FINAL

ENVIRONMENTAL CONDITION OF PROPERTY REPORT

GERMANTOWN VETERANS MEMORIAL
U.S. ARMY RESERVE CENTER (PA076)
5200 WISSAHICKON AVENUE
PHILADELPHIA, PA 19144

Prepared For:

U.S. Army Corps of Engineers – Louisville District
Engineering Division – Environmental Engineering Branch
600 Dr. Martin Luther King, Jr. Place
Louisville, Kentucky 40202-2232

FEBRUARY 2007

Certification

All information/documentation provided accurately reflects the environmental condition of the property. This ECP report is in general accordance with the U.S. Department of Defense (DoD) requirements for completion of an Environmental Condition of Property (ECP) report.

BRUCE KISH **DATE**
Environmental Protection Specialist
99th Regional Readiness Command

The undersigned certifies the contents of this report are in general accordance with DoD policies for the completion of an ECP.

LENARD GUNNELL, P.G. **DATE**
Project Geologist
U.S. Army Corps of Engineers

Executive Summary

CH2M HILL, under contract to the U.S. Army Corps of Engineers, Louisville District, prepared this Environmental Condition of Property (ECP) report for the Germantown Veterans Memorial U.S. Army Reserve (USAR) Center (Facility ID PA 076), hereafter referred to as the "Property" or "USAR Center." The Property is located at 5200 Wissahickon Avenue, Philadelphia, Philadelphia County, Pennsylvania 19144, and encompasses approximately 4.94 acres.

This ECP report was conducted in conformance with the Department of Defense's (DoD's) Base Redevelopment and Realignment Manual, DoD 4165.77-M (BRRM), Army Regulation 200-1, and the American Society for Testing and Materials (ASTM) Designation D6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Surveys*.

This ECP report details the history of the property, including the USAR and any prior tenant uses of the Property and the resulting environmental condition of the property.

The USAR Center is on approximately 4.94 acres of land with two permanent structures, a 30,538-square-foot main building and a 6,300-square-foot Organizational Maintenance Shop (OMS). The site is currently occupied by two units; 223rd Quartermaster Company and 3/317th Battalion (BCT), 80th Division.

Based on a review of aerial photographs and U.S. Geological Survey topographic maps dating back to 1943, the Property was an undeveloped lot prior to 1955. Construction of the main building and OMS building was completed in 1957.

Areas of potential environmental concern were reviewed and CH2M HILL found the following relating to the environmental condition of the property:

- Location of former 1,500- and 12,000-gallon underground storage tanks (USTs) removed in 1992. Remedial activities were performed to remove contamination associated with these USTs. The Pennsylvania Department of Environmental Protection (PADEP) issued a no further action (NFA) letter in 2002.
- Location of a former 2,500-gallon UST removed in 2003.
- Southeastern corner of the Property, next to Wissahickon Avenue. Available information concerning the nature and extent of petroleum contamination from the leaking underground storage tank (LUST) at the MNB Sunoco property was not available for this ECP report.
- Northwestern corner of the Property, next to Wissahickon Avenue. Available information concerning the nature and extent of petroleum contamination from leaking underground storage tanks (LUSTs) at the Alden Park APT Complex and Bowman RES properties was not available for this ECP report.
- Vehicle washing areas. Two vehicle washing areas were identified by 99th Regional Readiness Command (RRC) personnel during the August 8, 2006, site reconnaissance.

The vehicle washing areas are located behind the southwest wall of the OMS building and consist of a wash rack and a concrete pad. Both of these vehicle washing areas are flush with the surrounding pavement and slope west, offsite, toward the Southeastern Pennsylvania Transportation Authority (SEPTA) regional railroad tracks. An oil/water separator (OWS) is not present on the Property. The location or system receiving discharge from the drain in the wash rack could not be confirmed. Furthermore, since there is no containment around the vehicle washing areas, it is likely that waste fluids generated during vehicle washing activities also ran off the pavement and onto the adjoining grass. A 1994 environmental compliance assessment states that the wash rack has been "closed," and that the facility is no longer engaged in the outdoor washing of vehicles to eliminate escape wash water from entering nearby surface waters. No stressed vegetation was visible around the vehicle washing areas during the site reconnaissance. There were no reports reasonably available for this ECP report that document any investigations related to the vehicle washing areas or documents identifying stressed vegetation around the areas.

In accordance with DoD policy defining the classifications (see Sherri Goodman memorandum dated 21 October 1996), the Property has been classified as Type 3, an area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action. This classification does not include categorizing the property based on de minimis conditions that generally do not present material risk of harm to the public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

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Appendixes

Abbreviations and Acronyms

The following is a comprehensive list of abbreviations and acronyms that are used throughout this report.

µg/kg	micrograms per kilogram
ACM	asbestos-containing material
AMSA	Area Maintenance Support Activity
amsl	above mean sea level
AR	Army Regulation
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
BRAC	Base Realignment and Closure
BRRM	Base Redevelopment and Realignment Manual
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Act Information System
CFR	Code of Federal Regulations
CORRACTS	Resource Conservation and Recovery Act corrective action site
DoD	Department of Defense
ECP	Environmental Condition of Property
EDR	Environmental Data Resources, Inc.
ERNS	Emergency Response Notification System
FEMA	Federal Emergency Management Agency
FINDS	Facility Index System/Facility Registry System
JRB	Joint Reserve Base
kg	kilogram
LBP	lead-based paint
LNAPL	light nonaqueous phase liquid
LUST	leaking underground storage tank
MEC	munitions and explosives of concern
MEP	military equipment parking
MSDS	material safety data sheet

NAS	Naval Air Station
NBC	nuclear, biological, and/or chemical
NFA	no further action
NPL	National Priorities List
NRHP	National Register of Historic Places
OMS	Organizational Maintenance Shop
OWS	oil/water separator
PADEP	Pennsylvania Department of Environmental Protection
PCB	polychlorinated biphenyl
PECO	Philadelphia Electric Company
pCi/L	picoCuries per liter
POL	petroleum, oil, and lubricants
POV	privately owned vehicle
PWD	City of Philadelphia Water Department
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Act Information System
RRC	Regional Readiness Command
SEPTA	Southeastern Pennsylvania Transportation Authority
STATSGO	State Soil Geographic Database
Tank Act	Storage Tank and Spill Prevention Act
TSD	treatment, storage, and/or disposal
USACE	United States Army Corps of Engineers
USAR	United States Army Reserve
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
VCP	Voluntary Cleanup Program

1 Introduction

CH2M HILL, under contract to the U.S. Army Corps of Engineers (USACE) Louisville District Engineering Division was authorized to conduct an Environmental Condition of Property (ECP) report for the Germantown Veterans Memorial U.S. Army Reserve (USAR) Center (PA076). The facility is located at 5200 Wissahickon Avenue, Philadelphia, Philadelphia County, Pennsylvania, and is hereafter referred to as the Property or USAR Center. CH2M HILL prepared this ECP report under Contract Number W912QR-04-D-0020, Task Order No. 0018, with the Louisville District USACE.

A visual non-intrusive reconnaissance of the Property was conducted on August 8, 2006, in support of the ECP. The reconnaissance purpose was to visually obtain information indicating the likelihood of recognized environmental conditions associated with the Property or adjacent properties.

In preparing this ECP report, CH2M HILL gathered information from the available records and previous work from others, interviews with individuals purporting to be familiar with the Property, and observations from a site reconnaissance. The accuracy of the information obtained from these sources was not verified by CH2M HILL. As such, CH2M HILL will make no warranty, expressed or implied, relative to the accuracy, completeness, or reliability of the information used to create the records and reports prepared by others.

1.1 Purpose of Environmental Condition of Property

The Military Department with real property accountability shall assess, determine and document the environmental condition of all transferable property in an ECP report. This ECP report is based on readily available information. Pursuant to the Department of Defense's (DoD's) policy, set forth in the Base Redevelopment and Realignment Manual (DoD 4165.66-M, March 1, 2006) Section C8.3 (BRRM), the primary purposes of the ECP report include the following:

- Provide the Army with information it may use to make disposal decisions
- Provide the public with information relative to the environmental condition of the property
- Assist in community planning for the reuse of Base Realignment and Closure (BRAC) property
- Assist federal agencies during the property screening process
- Provide information for prospective buyers
- Assist prospective new owners in meeting the requirements under U.S. Environmental Protection Agency's (USEPA's) "All Appropriate Inquiry" regulations
- Provide information about completed remedial and corrective actions at the property

- Assist in determining appropriate responsibilities, asset valuation, and liabilities with other parties to a transaction

The ECP report contains the information required to comply with the provisions of 40 Code of Federal Regulations (CFR) Part 373, which require that a notice accompany contracts for the sale of, and deeds entered into, for the transfer of federal property on which any hazardous substance was stored, released, or disposed of. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 120(h) stipulates that a notice is required if certain quantities of designated hazardous substances have been stored on the property for 1 year or more—specifically, quantities exceeding 1,000 kilograms (kg) or the reportable quantity, whichever is greater, of the substances specified in 40 CFR 302.4 or 1 kg of acutely hazardous waste as defined in 40 CFR 261.30. A notice also is required if hazardous substances have been disposed of or released on the property in an amount greater than or equal to the reportable quantity. Army Regulation (AR) 200-1 requires that the ECP report address asbestos, lead-based paint (LBP), radon, and other substances potentially hazardous to human health.

This ECP report used the American Society for Testing and materials (ASTM) Designation D6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Surveys*, the BRRM, CERCLA §120, and AR 200-1.

1.2 Scope of Services

This ECP report covers the 4.94-acre USAR Center located at 5200 Wissahickon Avenue, Philadelphia, Pennsylvania (Figure 1, Appendix A). The Property is bounded by Wissahickon Avenue to the north and east, Southeastern Pennsylvania Transportation Authority (SEPTA) regional railroad tracks to the west and northwest, and a federal office building to the south. All site maps, figures, and aerial photographs referenced herein are provided in Appendix A, while Appendix B contains the photographs taken during the August 8, 2006, site reconnaissance. Appendix C contains the Property warranty deeds and chain of title information, and lease or permit agreements if applicable. Relevant historical environmental documents and reports are provided in Appendix D, while Appendix E contains the Environmental Data Resources, Inc. (EDR) radius search reports commissioned for this effort.

This ECP report classifies the Property into one of seven DoD Environmental ECP categories as defined by the DoD policy defining the classifications (see Sherri Goodman memorandum dated 21 October 1996). The property classification categories are as follows:

- ECP Area Type 1—An area or parcel of real property where no release or disposal of hazardous substances or petroleum products or their derivatives has occurred (including no migration of these substances from adjacent properties).
- ECP Area Type 2—An area or parcel of real property where only the release or disposal of petroleum products or their derivatives has occurred.
- ECP Area Type 3—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action.

- ECP Area Type 4—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred and all remedial actions necessary to protect human health and the environment have been taken.
- ECP Area Type 5—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred and removal or remedial actions, or both, are underway, but all required actions have not yet been taken.
- ECP Area Type 6—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but required response actions have not yet been initiated.
- ECP Area Type 7—An area or parcel of real property that is unevaluated or requires additional evaluation.

2 Site Location and Physical Description

2.1 Site Location

The USAR Center is located in Philadelphia County on the northwestern side of the city of Philadelphia, Pennsylvania, at 5200 Wissahickon Avenue (Figure 1, Appendix A). The 4.94-acre parcel is situated next to the SEPTA regional railroad and is surrounded on other Property boundaries by commercial and residential developments.

2.2 Asset Information

Facility Name and Address:	Germantown Veterans Memorial U.S. Army Reserve Center 5200 Wissahickon Avenue Philadelphia, Pennsylvania
Property Owner:	U.S. Government
Date of Ownership:	1955
Current Occupant:	223rd Quartermaster Company, and 3/317th Battalion (BCT), 80th Division (Unknown, 2005)
Zoning:	Information not available at the time of the final ECP report preparation
County, State:	Philadelphia, Pennsylvania
USGS Quadrangle(s):	Germantown, Pennsylvania
Section/Township/Range:	Information not available at the time of the final ECP report preparation
Latitude/Longitude:	40°1'17.4"N; 75°10'36.8"W (EDR, 2006)
Legal Description:	Information not available at the time of the final ECP report preparation

The USAR Center includes one contiguous 4.94-acre parcel of land.

2.3 Physical Description

The USAR Center is located on a 4.94-acre parcel on the northwestern side of Philadelphia, Pennsylvania (Figure 1, Appendix A). The Property is located on the U.S. Geological Survey (USGS) 7.5-minute Germantown quadrangle map at an average elevation of 208 feet above mean sea level (amsl). The topography is generally flat, with a sharp decrease in elevation on the west side of the Property toward the SEPTA regional railroad tracks. The Property is lower in elevation than the neighboring Federal Building to the south and is separated from

the Federal Building by an approximately 10-foot-high retaining wall. Drain pipes in the Federal Building's retaining wall drain onto the Property.

