\text{g}/\text{ft}^2$  for window troughs

For help in locating certified lead abatement professionals in your area, call your state or local agency (see pages 14 and 15), or visit [epa.gov/lead](https://www.epa.gov/lead), or call 1-800-424-LEAD.



# Renovating, Remodeling, or Repairing (RRP) a Home with Lead-Based Paint

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**If you hire a contractor to conduct renovation, repair, or painting (RRP) projects in your pre-1978 home or childcare facility (such as pre-school and kindergarten), your contractor must:**

- Be a Lead-Safe Certified firm approved by EPA or an EPA-authorized state program
- Use qualified trained individuals (Lead-Safe Certified renovators) who follow specific lead-safe work practices to prevent lead contamination
- Provide a copy of EPA's lead hazard information document, *The Lead-Safe Certified Guide to Renovate Right*



**RRP contractors working in pre-1978 homes and childcare facilities must follow lead-safe work practices that:**

- **Contain the work area.** The area must be contained so that dust and debris do not escape from the work area. Warning signs must be put up, and plastic or other impermeable material and tape must be used.
- **Avoid renovation methods that generate large amounts of lead-contaminated dust.** Some methods generate so much lead-contaminated dust that their use is prohibited. They are:
  - Open-flame burning or torching
  - Sanding, grinding, planing, needle gunning, or blasting with power tools and equipment not equipped with a shroud and HEPA vacuum attachment and
  - Using a heat gun at temperatures greater than 1100°F
- **Clean up thoroughly.** The work area should be cleaned up daily. When all the work is done, the area must be cleaned up using special cleaning methods.
- **Dispose of waste properly.** Collect and seal waste in a heavy duty bag or sheeting. When transported, ensure that waste is contained to prevent release of dust and debris.

To learn more about EPA's requirements for RRP projects visit [epa.gov/getleadsafe](http://epa.gov/getleadsafe), or read *The Lead-Safe Certified Guide to Renovate Right*.

## Other Sources of Lead

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**While paint, dust, and soil are the most common sources of lead, other lead sources also exist:**

- **Drinking water.** Your home might have plumbing with lead or lead solder. You cannot see, smell, or taste lead, and boiling your water will not get rid of lead. If you think your plumbing might contain lead:
  - Use only cold water for drinking and cooking.
  - Run water for 15 to 30 seconds before drinking it, especially if you have not used your water for a few hours.

Call your local health department or water supplier to find out about testing your water, or visit [epa.gov/lead](https://www.epa.gov/lead) for EPA's lead in drinking water information.

- **Lead smelters** or other industries that release lead into the air.
- **Your job.** If you work with lead, you could bring it home on your body or clothes. Shower and change clothes before coming home. Launder your work clothes separately from the rest of your family's clothes.
- **Hobbies** that use lead, such as making pottery or stained glass, or refinishing furniture. Call your local health department for information about hobbies that may use lead.
- Old **toys** and **furniture** may have been painted with lead-containing paint. Older toys and other children's products may have parts that contain lead.<sup>4</sup>
- Food and liquids cooked or stored in **lead crystal** or **lead-glazed pottery or porcelain** may contain lead.
- Folk remedies, such as "**greta**" and "**azarcon,**" used to treat an upset stomach.

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<sup>4</sup> In 1978, the federal government banned toys, other children's products, and furniture with lead-containing paint (16 CFR 1303). In 2008, the federal government banned lead in most children's products. The federal government currently bans lead in excess of 100 ppm by weight in most children's products (76 FR 44463).

## For More Information

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### **The National Lead Information Center**

Learn how to protect children from lead poisoning and get other information about lead hazards on the Web at [epa.gov/lead](http://epa.gov/lead) and [hud.gov/lead](http://hud.gov/lead), or call **1-800-424-LEAD (5323)**.

### **EPA's Safe Drinking Water Hotline**

For information about lead in drinking water, call **1-800-426-4791**, or visit [epa.gov/lead](http://epa.gov/lead) for information about lead in drinking water.

### **Consumer Product Safety Commission (CPSC) Hotline**

For information on lead in toys and other consumer products, or to report an unsafe consumer product or a product-related injury, call **1-800-638-2772**, or visit CPSC's website at [cpsc.gov](http://cpsc.gov) or [saferproducts.gov](http://saferproducts.gov).