The USAR Center contains two permanent structures and two parking lots. Construction of both the 30,538-square-foot main building and the 6,300-square-foot Organizational Maintenance Shop (OMS) building were completed in 1957. Both structures are on concrete foundations and consist of concrete block walls covered with a brick veneer (Unknown, 2005). A military equipment parking (MEP) area and a privately owned vehicle (POV) parking area also are contained within the Property. Chain-link security fencing topped with barbed wire encloses the Property (Figure 2, Appendix A).

Most of the Property is covered by impervious surface features such as asphalt parking areas, driveways, concrete walkways, and building footprints. The east and west sides of the Property, along Wissahickon Avenue, consist of grass lawn and trees.

2.3.1 Main Building

The main building is an irregular-shaped two-story structure, with a two-story drill hall connected by a one-story enclosed corridor. The building's interior consists of office space, classrooms, kitchen area, storage, former indoor firing range, and a drill hall. Available records reviewed, interviews with 99th Regional Readiness Command (RRC) personnel, and the August 8, 2006, site reconnaissance did not identify any grease traps associated with the main building. An arms vault is located at the southeastern portion of the building's first floor and was used to store rifles and pistols. Based on interviews with 99th RRC personnel, ammunition is not currently stored in the arms vault. The remaining rooms of the first floor consist of administrative offices, storage, and a computer server room. Caged storage areas are located at the southeastern portion on the first floor. Nonhazardous military equipment was stored in these caged areas during the August 8, 2006, site reconnaissance, with the exception of nuclear, biological, and/or chemical (NBC) warfare monitors that contain a small amount of radioactive materials that are not regulated.

A boiler room is located on the northwestern side of the main building. The boiler room is lower in elevation than the first floor and houses the building's water heater, natural gas heating units, and bypass feeder. An electrical subpanel also is located in the boiler room. A sump was identified in the southeast corner of the boiler room with reddish-brown staining on the floor around the opening of the sump. Pipes were directed over the sump and appeared to be dripping condensation water from the building's air conditioning unit. Some standing water was present around the opening of the sump. There also was a floor drain in the center of the boiler room floor, which also had reddish-brown staining. Copper pipes, less than 1 inch in diameter, were directed over the floor drain and appeared to be dripping water. There were cut pipes (ranging from less than 1 inch to 8 inches in diameter) in the southeast and southwest walls of the boiler room (Photographs 1 and 2, Appendix B). In addition, there were two cut pipes (less than 1 inch in diameter) in the floor next to the southeast wall. A natural gas-like odor was noted next to the southeast door that leads outside the building. A 5-gallon plastic bucket was present on the floor of the boiler room without secondary containment. The label on the bucket indicated that the bucket contained sodium nitrate, sodium borate, and water.

The second floor is above the entire northeastern half of the building and consists of open office space, offices, classrooms, and a former rifle range. Additional information regarding the former firing range is presented in Section 6.9. Two transformers are located outside next to the southeast corner of the main building.

2.3.2 Organizational Maintenance Shop and Vehicle Wash Area

The OMS building, MEP area, and drum staging area are located southwest of the main building. Currently, the OMS building is used as storage. During the August 8, 2006, site reconnaissance, personnel familiar with the Property noted that vehicle maintenance is performed at the Willow Grove Naval Air Station/Joint Reserve Base (NAS/JRB) Area Maintenance Support Activity (AMSA).

The interior of the OMS building consists of five vehicle maintenance bays and locked storage cages. A large section of patched concrete was present in the last bay on the northwestern side and is consistent with abandoned maintenance pits encountered at other USAR Center facilities. Additional information on this maintenance pit is presented in Section 6.4. No offices or restrooms were present inside the OMS building. During the August 8, 2006, site reconnaissance, the OMS building contained several large crates and other items such as fire extinguishers and unused fuel filters.

The supply cages along the southwest wall of the OMS building contained various items including motor oil, antifreeze, cleaning fluids, gear oil, brake fluid, propane gas cylinders, and paint thinner (Photograph 3, Appendix B). Oxygen and acetylene compressed gas cylinders also were stored together inside one of the storage cages. These items were either stored on the floor of the OMS or on shelves without secondary containment. Outside the storage cages was one steel 55-gallon drum that was about 25 percent full and was labeled "Oil Services, Inc. Neville Island, PA" (Photograph 4, Appendix B). There was no secondary containment beneath the drum; however, the drum was in good condition, and there was no evidence of a release from the drum.

No floor drains or trench drains were identified within the OMS building, and personnel familiar with the OMS building have no knowledge of the existence of current or past floor drains or trench drains. Material safety data sheets (MSDSs) were not present.

A concrete-lined vault covered by a steel plate was located along the center of the northeast wall of the OMS building. The vault was about 5 feet deep and had reddish-brown staining on the walls. Two water pipes entered the vault from the southeast (Photograph 5, Appendix B). The concrete pit was dry and appeared to be a former trap for steam or hot water systems. Available documents reviewed, interview notes, and visual observations did not identify this pit as a potential disposal site for hazardous or petroleum, oil, and lubricant (POL) products.

During the August 8, 2006, site reconnaissance two wash areas were identified. The primary wash area consists of a wash rack near the northwestern corner of the OMS building. The wash rack is constructed of concrete and is about 15 feet wide by about 25 feet long. A steel plate covering the drain grate is located in the center of the wash rack but could not be removed for inspection during the August 8, 2006, site reconnaissance. The wash rack is constructed of concrete and is flush with the surrounding pavement (that is, no curb) (Photograph 6, Appendix B).

A secondary wash area for larger vehicles consists of a concrete pad behind the OMS building, along the southwest wall. This concrete pad also is flush with the surrounding pavement and is about 85 feet long and extends about 15 to 20 feet southwest from the OMS building. The 99th RRC personnel noted that vehicle washing may have occurred along this longer concrete pad.

Both concrete pads slope west, offsite, toward the SEPTA regional railroad tracks. A 1994 environmental compliance assessment states that the wash rack has been "closed," and that the facility is no longer engaged in the outdoor washing of vehicles to eliminate escape wash water from entering nearby surface waters (Geophex, 1994). Based on the August 8, 2006, site reconnaissance and interviews with 99th RRC personnel, the Property does not have an oil/water separator (OWS). Since an OWS is not present on the Property, it is assumed that wastewater generated from vehicle washing activities on the primary wash area (wash rack) was directed to the sanitary sewer system or storm drain. In addition, since there was no containment around the vehicle washing areas, it is likely that waste fluids generated during vehicle washing activities also ran off the pavement and onto the adjoining grass. These waste fluids most likely consisted of petroleum products, antifreeze, battery acid, and solvents. There were no reports available for this ECP report that document any investigations related to the vehicle washing areas. No visibly stressed vegetation or staining was observed downstream of either wash area during the August 8, 2006, site reconnaissance.

On the edge of the wash rack, next to the fence, was two plastic containment pallets (Photograph 7, Appendix B). Both pallets were covered, and there were no leaks or staining present on the pavement around the pallets. One of the pallets contained 5-gallon plastic and metal containers (Photograph 8, Appendix B), and had a strong petroleum-like odor. The second pallet could not be fully opened; however, two plastic containers were noted inside.

During the August 8, 2006, site reconnaissance, there were two 5-gallon containers of gear oil and transmission fluid. There were no leaks or staining around the containers; however, they were stored on the pavement without secondary containment. Several patches of varying size and composition (concrete and asphalt) were present throughout the MEP area. Based on historical documents, some of the concrete patches may have been abandoned monitoring wells that were used during previous environmental investigations (EA, 2000) (see Section 3) or remnants of a former covered storage area (Geophex, 1994). During the August 8, 2006, site reconnaissance, a collapsed section of pavement about 3 feet in diameter was identified in the southwest corner of the Property (Photograph 9, Appendix B). Collapsed pavement also is visible in some of the historical photographs (Figure 10, Appendix A). Patched pavement related to the underground storage tank (UST) removal was noted on the southwest side of the main building, just outside the boiler room.

A 6,000-gallon concrete storage tank that had been removed from another facility was stored in the MEP area. This tank was destined to be installed at the USAR Center, however, the facility converted from oil heat to natural gas, and the tank was never used. Interviews with 99th RRC personnel noted that the tank is empty and was previously used to store No. 2 fuel oil. There were no leaks or stained pavement present near the tank.

Several military vehicles were parked in the MEP area. Oil-like stains were noted on the pavement in the MEP area; however, these stains did not extend off the paved areas and are typical of staining found in parking lots.

2.4 Site Hydrology and Geology

The site is located within the Piedmont physiographic province. Bedrock beneath the Property is composed of metamorphosed sedimentary rocks of the lower Paleozoic Period. In general, overburden consists of grayish-green or orange-brown silty clay, underlain by a grayish-green silty sand to depths of approximately 24 to 35 feet below grade (bedrock). Bedrock, classified as the Wissahickon Formation, consists of weathered mica schist. Groundwater is first encountered at depths ranging from 27 to 30 feet below grade and surveyed to flow in a west-southwesterly direction (EA, 2002). The nearest stream, Wissahickon Creek, is located about 1 mile west of the site (Figure 3, Appendix A).

Northern Philadelphia and the USAR Center are found on the USGS 7.5-minute Germantown quadrangle map (Figure 3, Appendix A). As shown on this map, ground surface elevations at the USAR Center average 208 feet amsl.

2.4.1 Surface Water Characteristics

Figure 3 in Appendix A provides a portion of the 1997 Germantown, Pennsylvania USGS 7.5-minute topographic map that includes the Property. As shown, the Property is situated at an elevation of approximately 208 feet amsl. The site is relatively flat, sloping slightly to the west for a distance of about 100 feet, where a more moderate slope begins. Surface drainage appears to follow site topography and is directed to the local storm sewer system (EA, 2002).

No stormwater grates were identified in the POV parking or MEP areas. In the MEP area, surface runoff is assumed to sheet flow to the western and southwestern portions of the Property. In the POV parking lot, surface runoff would most likely flow north-northwest. Drain pipes are located in the retaining wall between the Federal Building and the USAR Center, and drain onto the Property.

A City of Philadelphia Water Department (PWD) reservoir is located about 0.5 mile southwest of the Property. Wissahickon Creek is the nearest stream and is located about 1 mile west of the Property. The Schuylkill and Delaware rivers are located about 1.3 miles southwest and 4.7 miles southeast, respectively. The Schuylkill River discharges into the Delaware River, which ultimately discharges into Delaware Bay and the Atlantic Ocean.

2.4.2 Hydrogeological Characteristics

The USAR Center is underlain by about 24 to 35 feet of overburden consisting of grayish-green or orange-brown silty clay, and grayish-green silty sand, followed by the Wissahickon Formation (EA, 2002). According to information acquired from the Soil Conservation Service's State Soil Geographic Database (STATSGO) for Philadelphia County, specific types of soil at the Property are from the Chester Series. The Chester Series is listed as a Class B soil, which has a moderate infiltration rate, is moderately to well drained, and

has moderately coarse textures (EDR, 2006). The Chester Series soils do not meet the requirements for a hydric soil (EDR, 2006).

Monitoring wells that were previously installed on the Property exhibited depths to groundwater from 29 to 31 feet below grade flowing in a west-southwesterly direction (EA, 2002).

2.5 Site Utilities

Based on interviews with 99th RRC personnel, the following information was obtained regarding site utilities.

Water Service—PWD provides potable water service to the Property.

Sanitary Sewer System—The City of Philadelphia provides sanitary sewer service to the Property. The primary source of wastewater that is directed to the city sewer system includes non-process wastewater (bathrooms, sinks, etc.) and vehicle washing runoff.

Gas and Electric—Philadelphia Energy Company (PECO) provides natural gas and electric services to the Property.

2.6 Water Supply Wells and Septic Systems

Based on a review of available historical site and agency records and interviews with site personnel, neither a water supply well nor a septic system is or was located at the Property. Potable water is supplied by the City of Philadelphia (EDR, 2006).

A search of federal and state water well databases did not identify any water supply wells within 0.5 mile of the Property; however, the City of Philadelphia has one surface water plant about 0.5 mile southwest of the Property (EDR, 2006).

3 Site History

3.1 History of Ownership

Land titles for the Property were not available at the time of this ECP report preparation. A review of historical aerial photographs indicates that the Property was an empty lot, surrounded by commercial and residential properties prior to U.S. Government ownership. In 1955, the U.S. Government purchased this Property for its current purposes (Unknown, 2005).

3.2 Past Uses and Operations

In 1955, the U.S. Government purchased the 4.94 acres of land for construction of the USAR Center. Construction of the main building and OMS building was completed in 1957 (Unknown, 2005). Based on historical aerial photographs, the Property was an undeveloped lot surrounded by commercial and residential properties. The 1943 aerial photograph indicates a portion of the Property may have been used as a parking lot or construction staging area for the adjacent Federal Building (Figure 4, Appendix A). The 1950 aerial photograph shows the remnants of a baseball field in the southeast corner of the Property (Figure 5, Appendix A).

Based on interviews with 99th RRC personnel, the Property primarily functioned as an administrative, logistical, and educational facility, with limited maintenance of military vehicles occurring in the OMS building. The Property was historically used by reservists for drill activities on various weekends throughout the year. At the time of the August 8, 2006, site reconnaissance, the main building contained various items, including desks, office furniture, an arms vault, and folding tables. The OMS building was used to perform limited maintenance activities on military equipment. Activities inside the OMS building were limited to preventative maintenance checks, including checking vehicle fluids such as motor oil, water, and antifreeze, and light maintenance activities. Any equipment requiring heavier maintenance was sent to a local AMSA.

At the time of the August 8, 2006, site reconnaissance, the OMS building was used as storage space. The interior of the OMS building consists of five vehicle maintenance bays and locked storage cages. No offices or restrooms were present inside the OMS building.

Vehicle washing would have historically occurred outside the OMS building on one of two wash areas. The primary wash rack is located next to the northwest corner of the OMS building, and a second larger concrete slab (for larger vehicles only) is located along the southwest wall of the OMS building. The primary wash rack consists of a concrete pad that is flush with the surrounding pavement (no curb) (Photograph 6, Appendix B). A 1994 environmental compliance assessment states that the wash rack has been "closed," and that the facility is no longer engaged in the outdoor washing of vehicles to eliminate escape wash water from entering nearby surface waters (Geophex, 1994). Interviews with 99th RRC personnel also noted that vehicle washing historically took place on a concrete pad behind

the OMS building, along the southwest wall. This concrete pad also is flush with the surrounding pavement and is about 85 feet long and extends about 15 to 20 feet southwest from the OMS building. Both of these vehicle washing areas slope west, offsite, toward the SEPTA regional railroad tracks.

Historical aerial photographs and topographic maps were the primary source of information on the past use and operations at the Property. The 1943 and 1950 aerial photographs (Figures 4 and 5, Appendix A) show the Property as an undeveloped lot. In 1943, the southeast corner appears to be a parking and construction staging area for construction of the adjacent Federal Building. In the 1950 aerial photograph, remnants of a ball field are visible in the southeast corner of the Property. A road to the west end of the Federal Building parking lot and storage area also are visible on the Property. North and east of the Property appear to be comprised of residential developments, while south of the Property is a commercial building, which is assumed to be the Federal Building. The PWD surface water plant is visible to the southwest of the Property.

The 1965 historical aerial photograph (Figure 6, Appendix A) shows the developed USAR Center. Note that in the current location of the POV parking lot, the pavement appears as two separate colors, indicating that this area may have been unpaved at this time. Directly south of the Property is a parking lot followed by the former Federal Building. Interviews with 99th RRC personnel noted that the Federal Building was renovated about 10 years before the August 8, 2006, site reconnaissance. This is confirmed in recent aerial photographs (Figures 7 through 10, Appendix A), as the location of the Federal Building and parking lot have switched places (that is, the building is now on the northwest side of the lot). Little change has occurred at the Property since the 1965 aerial photograph. Figure 10 (Google Earth Image) in Appendix A shows a sink hole at the southwestern corner of the Property and some stains on the asphalt in the MEP area. The visible sink hole is reportedly common in the area based on the regional geology. Similar sink holes have been reported elsewhere in the area. The stains that appear in the aerial photograph are confined to the MEP area and do not run off the asphalt pavement onto the adjacent grassed areas.

In addition to historical aerial photographs, historical USGS topographic maps were evaluated. USGS topographic maps dating back to 1899 were available for review; however, for the purposes of this ECP, the 1997, 1952, and 1967 topographic maps (Figures 3, 11, and 12, Appendix A) adequately depict development of the Property and its immediate surroundings over the past years. A review of these maps indicates that the same progression of development of the Property and surrounding areas as the historical aerial photographs. The Property appears undeveloped in the 1952 topographic map (Figure 11, Appendix A), and the USAR Center first appears in the 1967 map (Figure 12, Appendix A).

3.3 Past Use, Storage, Disposal, and Release of Hazardous Substances

3.3.1 Past Use and Storage of Hazardous Substances

Information related to the past use and storage of hazardous substances at the Property was compiled through review of available site records, search of federal and state environmental databases, and interviews with Army Reserve personnel. Chemicals formerly used and

stored at the Property were associated with vehicle and facility maintenance activities and janitorial services. Janitorial chemicals and building maintenance-related products were stored in the designated storage area within the janitorial closet located in the main building. The supply cages along the southwest wall of the OMS building contained various items including motor oil, antifreeze, cleaning fluids, gear oil, brake fluid, propane gas cylinders, and paint thinner. Oxygen and acetylene compressed gas cylinders also were stored together inside one of the storage cages. These items were either stored on the floor or on shelves in the OMS without secondary containment. Outside the storage cages was one steel 55-gallon drum that was about 25 percent full and was labeled "Oil Services, Inc. Neville Island, PA" (Photograph 4, Appendix B). There was no secondary containment beneath the drum.

Certain types of chemical products used and stored at the Property would have contained CERCLA hazardous substances. During a 1994 inspection, several hundred pounds of waste materials, including hazardous wastes, were found in a vehicle parked in the MEP area. Documents indicating the exact amounts and types of this waste were not available at the time of this ECP report preparation; however, the 1994 inspection report indicates that this waste was subsequently disposed of by the Defense Reutilization and Marketing Office (Department of the Army, 1994). During the August 8, 2006, site reconnaissance, nonhazardous waste was disposed of in two dumpsters located in the POV parking area. Based on interviews with 99th RRC personnel, nonhazardous waste is removed weekly by a private disposal contractor.

3.3.2 Past Disposal and Release of Hazardous Substances

Information related to past disposal and potential release of hazardous substances at the Property were compiled through review of available site records, search of federal and state environmental databases, and interviews with Army Reserve personnel. According to Army Reserve personnel and site records, onsite disposal of hazardous materials or wastes has not occurred at the Property. It was confirmed through the interview with 99th RRC personnel that any hazardous waste generated by the OMS would have been transported and disposed of offsite. Remedial activities, however, were previously performed at the Property to address contamination that resulted from two leaking underground storage tanks (LUSTs).

In 1995, light nonaqueous phase liquid (LNAPL) was identified in two monitoring wells on site. The LNAPL leaked from a 1,500-gallon No. 2 fuel oil UST and a 12,000-gallon UST that were removed in 1992. Cleanup activities included collecting groundwater and subsurface soil samples to characterize the nature and extent of contamination and removing soil contaminated with No. 2 fuel oil. LNAPL also was recovered from two of the onsite monitoring wells. A remedial action completion report was submitted to the Pennsylvania Department of Environmental Protection (PADEP) in April 2002, at the completion of remedial activities (EA, 2002). PADEP issued a no further action (NFA) letter to the Department of the Army on August 1, 2002. In this letter, PADEP agreed with the conclusions of the remedial action completion report and directed the USAR Center to abandon all of the onsite monitoring wells (PADEP, 2002).

A third 2,500-gallon UST containing No. 2 fuel oil was removed on January 27, 2003. No cleanup was necessary for this tank, since results from post-excavation samples were below standard criteria requiring remedial actions (EA, 2003).

Based on a review of historical documents and interviews with 99th RRC personnel, the following additional releases have occurred at the Property:

- During the 1994 environmental compliance assessment, the asphalt surfaces surrounding the oil shed and adjacent paint storage building were heavily stained due to past POL releases from within and around the oil shed (Geophex, 1994). The oil shed and paint shed were removed from the Property after the 1994 environmental compliance assessment (Department of the Army, 1994).
- A military vehicle parked in the motor pool was leaking differential fluid onto the parking lot. No drip pans were observed beneath any vehicles (ECAS, 2000).
- During the August 8, 2006, site reconnaissance, 99th RRC personnel noted that minor fuel spills (less than 1 gallon) may have occurred in the past.

3.4 Past Presence of Bulk Petroleum Storage Tanks

Based on a review of available site records, a search of federal and state environmental databases, and interviews with Army Reserve personnel, one aboveground storage tank (AST) and three USTs were previously located at this facility.

The AST was identified in a 1996 fuel data inventory that was conducted by the 99th RRC. The AST had a 2,500-gallon capacity and was listed as a backup No. 2 fuel oil source (99th RRC, 1996) and was not present at the Property during the August 8, 2006, site reconnaissance.

Two USTs (1,500 gallon and 12,000 gallon), both containing No. 2 fuel oil, were removed in 1992. Remedial activities were conducted to clean up releases from these USTs, and an NFA letter was received from PADEP in 2002 (EA, 2002; PADEP, 2002). A third 2,500-gallon UST containing No. 2 fuel oil was removed on January 27, 2003. No cleanup was necessary for this tank, since results from post-excavation samples were below standard criteria requiring remedial actions (EA, 2003).

3.5 Review of Previous Environmental Reports

A review of site records produced several reports pertaining to the Property. The following subsections provide a brief summary of these reports. Copies of the reports, unless otherwise specified, are provided in Appendix D.

3.5.1 1992 Sampling and Analysis Test Plan for USARC-Rifle Range at Germantown USAR Center

Gillan and Hartmann, Inc. was contracted to assess the environmental impact of the historical use of the former indoor rifle range at the USAR Center. This document describes

the history of the former rifle range and provides sampling results. Information from this document is provided in Section 6.9.

3.5.2 1992 Memorandum to Paragon Environmental Group, Inc.

This memorandum documents the removal of ballistic sand from the former indoor firing range in November and December 1991. Additional documentation regarding decommissioning activities was not available at the time of this ECP report preparation.

During the August 8, 2006, site reconnaissance, the firing line, shooter partitions, target retrieval system, bullet trap, deflector plates, and acoustical tiles were not present. The room consisted of painted cinder block walls and concrete floors with the exception of the north side of the room where the floor was plywood. Further information on the decommissioning of the former indoor firing range is presented in Sections 6.9 and 8.1.

3.5.3 1994 Memorandum for Commander, 79th ARCOM Attn: AFRC-APA-EN: Radon Testing Results, Department of the Army Headquarters, U.S. Army Garrison

This report documents the results of radon testing that was conducted in 1993. The results were below the USEPA residential action level of 4.0 picoCuries per liter (pCi/L). Information from this source is presented in Sections 6.8 and 8.1.

3.5.4 1994 Environmental Compliance Assessment for Army Reserves, Germantown Veteran's Memorial USAR Center: Environmental Compliance Assessment Report, USACE, Baltimore District

This report documents the 1994 Geophex environmental compliance assessment at the Property. This survey noted deficiencies at the Property and recommended corrective actions. Specifically, the following items were cited from the 1994 Geophex report:

- The wash rack has been "closed," and that the facility is no longer engaged in the outdoor washing of vehicles to eliminate escape wash water from entering nearby surface waters.
- Concrete patches in the MEP pavement may be remnants of a former covered storage area.
- The asphalt surfaces surrounding the oil shed and adjacent paint storage building were heavily stained due to past POL releases from within and around the oil shed. Several hundred pounds of waste materials, including hazardous wastes, were found in a vehicle parked in the MEP area.

Information from this source is presented in Sections 2.3.2, 3.2, 3.3.2, 6.4, 8.1, and 8.2.

3.5.5 1994 Memorandum for Commander, 1-135 Germantown Veterans Memorial US Army Reserve Center: Response to Environmental Compliance Assessment Report, Department of the Army Headquarters, 157th Separate Infantry Brigade (Mechanized)

This is a memorandum from the Deputy Brigade Commander that addresses the corrective actions recommended in the 1994 environmental compliance assessment. This report indicates that the "several hundred pounds of waste materials, including hazardous wastes" that were found in a vehicle parked in the MEP area during the previous 1994 inspection, were subsequently disposed of by the Defense Reutilization and Marketing Office. It also documents that the oil shed and paint shed were removed following the previous 1994 inspection. Information from this source is presented in Sections 3.3.1 and 3.3.2.

3.5.6 1995 79th Army Reserve Command Cultural Resource Management Plan, USACE, Baltimore District

This report documents the survey that inventoried properties controlled or leased by the 79th RRC. Historical information, setting and landscape, cultural resources, security, architectural information, and structure descriptions are included for each property. Each site also was assessed for its eligibility to the National Register of Historic Places (NRHP). No facilities at the USAR Center were eligible for listing on the NRHP. Information from this source is presented in Sections 7.6 and 8.1.