### **State and Local Health and Environmental Agencies**

Some states, tribes, and cities have their own rules related to lead-based paint. Check with your local agency to see which laws apply to you. Most agencies can also provide information on finding a lead abatement firm in your area, and on possible sources of financial aid for reducing lead hazards. Receive up-to-date address and phone information for your state or local contacts on the Web at [epa.gov/lead](http://epa.gov/lead), or contact the National Lead Information Center at **1-800-424-LEAD**.

Hearing- or speech-challenged individuals may access any of the phone numbers in this brochure through TTY by calling the toll-free Federal Relay Service at **1-800-877-8339**.

# U. S. Environmental Protection Agency (EPA)

## Regional Offices

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The mission of EPA is to protect human health and the environment. Your Regional EPA Office can provide further information regarding regulations and lead protection programs.

**Region 1** (Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont)

Regional Lead Contact  
U.S. EPA Region 1  
5 Post Office Square, Suite 100, OES 05-4  
Boston, MA 02109-3912  
(888) 372-7341

**Region 2** (New Jersey, New York, Puerto Rico, Virgin Islands)

Regional Lead Contact  
U.S. EPA Region 2  
2890 Woodbridge Avenue  
Building 205, Mail Stop 225  
Edison, NJ 08837-3679  
(732) 321-6671

**Region 3** (Delaware, Maryland, Pennsylvania, Virginia, DC, West Virginia)

Regional Lead Contact  
U.S. EPA Region 3  
1650 Arch Street  
Philadelphia, PA 19103  
(215) 814-2088

**Region 4** (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee)

Regional Lead Contact  
U.S. EPA Region 4  
AFC Tower, 12th Floor, Air, Pesticides & Toxics  
61 Forsyth Street, SW  
Atlanta, GA 30303  
(404) 562-8998

**Region 5** (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin)

Regional Lead Contact  
U.S. EPA Region 5 (DT-8J)  
77 West Jackson Boulevard  
Chicago, IL 60604-3666  
(312) 886-7836

**Region 6** (Arkansas, Louisiana, New Mexico, Oklahoma, Texas, and 66 Tribes)

Regional Lead Contact  
U.S. EPA Region 6  
1445 Ross Avenue, 12th Floor  
Dallas, TX 75202-2733  
(214) 665-2704

**Region 7** (Iowa, Kansas, Missouri, Nebraska)

Regional Lead Contact  
U.S. EPA Region 7  
11201 Renner Blvd.  
WWPD/TOPE  
Lenexa, KS 66219  
(800) 223-0425

**Region 8** (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming)

Regional Lead Contact  
U.S. EPA Region 8  
1595 Wynkoop St.  
Denver, CO 80202  
(303) 312-6966

**Region 9** (Arizona, California, Hawaii, Nevada)

Regional Lead Contact  
U.S. EPA Region 9 (CMD-4-2)  
75 Hawthorne Street  
San Francisco, CA 94105  
(415) 947-4280

**Region 10** (Alaska, Idaho, Oregon, Washington)

Regional Lead Contact  
U.S. EPA Region 10  
Solid Waste & Toxics Unit (WCM-128)  
1200 Sixth Avenue, Suite 900  
Seattle, WA 98101  
(206) 553-1200

## Consumer Product Safety Commission (CPSC)

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The CPSC protects the public against unreasonable risk of injury from consumer products through education, safety standards activities, and enforcement. Contact CPSC for further information regarding consumer product safety and regulations.

### CPSC

4330 East West Highway  
Bethesda, MD 20814-4421  
1-800-638-2772  
[cpsc.gov](http://cpsc.gov) or [saferproducts.gov](http://saferproducts.gov)

## U. S. Department of Housing and Urban Development (HUD)

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HUD's mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. Contact HUD's Office of Healthy Homes and Lead Hazard Control for further information regarding the Lead Safe Housing Rule, which protects families in pre-1978 assisted housing, and for the lead hazard control and research grant programs.

### HUD

451 Seventh Street, SW, Room 8236  
Washington, DC 20410-3000  
(202) 402-7698  
[hud.gov/offices/lead/](http://hud.gov/offices/lead/)

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# IMPORTANT!