3.5.7 1996 Fuel Data Inventory

This inventory form identifies a 2,500-gallon AST on the Property. This AST was not present during the August 8, 2006, site reconnaissance. Information from this source is presented in Sections 3.4, 6.1, and 8.1.

3.5.8 2000 Engineering and Environmental Facility Assessment for Germantown Veterans Memorial USAR Center, Facility Engineer Center-Northeast

This report documents a facility assessment that was conducted in 2000. Similar to the 1994 environmental compliance assessment, this report noted deficiencies at the Property and recommended corrective actions. Specifically, this report noted the following items related to the environmental condition of the Property:

- A military vehicle parked in the motor pool was leaking differential fluid onto the parking lot. No drip pans were observed beneath any vehicles
- There is no documentation to confirm that an LBP survey has been completed at the facility

Information from this source is presented in Sections 3.3.2 and 6.7.

3.5.9 2000 Cross-Connection Control Survey for 99th Regional Support Command

The report's objective was to locate and identify the occurrences of cross-connection protection code violations and make the appropriate backflow prevention device

recommendations to correct any deficiencies. Code requirements, facility inspection checklists, and recommendations were included in the report. Deficiencies were noted within the buildings and corrective actions were recommended, however, these deficiencies were mechanical in nature, and do not affect the environmental condition of property. This report is not referenced in any other sections of this document.

3.5.10 2000 Asbestos Inspection and Management Plan

This report summarizes previous asbestos inspection surveys and states that all asbestos-containing material (ACM) has been removed from the USAR Center. Information from this source is presented in Sections 6.5 and 8.1.

3.5.11 2002 Remedial Action Completion Report Germantown United States Army Reserve Center

This report was prepared to document the completion of remedial activities associated with the 1,500-gallon and 12,000-gallon LUSTs. The report also provides detailed information about the geology and hydrogeology at the site. Information from this report is presented in Section 3.4.

3.5.12 2002 Letter to U.S. Army Corps of Engineers, Baltimore District

This letter issues an NFA for remedial activities related to the cleanup of a No. 2 fuel oil spill. The letter also directs the USAR Center personnel to abandon all onsite monitoring wells.

A 2000 EA Engineering, Science, and Technology report contains a map of monitoring wells that previously existed at the Property. The locations of these monitoring wells appeared as concrete patches in the asphalt MEP area during the August 8, 2006, site reconnaissance, and therefore suggests that they have been abandoned. There were no PADEP monitoring well abandonment forms in the historical documents provided by the USAR Center.

Information from this source is presented in the Executive Summary and in Sections 3.3.2, 3.4, and 8.2.

3.5.13 2003 PCB Management Plan

This is a 2003 report by Bay Associates Environmental, Inc. that documents sampling activities at Pennsylvania USAR centers. Results of polychlorinated biphenyl (PCB) sampling of the USAR Center transformers indicate that PCBs are not present. Information from this source is presented in Sections 6.6 and 8.1.

3.5.14 2003 Underground Storage Tank Closure Report, U.S. Army Reserve Center, Germantown, PADEP Facility ID 51-40712; USARC Facility PA076 City of Philadelphia, Pennsylvania 19144

This report documented the removal of a 2,500-gallon No. 2 fuel UST. This was the last UST to be removed from the Property. No remedial activities were necessary after this tank removal, since the analytical results of post-excavation soil samples were below PADEP criteria. Information from this source is presented in Sections 3.3.2 and 3.4.

3.5.15 2005 BRAC 2005 Implementation Plan, S18 Real Property

The Real Property Action Plan is used to define actions relative to the BRAC recommendation to close the USAR Center. This document provides information on land use, building specifications, tenants, and infrastructure. Information from this source is presented in Section 2.2.

3.5.16 2005 Consolidated Annual Performance and Evaluation Report

This report provides an assessment of 3- to 5-year goals and objectives for the City of Philadelphia Neighborhood Transformation Initiative, and was used to assess the status of the neighboring Brownfield site.

The property at 6614-24 Germantown Avenue was identified in the Pennsylvania Brownfield Program and is located about 1,300 feet south-southeast and downgradient of the Property (EDR, 2006). Mount Airy USA has initiated predevelopment activities for the proposed development of this site and will provide commercial space to house existing and new businesses. Information from this source is presented in Section 5.2.7.

3.5.17 2005 Programmatic Natural Resource Management Plan, 79th Army Reserve Command Pennsylvania

This report was prepared to inventory and manage natural resources at USAR facilities in central and southeastern Pennsylvania. The report concluded that the USAR Center did not contain any key natural resources, including wetlands, surface water, floodplains, rare species, and/or the potential for rare species. Information from this source is presented in Section 7.3.

4 Adjacent Properties

Adjacent property land uses are significant to the ECP process, as these current or past uses may have an environmental impact on the USAR Center. Adjacent properties were included in the EDR report review for this reason. Typically, adjacent properties within 0.25 mile of the USAR Center property boundaries are reviewed and visually surveyed. For the purposes of this ECP, the adjacent property reconnaissance was performed from the USAR Center property boundaries and from public access points. Historical aerial photographs and topographic maps also were reviewed for conditions or activities that may have had an environmental impact on the Property.

4.1 Land Uses

Figure 10 in Appendix A, 2006 Google Earth Image, depicts the most recent image of land use surrounding the Property. Land use east of the Property consists of Wissahickon Avenue, a two-lane street, followed by residential neighborhoods. West Queen Lane and more residential neighborhoods are directly north of the Property. The residential neighborhoods consist of town homes and high-rise apartment buildings.

West of the Property are railroad tracks owned by SEPTA. These railroad tracks are about 15 to 20 feet lower in elevation than the USAR Center. Northwest of the Property, west of the railroad tracks, is the Drexel University College of Medicine. South of the Property is a Federal Building, which consists of administrative offices for Veterans' Affairs and Social Security Administration. The Federal Building is about 10 feet higher in elevation and is separated from the Property by a retaining wall. Table 1 summarizes the current adjacent properties and their owners.

TABLE 1
List of Properties Adjacent to Germantown Veterans Memorial USAR Center, Philadelphia, Pennsylvania

Name/Type of Property	Address	Distance and Direction from Property	Remarks
SEPTA, Southeastern PA Transportation Authority	NA	Approx. 100 feet west	Lower in elevation
General Services Administration	5000 Wissahickon Avenue, Philadelphia, PA 19144	Approx. 100 feet south-southeast	Higher in elevation

NA—Not applicable since this is a railroad track.

4.2 Findings

The EDR database search results were reviewed for any evidence that adjacent properties may have past or present environmental issues that would impact the USAR Center. Three

properties (MNB Sunoco, Alden Park Complex, and Bowman RES) were identified that exhibit environmental conditions which have the probability of adversely affecting the environmental conditions at the USAR Center (EDR, 2006). These sites are discussed in detail in Section 5.

Based on a review of available historical site and agency records and interviews with site personnel, neither a water supply well nor a septic system is or was located at the Property. Potable water is supplied by the City of Philadelphia (EDR, 2006). A search of federal and state water well databases did not identify any water supply wells within 0.5 mile of the property; however, the City of Philadelphia has one surface water plant about 0.5 mile southwest of the Property (EDR, 2006).

A review of historical aerial photographs indicates that the Property was an undeveloped lot before the USAR Center was constructed (Figures 4 and 5, Appendix A). Figure 6 in Appendix A shows the developed property in 1965. Subsequent aerial photographs (Figures 7 through 10, Appendix A) show very little development of the USAR Center or the surrounding properties after 1965. This progression of development is further noted in the 1952 and 1967 USGS 7.5-minute topographic maps (Figures 11 and 12, Appendix A).

5 Review of Regulatory Information

An essential component of an ECP is the review of records and databases containing information on the Property and adjacent properties. The review includes reasonably obtainable federal, state, and local government records, and is intended to identify a release or likely release of any hazardous substance or any petroleum product, which is likely to cause or contribute to a release or threatened release of any hazardous substance or any petroleum product to the Property.

The majority of the regulatory information for this ECP was obtained from EDR on July 12, 2006. EDR provides a regulatory database summary that consolidates standard federal, state, local, and tribal environmental record sources based on ASTM-recommended minimum search distances from the Property.

All findings reported in Sections 5.1, 5.2, and 5.3 are from the EDR report unless otherwise noted. A copy of the complete EDR report is included in Appendix E.

5.1 Federal Environmental Records

5.1.1 Federal National Priorities List Sites within 1 Mile

USEPA maintains a record of the nation's worst uncontrolled or abandoned hazardous waste sites, known as the National Priorities List (NPL). Sites on the NPL undergo long-term remedial action under CERCLA. The USAR Center is not an NPL site nor are there any such sites located within 1 mile of the Property (EDR, 2006).

5.1.2 Federal Comprehensive Environmental Response, Compensation and Liability Act Information Systems Sites within 0.5 Mile

The CERCLA Information System (CERCLIS) contains data on potentially hazardous waste sites that have been reported to USEPA by state, municipalities, private companies, and private persons, pursuant to Section 103 of the Act. CERCLIS contains sites that either are proposed to be or are on the NPL and sites that are in the screening and assessment phase for possible inclusion on the NPL.

The USAR Center is not a CERCLIS site, and there are no CERCLIS sites located within 0.5 mile of the USAR Center (EDR, 2006).

5.1.3 Resource Conservation and Recovery Act Corrective Action Sites within 1 Mile

Resource Conservation and Recovery Act (RCRA) corrective action sites (CORRACTS) represent facilities that have generated or managed hazardous wastes and require corrective action. The USAR Center is not a CORRACTS nor are there any such sites identified within 1 mile of the USAR Center (EDR, 2006).

5.1.4 RCRA Treatment, Storage, and/or Disposal Sites within 0.5 Mile

RCRA defines and regulates sites that generate, treat, store, and/or dispose (TSD) of hazardous wastes. The RCRA Information System (RCRIS) includes selective information on these sites.

The USAR Center is not an RCRA TSD site, and there are no such sites located with 0.5 mile of the USAR Center (EDR, 2006).

5.1.5 Federal RCRA Small and Large Quantity Generators List within 0.25 Mile

Conditionally exempt small quantity generators are defined as facilities generating less than 100 kg of hazardous waste or less than 1 kg of acutely hazardous waste per month. RCRA small quantity generators are defined as facilities generating between 100 and 1,000 kg of hazardous waste per month. A facility generating more than 1,000 kg of hazardous waste or over 1 kg of acutely hazardous waste per month is defined as a large quantity generator.

The USAR Center is listed as an RCRA-registered small quantity generator. No RCRA violations are associated with the USAR Center (EDR, 2006).

The Drexel University College of Medicine and the Medical College of Pennsylvania are listed at the same address, and are listed as an RCRA-registered large quantity generator and an RCRA-registered small quantity generator, respectively. This property is located about 519 feet northwest and downgradient of the USAR Center. No RCRA violations were noted for either college (EDR, 2006).

The Wissahickon One Hour Cleaners is located 1,188 feet southeast of the Property and is listed as an RCRA-registered small quantity generator. The Wissahickon One Hour Cleaners is upgradient of the Property, and no violations were noted for this site (EDR, 2006).

5.1.6 Federal Emergency Response Notification System List

The Federal Emergency Response Notification System (ERNS) List maintains information on reported releases of oil and hazardous substances. The USAR Center is not on this notification list (EDR, 2006).

5.2 State and Local Environmental Records

Most of the information presented in this subsection was obtained from the EDR report. Additional information also was obtained from online database searches of the State of Pennsylvania's Web site (http://www.depweb.state.pa.us/landrecwaste/cwp/). Occasionally, state and local agency personnel were interviewed via telephone to answer questions about any database issues.

5.2.1 State Lists of Hazardous Waste Sites within 1 Mile

The USAR Center is not on the state list of hazardous waste sites (EDR, 2006). No adjacent properties within 1 mile of the USAR Center were listed as having a hazardous waste site (EDR, 2006).

5.2.2 State-Registered Landfills or Solid Waste Disposal Sites within 0.5 Mile

The USAR Center does not have a solid waste landfill, incinerator, or transfer station within the Property boundaries (EDR, 2006). No adjacent properties within 0.5 mile of the USAR Center have a solid waste landfill, incinerator, or transfer station (EDR, 2006).

5.2.3 State-Registered Leaking UST Sites within 0.5 Mile

In addition to information obtained from the EDR report, the PADEP Bureau of Waste Management maintains a comprehensive database of LUST sites. This list represents the confirmed release incidents that have been reported to PADEP since the enactment of the Storage Tank and Spill Prevention Act (Tank Act) in July 1989. Releases from home heating oil tanks, which are not regulated by the Tank Act, are not part of this list.