## **Lead From Paint, Dust, and Soil in and Around Your Home Can Be Dangerous if Not Managed Properly**

- Children under 6 years old are most at risk for lead poisoning in your home.
- Lead exposure can harm young children and babies even before they are born.
- Homes, schools, and child care facilities built before 1978 are likely to contain lead-based paint.
- Even children who seem healthy may have dangerous levels of lead in their bodies.
- Disturbing surfaces with lead-based paint or removing lead-based paint improperly can increase the danger to your family.
- People can get lead into their bodies by breathing or swallowing lead dust, or by eating soil or paint chips containing lead.
- People have many options for reducing lead hazards. Generally, lead-based paint that is in good condition is not a hazard (see page 10).

**Exhibit G**  
**Perfluorinated Compounds**

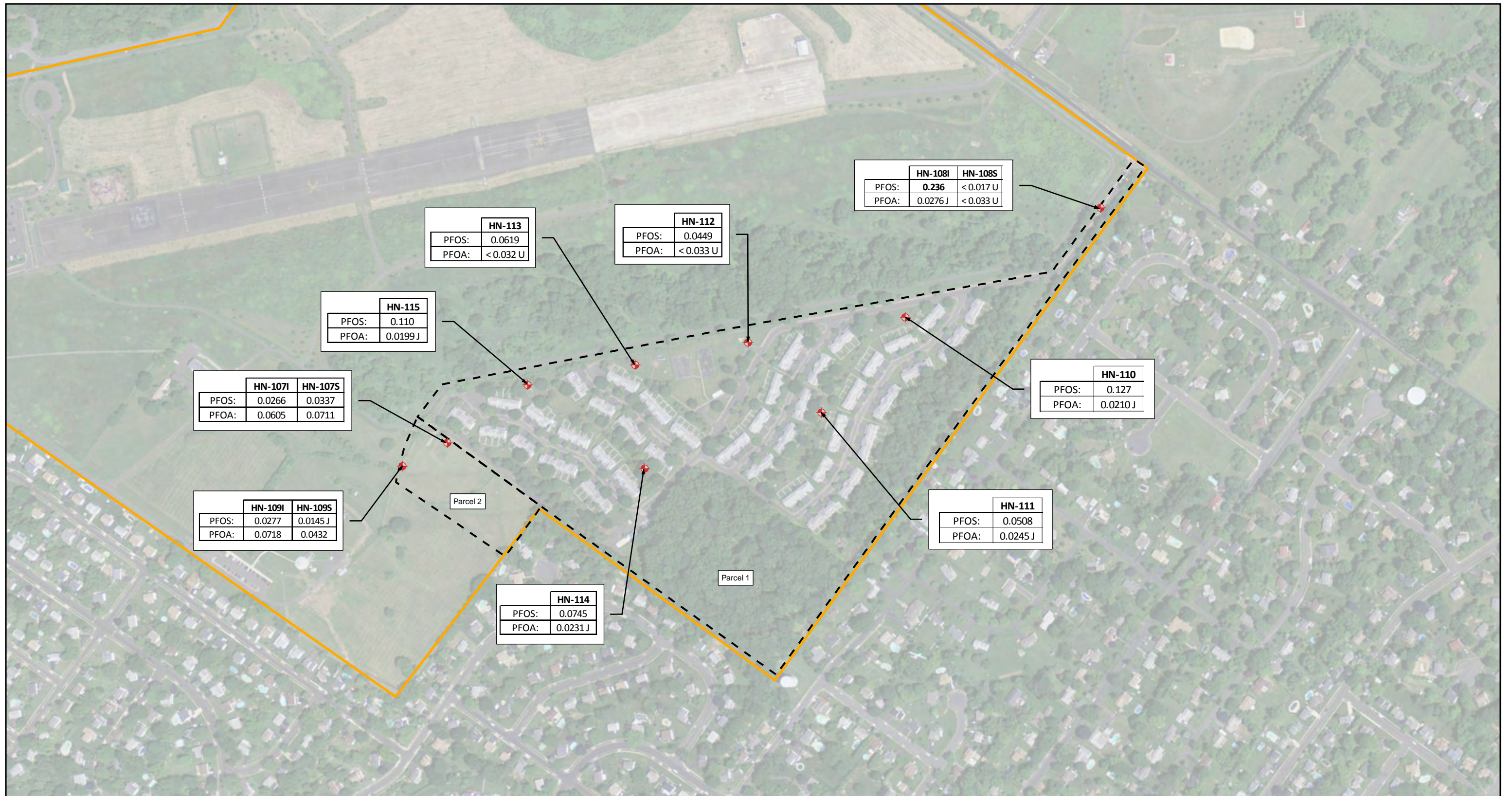
**Table 1**  
**PFC Investigation - April and July 2015**  
**Validated Results Summary**  
**NAWC Warminster - Shenandoah Woods**

				Sample ID	HN-1071_04162015	HN-107S_04162015	HN-108I_04172015	HN-108S_04172015	HN-109I_04162015	DUP-041615	HN-109S_04162015	FB-041615	FB-041715
				Location	HN-1071	HN-107S	HN-108I	HN-108S	HN-109I	HN-109S	HN-109S		
				Screen Interval	90-100	45-65	90-100	45-65	22-32	22-32	75-85		
				Sample Date	4/16/2015	4/16/2015	4/17/2015	4/17/2015	4/16/2015	4/16/2015	4/16/2015	4/16/2015	4/17/2015
				Sampled Delivery Group	FA23700	FA23700	FA23700	FA23700	FA23700	FA23700	FA23700	FA23700	FA23700
Chemical Name	CAS	Units	EPA Health Advisory Level										
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	µg/L	NA	< 0.015 U	< 0.015 U	0.0353	0.0664	0.0448	0.0414	0.0413	< 0.016 U	< 0.015 U	
Perfluoroheptanoic Acid (PFHpA)	375-85-9	µg/L	NA	< 0.015 U	0.00862 J	0.0259	< 0.017 U	< 0.017 U	< 0.016 U	< 0.017 U	< 0.016 U	< 0.015 U	
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	µg/L	NA	0.0398	0.0444	0.134	0.0131 J	0.0494	0.0262	0.0275	< 0.016 U	< 0.015 U	
Perfluorononanoic Acid (PFNA)	375-95-1	µg/L	NA	< 0.015 U	< 0.015 U	< 0.015 U	< 0.017 U	< 0.017 U	< 0.016 U	< 0.017 U	< 0.016 U	< 0.015 U	
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	µg/L	<b>0.2</b>	0.0266	0.0337	<b>0.236</b>	< 0.017 U	0.0277	0.0134 J	0.0145 J	< 0.016 U	< 0.015 U	
Perfluorooctanoic Acid (PFOA)	335-67-1	µg/L	<b>0.4</b>	0.0605	0.0711	0.0276 J	< 0.033 U	0.0718	0.0412	0.0432	< 0.032 U	< 0.031 U	

				Sample ID	HN-110_06302015	HN-111_07012015	HN-112_07012015	HN-113_07012015	HN-114_07012015	DUP-070115	HN-115_07012015	FB-07012015
				Location	HN-110	HN-111	HN-112	HN-113	HN-114	HN-115	HN-115	
				Screen Interval	15-25	15-25	15-25	15-25	15-25	15-25	15-25	
				Sample Date	6/30/2015	7/1/2015	7/1/2015	7/1/2015	7/1/2015	7/1/2015	7/1/2015	7/1/2015
				Sampled Delivery Group	FA25785	FA25785	FA25785	FA25785	FA25785	FA25785	FA25785	FA25785
Chemical Name	CAS	Units	EPA Health Advisory Level									
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	µg/L	NA	< 0.015 U	< 0.015 U	< 0.017 U	< 0.016 U	< 0.016 U	< 0.016 U	< 0.015 U	< 0.016 U	< 0.015 U
Perfluoroheptanoic Acid (PFHpA)	375-85-9	µg/L	NA	0.0293	< 0.015 U	< 0.017 U	< 0.016 U	< 0.016 U	< 0.016 U	< 0.015 U	< 0.016 U	< 0.015 U
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	µg/L	NA	0.0475	0.0254	0.0291	0.0165 J	0.0282	0.0401	0.0416	< 0.015 U	
Perfluorononanoic Acid (PFNA)	375-95-1	µg/L	NA	0.0132 J	< 0.015 U	< 0.017 U	< 0.016 U	< 0.016 U	< 0.015 U	< 0.016 U	< 0.015 U	
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	µg/L	<b>0.2</b>	0.127	0.0508	0.0449	0.0619	0.0745	0.104	0.110	< 0.015 U	
Perfluorooctanoic Acid (PFOA)	335-67-1	µg/L	<b>0.4</b>	0.0210 J	0.0245 J	< 0.033 U	< 0.032 U	0.0231 J	0.0194 J	0.0199 J	< 0.031 U	