The USAR Center is in the state LUST database and is listed as "cleanup completed" (PADEP, Land Recycling Program).

There are five LUST sites in various stages of closure within 0.5 mile of the Property. Table 2 summarizes their information relative to the USAR Center and provides the status of their corrective action.

MNB Sunoco, located 1,157 feet southeast of the Property, has one LUST. MNB Sunoco is higher in elevation than the USAR Center, and therefore, releases from this LUST may have the potential to impact the Property (EDR, 2006). The MNB Sunoco site received four violations in April 2005. The PADEP, Land Recycling Program, Bureau of Waste Management, Storage Tank Cleanup Location Web site identifies the LUST at MNB Sunoco as Status 2, which is defined by: "Interim or Remedial Actions Initiated - At a confirmed release, site characterization and/or physical activity to remove contaminants are underway and there are potential offsite receptors." The Status 2 qualification indicates that this LUST has not yet been closed by PADEP.

Two unregulated USTs are present at Alden Park Apartment Complex and Bowman RES. Both sites are upgradient and are located 2,007 feet northwest and 2,238 feet east-northeast, respectively, from the USAR Center. The Alden Park Apartment Complex and Bowmen RES sites each have one UST containing No. 2 fuel oil that is currently being cleaned up under regulations other than the Tank Act. Since these sites are located upgradient, releases from these USTs may have the potential to impact the Property.

The Amoco Station site is located about 2,331 feet south and downgradient of the Property. This site is listed as "cleanup completed" with NFA status, indicating it does not pose a threat to human health and the environment and, therefore, will not have an environmental impact on the Property (EDR, 2006).

The Marchwood Apartment complex is located 2,114 feet northwest of the Property. The LUST at this site is listed as "inactive" by PADEP. "Inactive" is explained by PADEP as a site where an incident has occurred, and "cleanup completed" status has not been achieved; however, it has been determined by PADEP to be a low priority for corrective action as a result of select criteria (that is, no product in the leaking storage tank system, no known free product in the environment, risks to human health and the environment have been mitigated, strong potential receptors to be impacted are not known to exist, the responsible party is not performing or planning to perform corrective action, or the case is at least

2 years old). The Marchwood Apartment complex is upgradient of the Property; however, based on its status as an inactive cleanup with no known receptors, this release is not suspected to have an environmental impact on the Property (EDR, 2006).

TABLE 2
Leaking Underground Storage Tank Sites
Near Germantown Veterans Memorial USAR Center, Philadelphia, Pennsylvania

Company/Site	Address	Distance and Direction from Property	Regulatory Status	Elevation Relative to Property
MNB Sunoco	5051 Wissahickon Avenue, Philadelphia, PA 19144	Approx. 1,157 feet southeast	Interim remedial actions initiated or completed	Higher
Alden Park Complex	5500 Wissahickon Avenue, Philadelphia, PA 19144	Approx. 2,007 feet northwest	Cleanup of tanks using authorities other than Act 32	Higher
Bowman RES	5041 Pulaski Avenue, Philadelphia, PA	Approx. 2,238 feet east-northeast	Cleanup of tanks using authorities other than Act 32	Higher
Amoco Station	2901 Abbottsford Avenue, Philadelphia, PA 19129	Approx. 2,331 feet south	Cleanup completed	Lower
Marchwood Apartments	5515 Wissahickon Avenue, Philadelphia, PA 19144	Approx. 2,114 feet northwest	Inactive, no identified receptors, no free product	Higher

Inactive—Incidents in this status have not achieved “cleanup completed” status. These incidents, however, have been determined by PADEP to be low priority for corrective action as a result of meeting select criteria (that is, no product in the leaking storage tank system, no known free product in the environment, risks to human health and the environment have been mitigated including vapor/fire/explosion hazards, contaminated drinking water supplies, and releases to surface waters, strong potential for receptors to be impacted is not known to exist, responsible party is not performing or planning to perform corrective action, or the case is at least 2 years old).

5.2.4 State-Registered UST Sites within 0.5 Mile

Review of the EDR report and the state of Pennsylvania’s UST database indicated two UST sites were identified within 0.5 mile of the USAR Center. Table 3 lists the sites along with the tanks’ status. The Property itself was not listed in the state UST database.

In addition to one LUST described in Section 5.2.3, MNB Sunoco has four active USTs. Three of the active USTs contain gasoline and range in size from 5,000 to 16,000 gallons. One of the active USTs contains diesel fuel and is 10,000 gallons in capacity. As mentioned in Section 5.2.3, the Status 2 qualification of the LUST at this site indicates that it has not yet been closed by PADEP.

As mentioned in Section 5.2.3, there are two unregulated USTs are present at Alden Park Apartment Complex and Bowman RES. Both sites are upgradient and are located 2,007 feet northwest and 2,238 feet east-northeast, respectively, of the USAR Center. The Alden Park Apartment Complex and Bowmen RES sites each have one UST containing No. 2 fuel oil that is currently being cleaned up under regulations other than the Tank Act. Since these sites are located upgradient, releases from these USTs may have the potential to impact the Property.

One 2,400-gallon diesel fuel AST is present at the Drexel University Queen Lane Campus. This site is downgradient and 519 feet northwest of the Property. No violations are listed for this facility.

TABLE 3
Underground Storage Tank Sites
Near Germantown Veterans Memorial USAR Center, Philadelphia, Pennsylvania

Company/Site	Address	Distance and Direction from Property	Tank Status	Closure Status	Elevation Relative to Property
MNB Sunoco	5051 Wissahickon Avenue, Philadelphia, PA 19144	Approx. 1,157 feet southeast	4 tanks currently active, 1 LUST	NA	Higher
Alden Park Complex	5500 Wissahickon Avenue, Philadelphia, PA 19144	Approx. 2,007 feet northwest	1 UST	NA	Higher
Bowman RES	5041 Pulaski Avenue, Philadelphia, PA	Approx. 2,238 feet east-northeast	1 UST	NA	Higher
Drexel University Queen Lane Campus	2900 Queen Lane, Philadelphia, PA 19129	Approx. 519 feet northwest	1 active 2,400-gallon diesel fuel AST	NA	Lower

AST—aboveground storage tank
LUST—leaking underground storage tank
UST—underground storage tank

5.2.5 State Spills Incidents

The USAR Center is not listed on the Pennsylvania state petroleum spill list (EDR, 2006).

5.2.6 Records of Contaminated Public Wells within 0.5 Mile

PWD does not own or operate any municipal water supply wells within 0.5 mile of the Property; however, PWD has one surface water plant about 0.5 mile southwest and upgradient of the Property. No records of any contamination of this surface water plant were found (EDR, 2006).

5.2.7 Voluntary Remediation Program Sites within 0.5 Mile

The USAR Center is not listed in Pennsylvania's Brownfield Program (the successor to the Voluntary Cleanup Program [VCP]). One site located within 0.5 mile of the USAR Center is listed as being in the Brownfield Program, and one site is listed in the Pennsylvania VCP.

The property at 6614-24 Germantown Avenue was identified in the Pennsylvania Brownfield Program and is located about 1,300 feet south-southeast and downgradient of the Property (EDR, 2006). Mount Airy USA has initiated predevelopment activities for the proposed development of this site and will provide commercial space to house existing and new businesses (Office of Housing and Community Development, 2005).

WM Penn Charter School is located 2,491 feet west-northwest of the Property and is listed in the EDR report as being in the Pennsylvania VCP. No additional information was available about this site (EDR, 2006).

5.2.8 State-Registered Bulk Fertilizer and Pesticide Storage Facilities within 0.25 Mile

The USAR Center is not registered with the state as a bulk fertilizer and pesticide storage facility. Additionally, no adjacent properties within 0.25 mile were registered as one of these facilities (EDR, 2006).

5.3 Unmapped Sites

Some sites within the databases for EDR searches have the same zip code as the USAR Center, but no street address. These sites, known as unmapped or orphan sites, cannot be mapped from the EDR results alone. Additional efforts described herein were made to locate these sites and assess their environmental importance to the USAR Center.

Using the mapping utility provided at maps.google.com, the locations of the orphan sites were identified and mapped. The following four sites are located within 1 mile of the Property (EDR, 2006):

- Wister 1967 is a school located about 4,800 feet northeast from the USAR Center and about equal in elevation. This site has an unregulated tank that is most likely a heating oil tank. No violations were found for this facility.
- Atlantic Service Station is about 3,700 feet northeast of the USAR Center and about equal in elevation. This site is listed as an RCRA small quantity generator. No violations were found for this facility.
- Germantown Settlement CS is about 4,800 feet east-northeast and downgradient of the USAR Center. This site is listed in the Facility Index System/Facility Registry System (FINDS) database. No violations were found for this facility.
- The General Services Administration site is the Federal Building that bounds the Property to the south. This site is listed in the NY Manifest database. No violations were found for this facility.

No information on releases was found for any of these sites. The remaining orphan sites identified in the 2006 EDR report are outside the ASTM search radius distance.

5.4 Summary of Properties Evaluated to Determine Risk to the Property

To summarize Sections 5.1 through 5.3, three separate properties, near or adjacent to the USAR Center, were evaluated as potential risk properties to the Property. These adjacent properties evaluated were identified as a result of information obtained during area reconnaissance, interviews, and regulatory database searches, and are summarized in Table 4.

TABLE 4
Properties Evaluated for Potential Environmental Risks
Germantown Veterans Memorial USAR Center, Philadelphia, Pennsylvania

Company/Site	Database	Elevation Relative to Property?	Potential Impact on the Property?	Comments
MNB Sunoco	LUST, UST	Higher	Yes	Interim remedial actions initiated or completed
Alden Park Complex	Unregulated Tanks	Higher	Yes	No. 2 fuel oil LUST
Bowman RES	Unregulated Tanks	Higher	Yes	No. 2 fuel oil LUST

LUST—leaking underground storage tank
UST—underground storage tank

6 Site Investigation and Review of Hazards

Findings documented in the following subsections are based on the August 8, 2006, site reconnaissance, a review of available site records, and information obtained from USAR personnel.

6.1 USTs/ASTs

During the August 8, 2006, site reconnaissance, a 6,000-gallon concrete storage tank that had been removed from another facility was identified in the MEP area. This tank was destined to be installed at the USAR Center, however, the facility converted from oil heat to natural gas, and the tank was never used. Interviews with 99th RRC personnel noted that the tank is empty and was previously used to store No. 2 fuel oil. There were no leaks or stained pavement present near the tank. One AST and three USTs were present at the Property; however, they were removed. Details on the removal of the AST and three USTs, and associated remedial activities, are presented in Section 3.4.

6.2 Inventory of Chemicals/Hazardous Substances

Records pertaining to hazardous substances including hazardous materials, chemical bulk storage, petroleum products, hazardous waste, and petroleum waste were reviewed in addition to interviews and the site reconnaissance to develop the inventory for this Property. The USAR Center is listed as an RCRA small quantity generator (EDR, 2006). Evidence of hazardous materials storage was observed during the August 8, 2006, site reconnaissance. During the August 8, 2006, site reconnaissance, the following items were found stored on the pavement next to the southeast corner of the administration building, both containers were about one-third full:

- 5-gallon metal container of gear oil
- 5-gallon plastic container of transmission fluid

The following items were found in the OMS building, stored directly on the floor or on open shelves:

- Antifreeze
- Oil
- Small propane containers
- Gear oil
- Paint thinner
- Transmission fluid
- Brake fluid
- Fire extinguishers
- 55-gallon drum labeled “Oil Services, Inc. Neville Island, PA”
- Oxygen and acetylene tanks

The following items were located inside two covered containment pallets on the wash rack:

- One blue plastic kerosene container along with four metal and three plastic unlabeled 5-gallon containers with a petroleum-like odor and oily sheen on the water in the bottom of the container
- Two plastic 55-gallon drums with unknown contents

Other than the assumed routine application of pesticides and herbicides, no evidence of pesticide or herbicide use (empty containers, dead or stressed vegetation) was observed during the site reconnaissance, except for stressed vegetation identified under the fence of the Property; this may be indicative of excessive application of pesticides and herbicides. The 99th RRC personnel interviewed during the August 8, 2006, site reconnaissance were not aware of the use of any pesticides or herbicides.

6.3 Waste Disposal Sites

Available records and interviews did not indicate the practice of onsite waste disposal other than through managed storage and offsite disposal, or through the sewer or septic systems (refer to Section 6.4). No waste disposal sites were observed during the August 8, 2006, site reconnaissance. There were no signs of past onsite waste disposal observed.