Notes:  
CAS Chemical Abstracts Service Number  
U indicates not detected above reporting detection limit  
J indicates estimate value  
EPA Environmental Protection Agency  
Gray shading indicate exceedance of EPA Health Advisory Level  
µg/L micrograms per liter  
Screen Interval is expressed in feet below ground surface





Drawn: BC 8/6/2015  
 Approved: PJ 8/6/2015  
 Project #: 60276503

Map Location



Legend

- Monitoring Wells
- Site Parcel Boundaries
- Naval Air Warfare Center (NAWC) Site Boundary

Notes:  
 PFOS/PFOA results reported in micrograms per liter (µg/L)  
 PFOS - Perfluorooctanesulfonic acid, PFOA - Perfluorooctanoic acid  
 J - Estimated Concentration  
 U - Indicates not detected above reporting detection limit  
 ft - Feet

USEPA Preliminary Health Advisory Levels  
 PFOS - 0.2 µg/L, PFOA - 0.4 µg/L

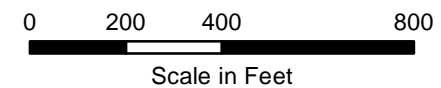


FIGURE 1

GROUNDWATER RESULTS  
 APRIL & JULY 2015  
 SHENANDOAH WOODS  
 NAWC WARMINSTER  
 BUCKS COUNTY, PENNSYLVANIA



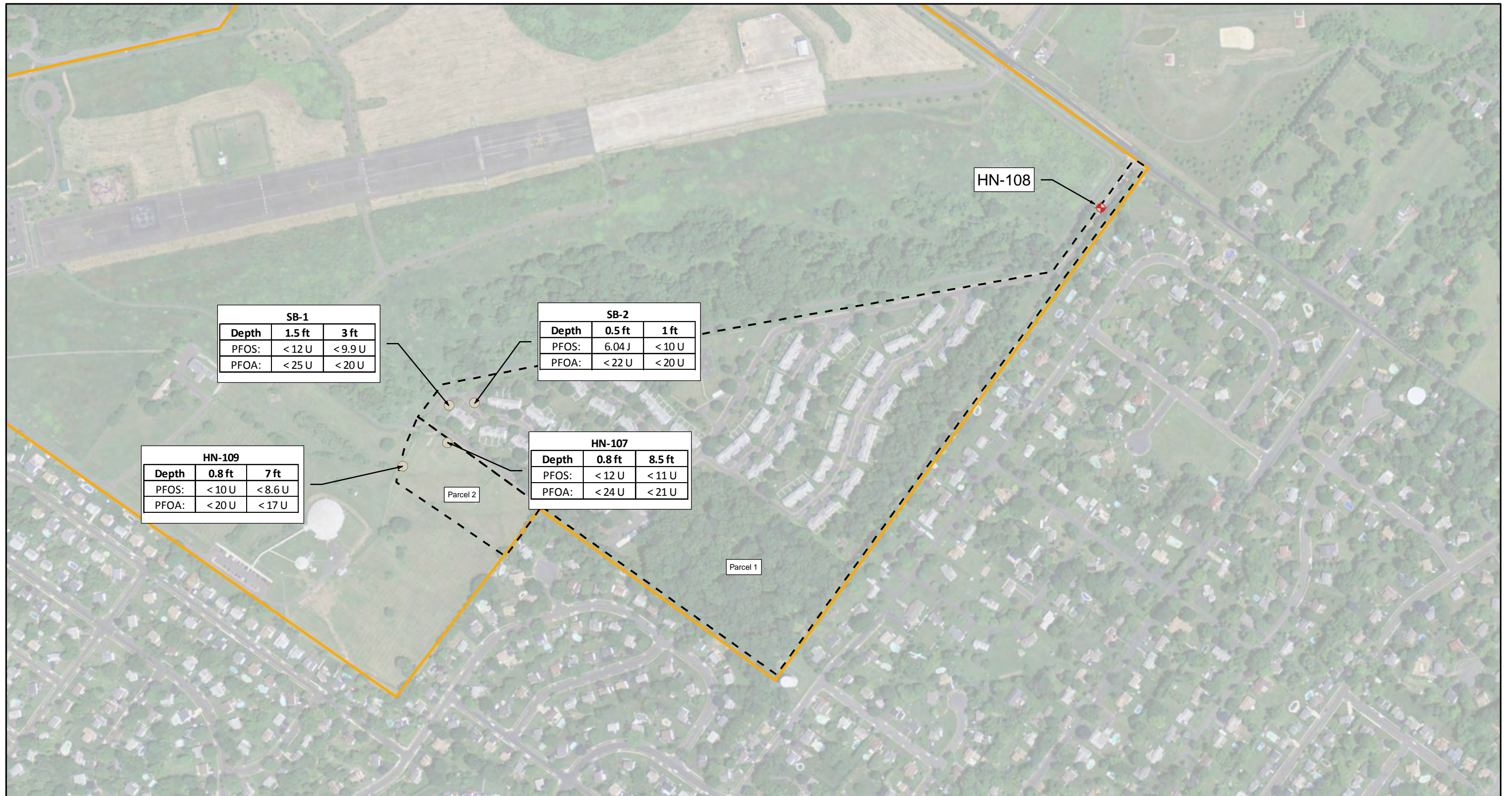
**Table 2**  
**PFC Investigation - April 2015**  
**Validated Results Summary**  
**NAWC Warminster - Shenandoah Woods**

			Sample ID	S1-0.8_03232015	S2-0.8_03232015	S-DUP_03242015	S3-1.5_03232015	S4-8.5_03232015	S5-1.0_03232015	S6-7_03242015	S7-0.5_03242015	S8-3_03242015
			Sample Location	HN-107 - 0.8 ft	HN-109 - 0.8 ft	SB-2	SB-1 - 1.5 ft	SB-1 - 8.5 ft	SB-2 - 1.0 ft	HN-107 - 7 ft	SB-2 - 0.5 ft	SB-1 - 3 ft
			Sample Date	3/23/2015	3/23/2015	3/24/2015	3/23/2015	3/23/2015	3/23/2015	3/24/2015	3/24/2015	3/24/2015
			Sampled Delivery Group	FA23101	FA23101	FA23101	FA23101	FA23101	FA23101	FA23101	FA23101	FA23101
Chemical Name	CAS	Units										
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	µg/Kg		< 12 U	< 10 U	< 11 U	< 12 U	< 11 U	< 10 U	< 8.6 U	< 11 U	< 9.9 U
Perfluoroheptanoic Acid (PFHpA)	375-85-9	µg/Kg		< 12 U	< 10 U	< 11 U	< 12 U	< 11 U	< 10 U	< 8.6 U	< 11 U	< 9.9 U
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	µg/Kg		< 12 U	< 10 U	< 11 U	< 12 U	< 11 U	< 10 U	< 8.6 U	< 11 U	< 9.9 U
Perfluorononanoic Acid (PFNA)	375-95-1	µg/Kg		< 12 U	< 10 U	< 11 U	< 12 U	< 11 U	< 10 U	< 8.6 U	< 11 U	< 9.9 U
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	µg/Kg		< 12 U	< 10 U	< 11 U	< 12 U	< 11 U	< 10 U	< 8.6 U	6.04 J	< 9.9 U
Perfluorooctanoic Acid (PFOA)	335-67-1	µg/Kg		< 24 U	< 20 U	< 22 U	< 25 U	< 21 U	< 20 U	< 17 U	< 22 U	< 20 U