6.4 Pits, Sumps, Drywells, and Catch Basins

During the August 8, 2006, site reconnaissance, two wash areas were identified. The primary wash rack is located adjacent to the northwest corner of the OMS building. The wash rack had a metal plate covering the drain grate, and 99th RRC personnel stated that the wash rack is no longer used. The second wash area is a concrete pad behind the OMS building, along the southwest wall, and 99th RRC personnel noted that larger vehicle washing may have occurred along this longer concrete pad as well. Both of these vehicle washing areas slope west, offsite, toward the SEPTA regional railroad tracks.

A 1994 environmental compliance assessment states that the wash rack has been "closed," and that the facility is no longer engaged in the outdoor washing of vehicles to eliminate escape wash water from entering nearby surface waters (Geophex, 1994). The primary wash rack reportedly did not have an OWS, and none was identified during the site reconnaissance survey. The location or system the drain grate in the wash rack discharges to could not be confirmed. In addition, since there was no containment around the vehicle washing areas, it is likely that waste fluids generated during vehicle washing activities also ran off the pavement and onto the adjoining grass. These waste fluids most likely consisted of petroleum products, antifreeze, battery acid, and solvents. There were no reports available for this ECP report that document any investigations related to the vehicle washing areas.

During the August 8, 2006, site reconnaissance, there was one sump and one floor drain in the boiler room inside the main building, and one sump (Photograph 5, Appendix B) and one abandoned maintenance pit in the OMS building. The sump and floor drain in the main building are assumed to be connected to the sanitary sewer system. Copper pipes were

directed over the floor drain and appear to be draining condensation water from the buildings air conditioning system. The sump in the OMS building was about 5 feet deep and appeared to contain water pipes. The concrete pit was dry and appeared to be a former trap for steam or hot water systems. Available documents reviewed, interview notes, and visual observations did not identify this pit as a potential disposal site for hazardous or POL products.

The former maintenance pit was previously an open pit in the OMS building that was used for servicing vehicles. The pit was abandoned by filling it with concrete at an unknown date. There was no closure documentation for the maintenance pit; however, there was no evidence of a release in the reasonably available information; and any releases that might have occurred are likely to have been de minimis quantities based on process knowledge.

No stormwater grates were identified in the POV parking or MEP areas. In the MEP area, surface runoff is assumed to sheet flow to the west and southwest portions of the Property. In the POV parking lot, surface runoff would most likely flow north-northwest. Drain pipes also are located in the retaining wall between the Federal Building and the USAR Center and drain onto the Property.

6.5 Asbestos-containing Material

The November 17, 2000, Asbestos Inspection and Management Plan states that asbestos was previously present in the boiler room, assembly room, and general building space. This report further states, "All asbestos has been removed from the Germantown USAR Center" (Department of the Army, 2000).

6.6 PCB-containing Equipment

During the August 8, 2006, site reconnaissance, two unlabeled, pad-mounted transformers were located on the Property, next to the southwest corner of the main building. The units appeared to be in good condition, and no evidence of leakage was observed. Interviewed 99th RRC personnel were not aware of any current or past uses of PCBs on the facility. Bay Associates Environmental, Inc. collected and analyzed samples from the transformers in 2003, and PCBs were not detected (reporting limit of 6,800 micrograms per kilogram [µg/kg]) (Bay Associates, 2003).

6.7 Lead-based Paint

There is no documentation to confirm that an LBP survey has been completed at the facility (U.S. Army Engineer Group, 2000). All buildings on the Property were constructed before 1981 and, therefore, have the potential to have LBP present.

Peeling and chipped paint were noted in several rooms inside the main building and OMS building during the August 8, 2006, site reconnaissance. The exterior of the OMS and main buildings are constructed with a brick veneer, and no chipped or peeling paint were noted on the buildings exteriors.

6.8 Radon

A radon survey was performed at the USAR Center in 1993. The results of this survey were summarized in a memorandum dated February 28, 1994, and conclude that radon concentrations are below the USEPA residential action level of 4.0 pCi/L (Department of the Army, 1994). The USEPA map of radon zones indicates that the USAR Center is in Zone 3, meaning it has a low potential for radon (less than 2 pCi/L) (http://www.epa.gov/radon/zonemap/ pennsylvania.htm).

6.9 Munitions and Explosives of Concern

Based on a review of available records, the site reconnaissance, and interviews with USAR Center personnel, there are no indications that munitions and explosives of concern (MEC) are or were present at the Property. There was an indoor firing range on the Property located on the second floor of the main building in Room 213; however, it was decommissioned. Lead was identified as a contaminant by Gillan and Hartmann, Inc. in its April 27, 1992, field investigation and sampling report (Gillan and Hartmann, 1992). In November and December 1992, Exide Corporation removed ballistic sand from the former USAR Center firing range (Exide Corporation, 1992). Additional reports documenting decommissioning activities were not available at the time of this ECP report preparation.

During the August 8, 2006, site reconnaissance, the firing line, shooter partitions, target retrieval system, bullet trap, deflector plates, and acoustical tiles were not present. The room consisted of painted cinder block walls and concrete floors with the exception of the north side of the room where the floor was plywood.

6.10 Radioactive Materials

Based on the August 8, 2006, site reconnaissance and interviews with USAR Center personnel, radioactive materials were present in equipment used on the Property. Meters used to monitor NBC hazards were stored in the main building. These meters apparently contain small quantities of radioactive material in sealed containers and are not regulated. None of the historical documents identified any evidence of misuse, disposal, or contamination of radioactive substances at the Property.

7 Review of Special Resources

7.1 Land Use

The zoning information could not be obtained for this report. Based on historical aerial photographs, the USAR Center is located in an area that combines commercial and residential land uses. As mentioned in Section 1, the Property is bounded by residential neighborhoods to the north and east, and a Federal Building to the south.

7.2 Coastal Zone Management

The PADEP Water Planning Office is the lead agency for the Pennsylvania Coastal Zone Management Program. This Property is not included in the coastal zone management plan, nor is it in a coastal zone (PADEP, Coastal Zone Management Program).

7.3 Wetlands

According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory map (EDR, 2006), no jurisdictional wetland areas are identified on the Property or on adjacent properties. The nearest wetland is located about 0.25 mile south-southwest of the Property.

During the August 8, 2006, site reconnaissance, no conditions were present that suggested the presence of wetlands on the Property (that is, areas with standing water or wetland vegetation). Based on STATSGO data provided in the EDR report dated July 12, 2006, the soils present at the Property are from the Chester Series, which are classified as a well-drained silt loam, and do not meet the requirements for a hydric soil (that is, wetland indicator soils). Most of the site is paved, with only a narrow strip of grass and trees located at the front, northeastern portion of the property. Further, the *Programmatic Natural Resource Management Plan 79th Army Reserve Command Pennsylvania,* prepared in July 2005 did not identify any wetlands at the Property (USACE Baltimore District, 2005).

7.4 100-year Floodplain

A review of the Federal Emergency Management Agency (FEMA) digital Flood Hazard Area map indicates that the Property lies outside the 100-year floodplain. The EDR radius search report in Appendix E provides a map of the 100-year floodplain elevations located in the immediate vicinity of the Property. 99th RRC personnel were not aware of the facility ever being flooded.

7.5 Natural Resources

A report entitled *Programmatic Natural Resource Management Plan 79th Army Reserve Command Pennsylvania* was prepared for the 79th RRC in an effort to inventory and manage

natural resources found at 79th RRC facilities in central and southeastern Pennsylvania. The report concluded that the USAR Center did not contain any key natural resources, including wetlands, surface water, floodplains, rare species, or the potential for rare species (U.S. Army, 1995).

7.6 Cultural Resources

In July 1995, a Cultural Resource Management Plan for the Property was prepared for the 79th RRC by the KFS Historic Preservation Group, Kise Franks & Straw, Inc., in association with Hunter Research, Inc. The purpose of the survey and subsequent report was to inventory thirty-two 79th RRC properties in central and southeastern Pennsylvania. To facilitate the cultural resource assessment, background research and site visits were conducted for each of the 32 facilities. Research included an evaluation of historical documents, previous assessments, and a summary description of the facility and its surroundings. In addition, each site was assessed for its eligibility to the NRHP. The report concludes that no historic architectural resources were identified at the Property, and neither of the buildings at the Property was found to meet the criteria for inclusion in the NRHP; however, two archaeological sites—the Gardette Site and the Atwater Kent Factory Site—are located in the vicinity of the Property (KFS Historic Preservation Group, 1995). Appendix D provides a copy of the July 1995 Cultural Resource Management Plan.

7.7 Other Special Resources

Based on a review of available current and historical documents, no additional special resources were identified on the Property or the immediate surrounding area.

8 Conclusions

The following information was obtained after conducting an environmental record search including records for adjacent properties, reviewing available historical information, conducting interviews with knowledgeable parties connected with the Property or with state and local agencies, and conducting a reconnaissance of the Property and adjacent properties.

8.1 Review of Findings

Hazardous Substances. Hazardous substances pursuant to CERCLA §101(14) (42 United States Code 9601 (14)) were used and stored at the Property in amounts necessary to support unit-level vehicle and building maintenance activities.

The following was observed during the August 8, 2006, site reconnaissance:

- An abandoned in place maintenance pit was identified in the OMS building with no closure documentation or maintenance and inspection records. The maintenance pit was previously an open pit in the OMS building that was used for servicing vehicles. At an unknown date, the pit was abandoned by filling it with concrete. There was no closure documentation for the maintenance pit; however, there was no evidence of a release in the reasonably available information, and any releases that might have occurred are likely to have been de minimis quantities based on process knowledge.
- Two vehicle washing areas were identified behind the southwest wall of the OMS building and consist of a wash rack and a concrete pad. Both of these vehicle washing areas are flush with the surrounding pavement and slope west, offsite, toward the SEPTA regional railroad tracks. An OWS was not present on the Property nor were there any records indicating the wash rack had an OWS. The location or system receiving discharge from the drain in the wash rack could not be confirmed. Further, since there is no containment around the vehicle washing areas, it is likely that waste fluids generated during vehicle washing activities also ran off the pavement and onto the adjoining grass. A 1994 environmental compliance assessment states that the wash rack has been "closed," and that the facility is no longer engaged in the outdoor washing of vehicles to eliminate escape wash water from entering nearby surface waters (Geophex, 1994). These waste fluids most likely consisted of petroleum products, antifreeze, battery acid, and solvents; however, no stressed vegetation exists surrounding the wash rack areas. No closure documentation or maintenance and inspection records were available for either wash area.

USTs/ASTs. Based on the August 8, 2006, site reconnaissance and a review of historical documents, there is currently one 6,000-gallon storage tank stored on the MEP lot; however, this tank is not being used by the facility. One AST and three USTs were present on the Property; however, they were removed. Details on the removal of these USTs and associated remedial cleanup activities are presented in Section 3.4.

Non-UST/AST Petroleum Storage. One 55-gallon steel drum suspected of containing a petroleum substance was stored in the OMS building. The drum was about 25 percent full and labeled "Oil Services, Inc., Neville Island, PA."

PCBs. Two pad-mounted transformer units are located on the Property. Bay Associates Environmental, Inc. collected and analyzed samples from the transformers in 2003, and PCBs were not detected (reporting limit of 6,800 µg/kg) (Bay Associates, 2003).

ACM. The November 17, 2000, Asbestos Inspection and Management Plan states that asbestos was previously present in the boiler room, assembly room, and general building space. This report further states, "All asbestos has been removed from the Germantown USAR Center" (Department of the Army, 2000).

LBP. No LBP surveys have been conducted at the Property. All buildings on the property were constructed before 1981 and, therefore, have the potential to have LBP present.

Peeling and chipped paint were noted in several rooms inside the main building and OMS building during the August 8, 2006, site reconnaissance. The exterior of the OMS and main buildings are constructed with a brick veneer, and no chipped or peeling paint were noted on the buildings exteriors.

Radiological Materials. Based on the August 8, 2006, site reconnaissance and interviews with USAR Center personnel, radioactive materials were present in equipment used on the Property. Meters used to monitor NBC hazards were stored in the main building. These meters apparently contain small quantities of radioactive material in sealed containers and are not regulated.

Radon. A radon survey was performed at the USAR Center in 1993. The results of this survey were summarized in a memorandum dated February 28, 1994, and conclude that radon concentrations are below the USEPA residential action level of 4.0 pCi/L (Department of the Army, 1994). The USEPA map of radon zones indicates that the USAR Center is in Zone 3, meaning it has a low potential for radon (less than 2 pCi/L) (http://www.epa.gov/radon/zonemap/ pennsylvania.htm).

MEC. Available records do not indicate any MEC currently or formerly located at this Property. No evidence of MEC was observed during the site reconnaissance.

Surrounding Properties. Potential environmental sites of concern, located within the standard ASTM search radius distance from the Property, were evaluated through database review and site reconnaissance. Three adjacent properties, MNB Sunoco, Alden Park Complex, and the Bowman RES sites, are located upgradient of the Property, and each have LUSTs. MNB Sunoco is an active gas station and has four violations for failure to comply with UST system release detection requirements. The Alden Park Complex and Bowman RES sites each have LUSTs containing No. 2 fuel oil. Section 5 provides information on each of these three properties.

Wetlands and Floodplain. According to the USFWS National Wetlands Inventory maps, the 2006 EDR report, and visual observations during the August 8, 2006, site reconnaissance, no wetlands were observed or appear to be associated with any of the facilities at this site or with any adjacent properties. The Property is not located within a 100-year floodplain or within a coastal zone.

Threatened and Endangered Species. A report entitled *Programmatic Natural Resource Management Plan 79th Army Reserve Command Pennsylvania* was prepared for the 79th RRC in an effort to inventory and manage natural resources found at 79th RRC facilities in central and southeastern Pennsylvania. The report concluded that the USAR Center did not contain any key natural resources, including wetlands, surface water, floodplains, rare species, or the potential for rare species (U.S. Army, 1995).

Archaeological and Historical Resources. In July 1995, a Cultural Resource Management Plan for the Property was prepared for the 79th RRC by the KFS Historic Preservation Group, Kise Franks & Straw, Inc., in association with Hunter Research, Inc. The report concludes that no historic architectural resources were identified at the Property, and neither of the buildings at the Property was found to meet the criteria for inclusion in the NRHP; however, two archaeological sites—the Gardette Site and the Atwater Kent Factory Site—are located in the vicinity of the Property (KFS Historic Preservation Group, 1995).

8.2 Environmental Condition of Property

Findings of this ECP report were based on reasonably available environmental information; interviews with site, state, and local personnel; review of previous environmental studies; and federal and state database and file information related to the storage, release, treatment, or disposal of hazardous substances or petroleum products. Results also were based on visual observations of the Property and adjacent properties.

In accordance with DoD policy defining the classifications (see Sherri Goodman memorandum dated 21 October 1996), the Property has been classified into one of seven property types. Based on the results of this ECP study, the property has been assigned an overall DoD Environmental Condition Type 3. The property type is based on the following major findings:

- Location of former 1,500- and 12,000-gallon USTs removed in 1992. Remedial activities were performed to remove contamination associated with these USTs. PADEP issued an NFA letter in 2002.
- Location of a former 2,500-gallon USTs removed in 2003.
- Southeastern corner of the Property, next to Wissahickon Avenue. Available information concerning the nature and extent of petroleum contamination from the LUST at the MNB Sunoco property was not available for this ECP report.
- Northwestern corner of the Property, next to Wissahickon Avenue. Available information concerning the nature and extent of petroleum contamination from LUSTs at the Alden Park APT Complex and Bowman RES properties was not available for this ECP.
- Vehicle washing areas. Two vehicle washing areas were identified by 99th RRC personnel during the August 8, 2006, site reconnaissance. The vehicle washing areas are located behind the southwest wall of the OMS building and consist of a wash rack and a concrete pad. Both of these vehicle washing areas are flush with the surrounding pavement and slope west, offsite, toward the SEPTA regional railroad tracks. An OWS is

not present on the Property. The location or system receiving discharge from the drain in the wash rack could not be confirmed. Furthermore, since there is no containment around the vehicle washing areas, it is likely that waste fluids generated during vehicle washing activities also ran off the pavement and onto the adjoining grass. A 1994 environmental compliance assessment states that the wash rack has been "closed," and that the facility is no longer engaged in the outdoor washing of vehicles to eliminate escape wash water from entering nearby surface waters (Geophex, 1994). These waste fluids most likely consisted of petroleum products, antifreeze, battery acid, and solvents. No stressed vegetation was visible around the vehicle washing areas during the site reconnaissance. There were no reports available for this ECP report that document any investigations related to the vehicle washing areas.

- Former OMS maintenance pit area. The maintenance pit was previously an open pit in the OMS building that was used for servicing vehicles. The pit was abandoned by filling it with concrete at an unknown date. There was no closure documentation for the maintenance pit; however, there was no evidence of a release in the reasonably available information, and any releases that might have occurred are likely to have been de minimis quantities based on process knowledge.

9 References

Persons Contacted

Environmental Protection Specialist, RSO #2, 570-342-3786 ext. 1220 (office), 570-417-9556 (cell).

FOS, 215-384-4616 (cell), 215-443-1618 (fax).

Facility Coordinator.

Resources Consulted

- Aerial photographs provided by Environmental Data Resources (EDR) dated 1943, 1950, 1965, 1973, 1986, and 1992.
- U.S. Geological Survey (USGS) 7.5-minute 1:24,000 topographic maps provided by Environmental Data Resources (EDR). Germantown Quad dates 1952, 1967, and 1997.
- U.S. Fish and Wildlife Service National Wetlands Inventory Map, http://wetlandsfws.er.usgs.gov.wtlnds/launch.html.

State and Local Regulatory Databases

- Pennsylvania Department of Environmental Protection (PADEP), Land Recycling Program, Bureau of Waste Management, Storage Tank Cleanup Location, http://www.depweb.state.pa.us/landrecwaste/lib/landrecwaste/storagetankcleanups/tankincidents.xls.
- Pennsylvania Department of Environmental Protection (PADEP), Water Planning Office, Coastal Zone Management Program. http://www.dep.state.pa.us/river/czmp.htm.
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United States Army Engineer Group (416th ENCOM). 2000. Engineering and Environmental Facility Assessment for Germantown Veterans Memorial USAR Center. Facility Engineer Center-Northeast. April.

Unknown Author. 2005. BRAC 2005 Implementation Plan, S18 Real Property.