			Sample ID	EB-032315	FB-032315	FB-032415
			Sample Date	3/23/2015	3/23/2015	3/24/2015
			Sampled Delivery Group	FA23101	FA23101	FA23101
Chemical Name	CAS	Units				
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	µg/L		< 0.015 U	< 0.016 U	< 0.015 U
Perfluoroheptanoic Acid (PFHpA)	375-85-9	µg/L		< 0.015 U	< 0.016 U	< 0.015 U
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	µg/L		< 0.015 U	< 0.016 U	< 0.015 U
Perfluorononanoic Acid (PFNA)	375-95-1	µg/L		< 0.015 U	< 0.016 U	< 0.015 U
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	µg/L		< 0.015 U	< 0.016 U	< 0.015 U
Perfluorooctanoic Acid (PFOA)	335-67-1	µg/L		< 0.031 U	< 0.032 U	< 0.031 U

Notes:  
CAS Chemical Abstracts Service Number  
U indicates not detected above reporting detection limit  
J indicates estimated value  
µg/Kg micrograms per kilogram  
µg/L micrograms per liter





**AECOM**

Drawn: BC 8/6/2015

Approved: PJ 8/6/2015

Project #: 60276503



**Legend**

- Soil Boring
- Monitoring Well
- Naval Air Warfare Center (NAWC) Site Boundary
- Site Parcel Boundaries

Notes:  
 PFOS/PFOA results reported in micrograms per kilogram (µg/kg)  
**PFOS** - Perfluorooctanesulfonic acid, **PFOA** - Perfluorooctanoic acid  
 J - Estimated Concentration  
 U - Indicates not detected above reporting detection limit  
 ft - Feet

**FIGURE 2**

**SOIL SAMPLE RESULTS**  
**MARCH 2015**  
**SHENANDOAH WOODS**  
**NAWC WARMINSTER**  
**BUCKS COUNTY, PENNSYLVANIA**



**Table 3**  
**PFC Investigation**  
**Survey Results**  
**NAWC Warminster - Shenandoah Woods**

<b>Name</b>	<b>Date</b>	<b>Easting (X)</b>	<b>Northing (Y)</b>	<b>Inner</b>	<b>Outer</b>	<b>Ground</b>
HN-107S	04/20/15	2751877.1770	326037.1820	346.42	346.70	NM
HN-107I	04/20/15	2751877.1770	326037.1820	352.28	346.70	NM
HN-108S	04/20/15	2754686.9370	327115.2650	380.08	380.25	NM
HN-108I	04/20/15	2754686.9370	327115.2650	379.98	380.25	NM
HN-109S	04/20/15	2751688.3990	325998.1530	347.35	347.63	NM
HN-109I	04/20/15	2751688.3990	325998.1530	347.37	347.63	NM
HN-110	07/06/15	2753773.6480	326594.5250	361.74	362.01	NM
HN-111	07/06/15	2753435.6720	326171.2000	355.38	355.73	NM
HN-112	07/06/15	2753114.7370	326476.4760	364.34	364.65	NM
HN-113	07/06/15	2752638.6800	326399.2880	367.13	367.51	NM
HN-114	07/06/15	2752652.0690	325936.0050	348.46	348.77	NM
HN-115	07/06/15	2752203.5290	326269.1280	352.43	352.28	NM
SB (1)	04/20/15	2751821.525	326195.751	NA	NA	350.63
SB (2)	04/20/15	2751912.556	326213.444	NA	NA	349.28
HN107-S1/HN107-S4	04/20/15	2751877.1770	326037.1820	NA	NA	346.70
HN109-S2/HN109-S6	04/20/15	2751688.3990	325998.1530	NA	NA	347.63

Survey completed by Showalter and Associates  
Coordinate System: PA State Plane Southeast, US Feet  
NA - not applicable  
NM - not measured

**Exhibit H**  
**Comments and Responses**



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

August 11, 2015

Mr. Willington Lin, P.E.  
Deputy Base Closure Manager and BRAC Environmental Coordinator  
NAVFAC BRAC Program Management Office East  
4911 South Broad Street, Building 679  
Philadelphia, PA 19112

Re: Finding of Suitability for Transfer  
Shenandoah Woods Housing Complex  
Naval Air Station Joint Reserve Base Willow Grove

Dear Mr. Lin:

The Pennsylvania Department of Environmental Protection (DEP) has reviewed the U.S. Navy's Finding of Suitability for Transfer (FOST) report for the property located in Warminster Township, Bucks County, Pennsylvania, listed above. The U.S. Navy is requesting DEP's concurrence of the proposed transfer pursuant to Section 120(h)(4) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Based on the FOST, and the DEP regional files, DEP concurs with the U.S. Navy that all removal and remedial actions necessary to protect human health and the environment have been taken and the property is transferable under CERCLA Section 120(h)(4).

DEP reserves any rights and authorities relating to information not contained or referenced in this document, whether such information was known when this document was issued or discovered after such issuance.

Sincerely,

A handwritten signature in blue ink, appearing to read "Stephan Sinding".

Stephan Sinding  
Regional Manager  
Environmental Cleanup and Brownfields

cc: Mr. R. Patel  
Mr. Cherry  
Mr. Wade  
File  
Re 30 (eh15ecb)222-8



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

AUG 31 2015

Mr. Greg Preston, Director  
Department of the Navy  
Base Realignment and Closure  
Program Management Office East  
4911 S. Broad Street  
Philadelphia, Pennsylvania 19112

RE: *Finding of Suitability to Transfer, Naval Air Station Joint Reserve Base - Willow Grove, Shenandoah Woods Housing Complex, Warminster, Pennsylvania, August 2015*

Dear Mr. Preston,

The U.S. Environmental Protection Agency (EPA) Region III has reviewed the document entitled, *Finding of Suitability to Transfer Naval Air Station Joint Reserve Base (NASJRB) - Willow Grove, Shenandoah Woods Housing Complex, Warminster, Pennsylvania*, dated August 2015. The Shenandoah Woods Housing Complex, the subject property, was initially part of the Naval Air Warfare Center, Warminster (NAWC); thus, the site is linked to the ongoing NAWC remediation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

NAWC was closed on March 31, 1997 under the Department of Defense Base Realignment and Closure (BRAC) 1995 program. At that time, ownership of the Shenandoah Woods Housing Complex, on the NAWC, Warminster property, was transferred to NASJRB - Willow Grove, which is located in nearby Horsham Township, Montgomery County, Pennsylvania. This document conveys the U.S. Navy's determination of the environmental suitability of certain parcels of property associated with the NASJRB - Willow Grove for transfer to the Horsham Township Authority for NASJRB Willow Grove, consistent with CERCLA and Department of Defense policy.

EPA provided comments on the FOST to the Navy on July 2015 and, through revisions to the document, all our comments have been addressed. EPA's comments were based on EPA's review of the FOST without any independent verification of the information contained or referenced therein. EPA reserves all rights and authorities relating to information not contained or referenced in this document whether or not such information was known when this document was issued or discovered after such issuance.

This letter should accompany the subject document in an administrative record for the FOST which is available to the public for review. If you have any questions regarding the above, please contact Sarah Kloss of my staff at (215) 814-3379.

INVESTIGATIVE DIVISION  
STATE ENVIRONMENTAL PROTECTION AGENCY  
REGION 1  
1000  
1000

Sincerely,

*Cecil Rodrigues*

Cecil Rodrigues, Director  
Hazardous Site Cleanup Division



AUG 3 1 2011

cc: Mr. Colin Wade- PADEP  
Ms. Lisa Cunningham, EPA  
Ms. Sarah Kloss, EPA

Mr. Cecil Rodrigues  
Director  
Hazardous Site Cleanup Division  
1000  
1000

RE: [Illegible subject line]

On [Illegible date], [Illegible recipient name] requested that the [Illegible subject] be [Illegible action].

The [Illegible subject] is currently being [Illegible action] by the [Illegible department].

It is noted that the [Illegible subject] is currently being [Illegible action] by the [Illegible department].

The [Illegible subject] is currently being [Illegible action] by the [Illegible department].

The [Illegible subject] is currently being [Illegible action] by the [Illegible department].

The [Illegible subject] is currently being [Illegible action] by the [Illegible department].

The [Illegible subject] is currently being [Illegible action] by the [Illegible department].