Appendix A
Figures

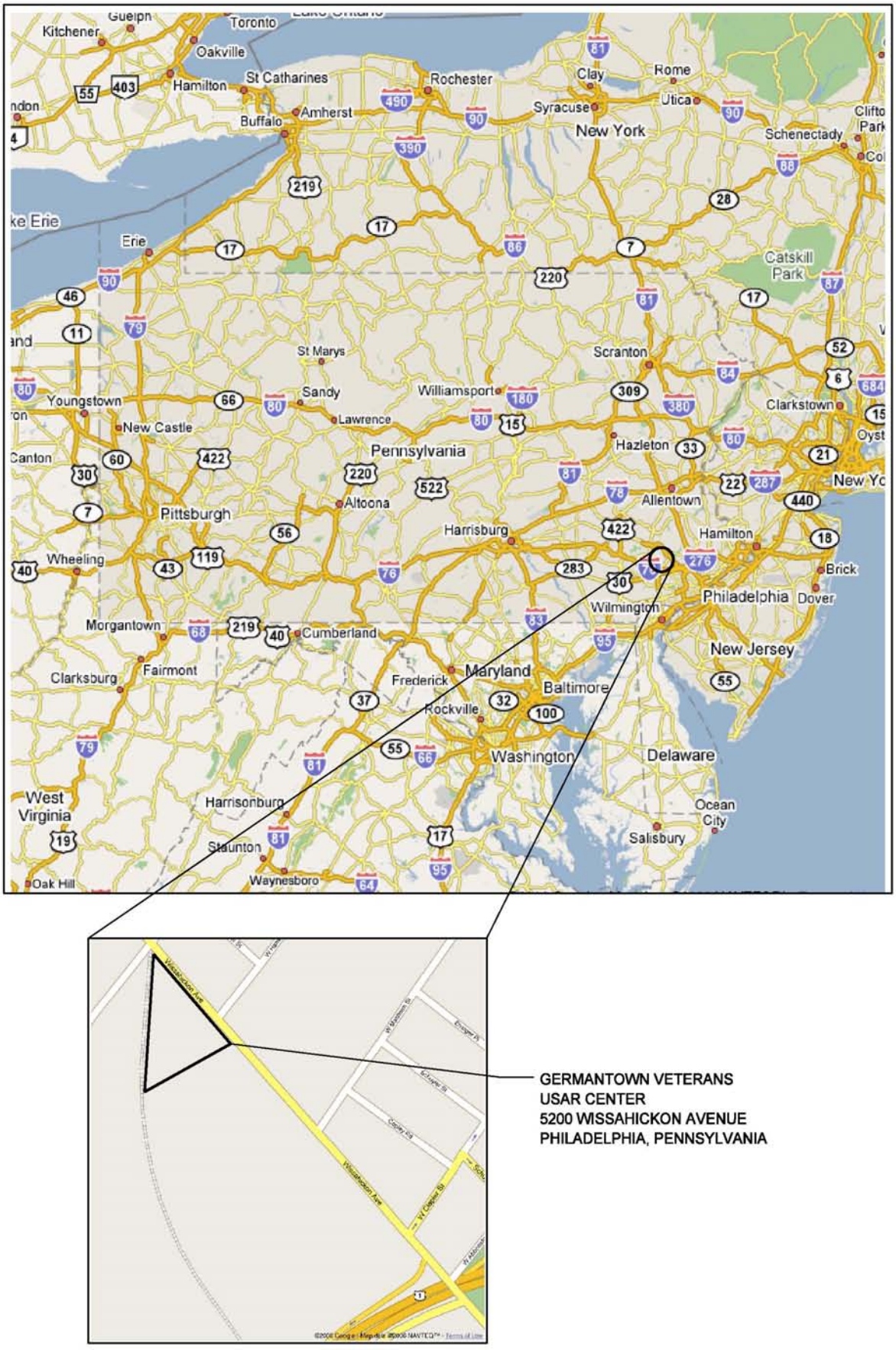


FIGURE 1
General Site Location Map
Phase I ECP Report

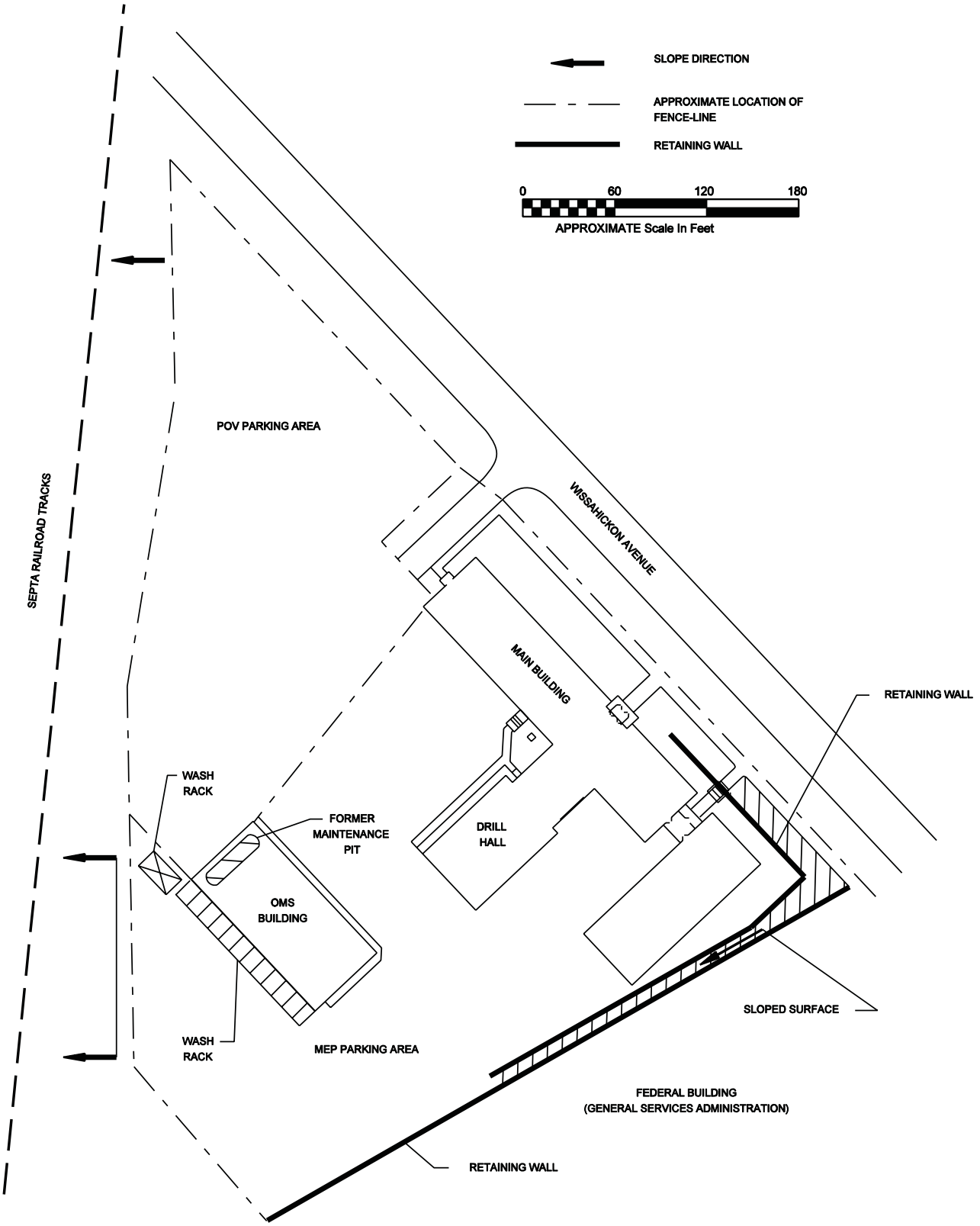
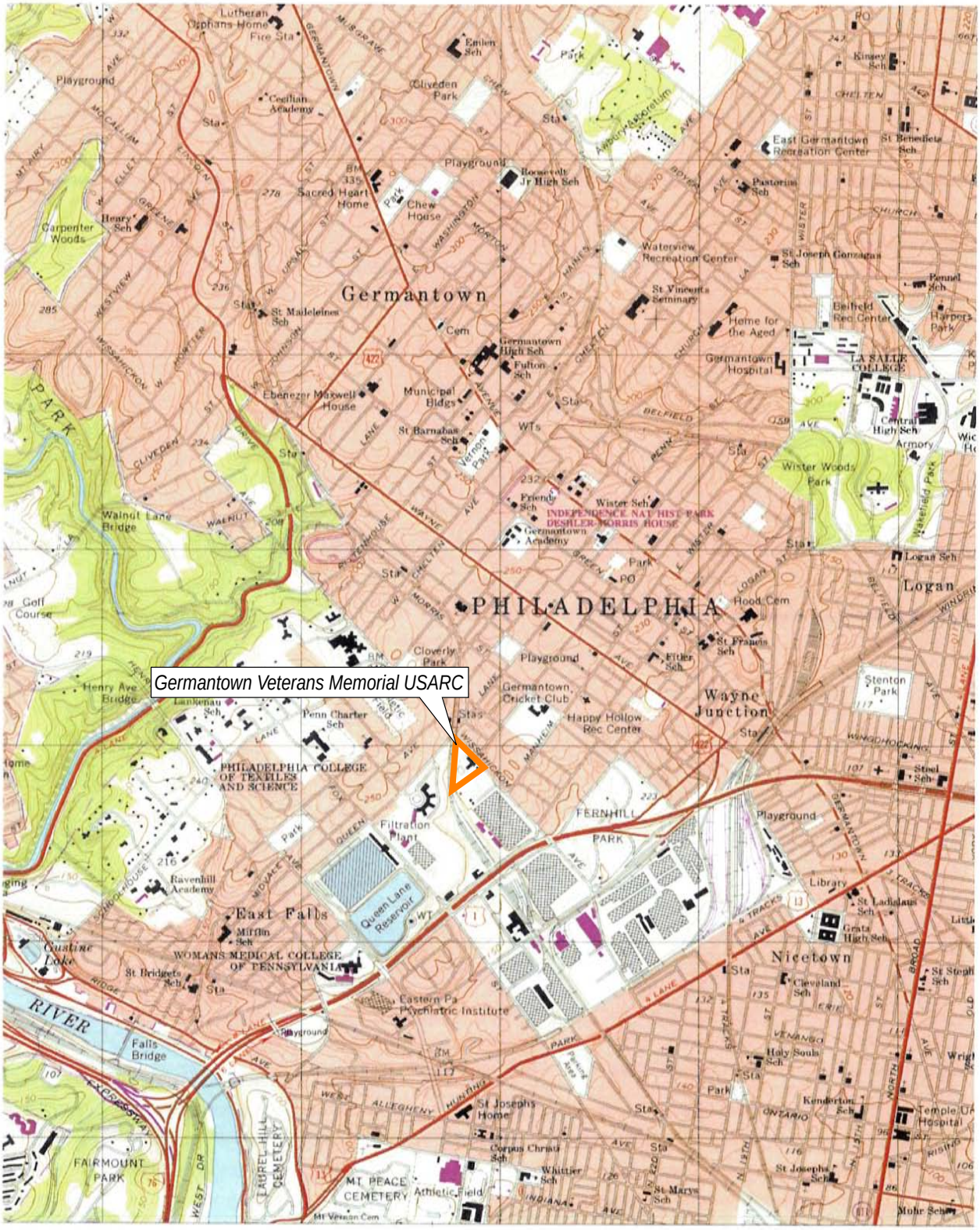


FIGURE 2
Site Plan
Phase I ECP Report



N ^ EDR INQUIRY# 1714247.226 TARGET QUAD: GERMANTOWN YEAR: 1997 Series: 7.5' Scale: 1:24,000

FIGURE 6
1997 USGS 7.5-minute
Topographic Map
Phase I ECP Report

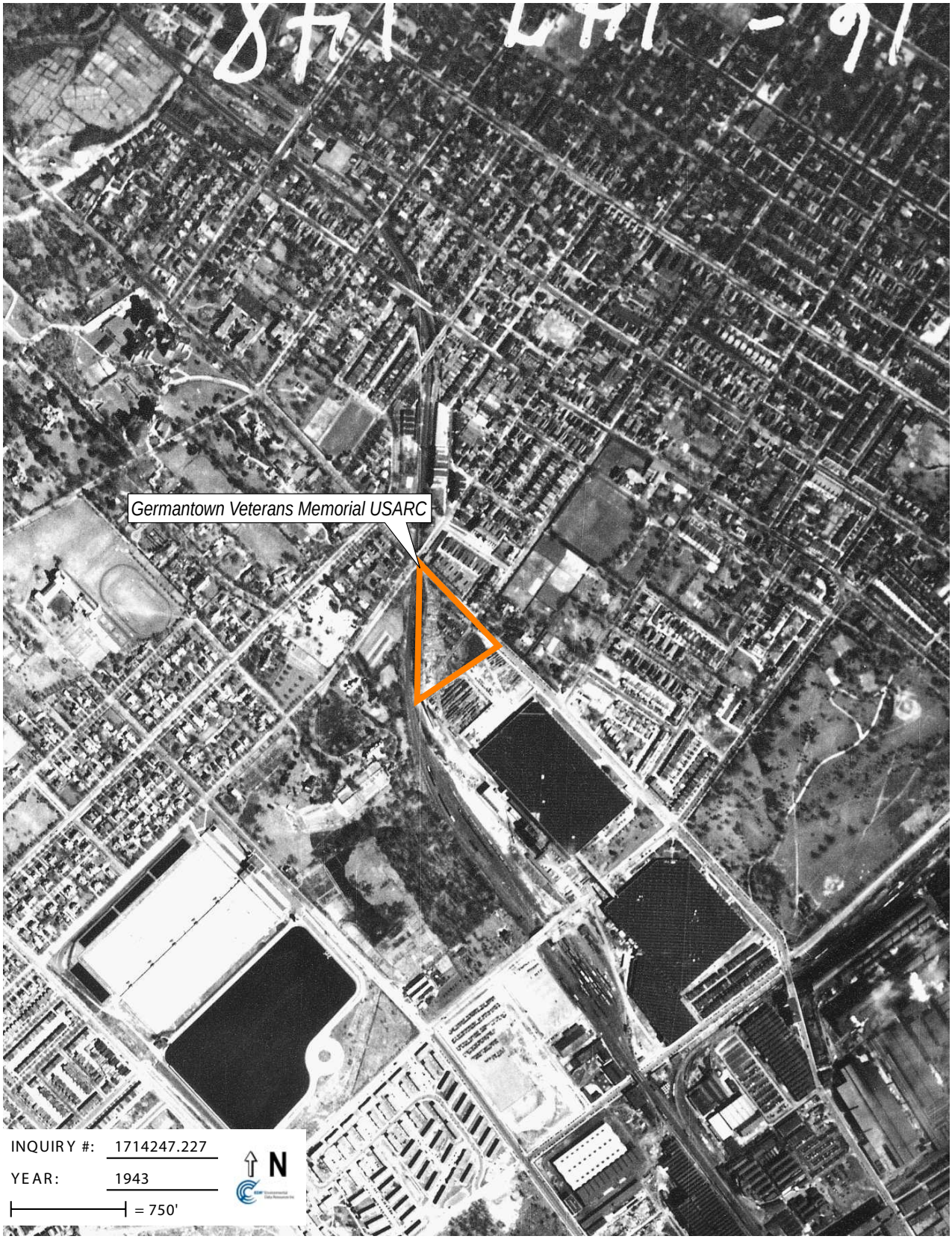


FIGURE 4
1943 Aerial Photograph
Phase I ECP Report

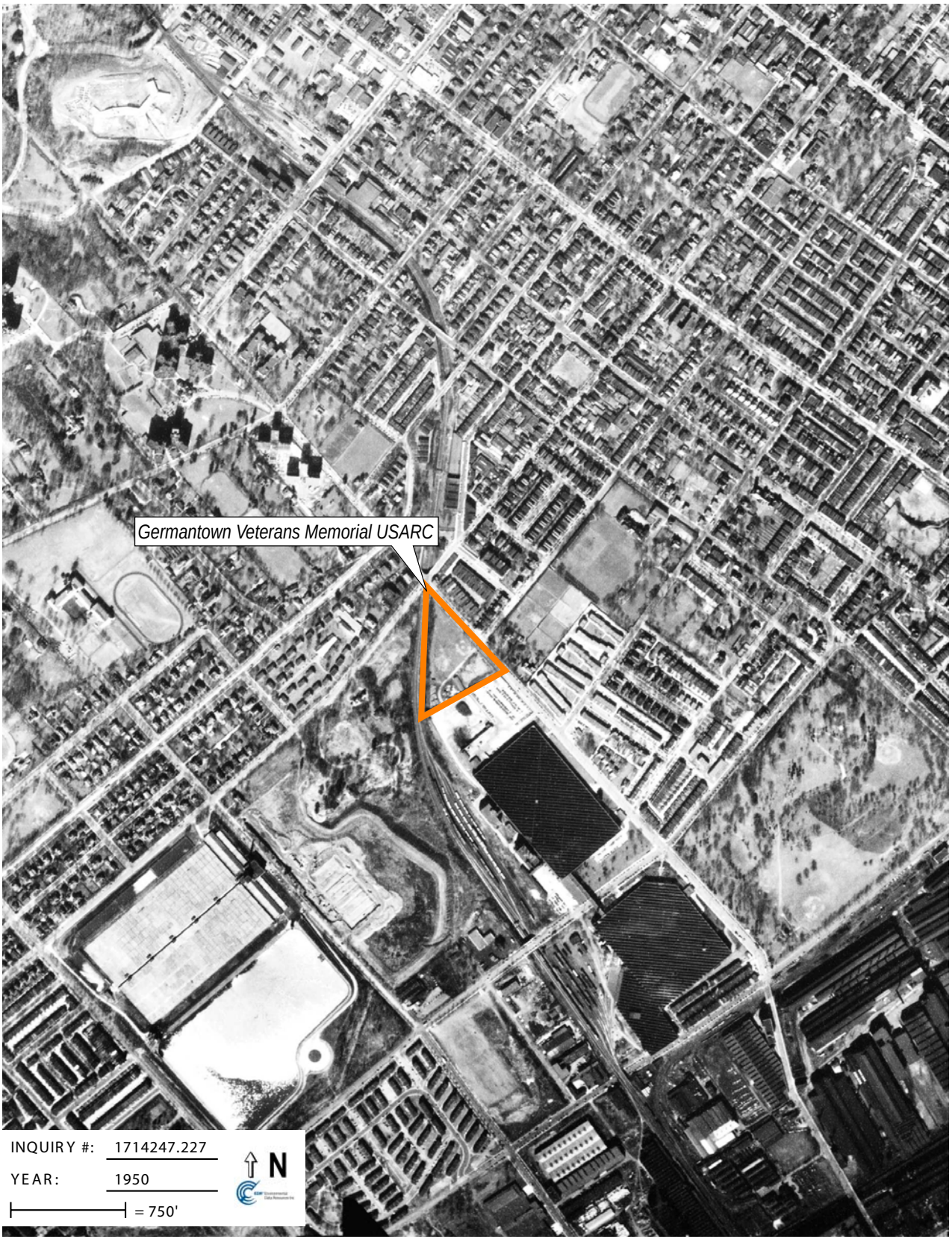


FIGURE 5
1950 Aerial Photograph
Phase I ECP Report

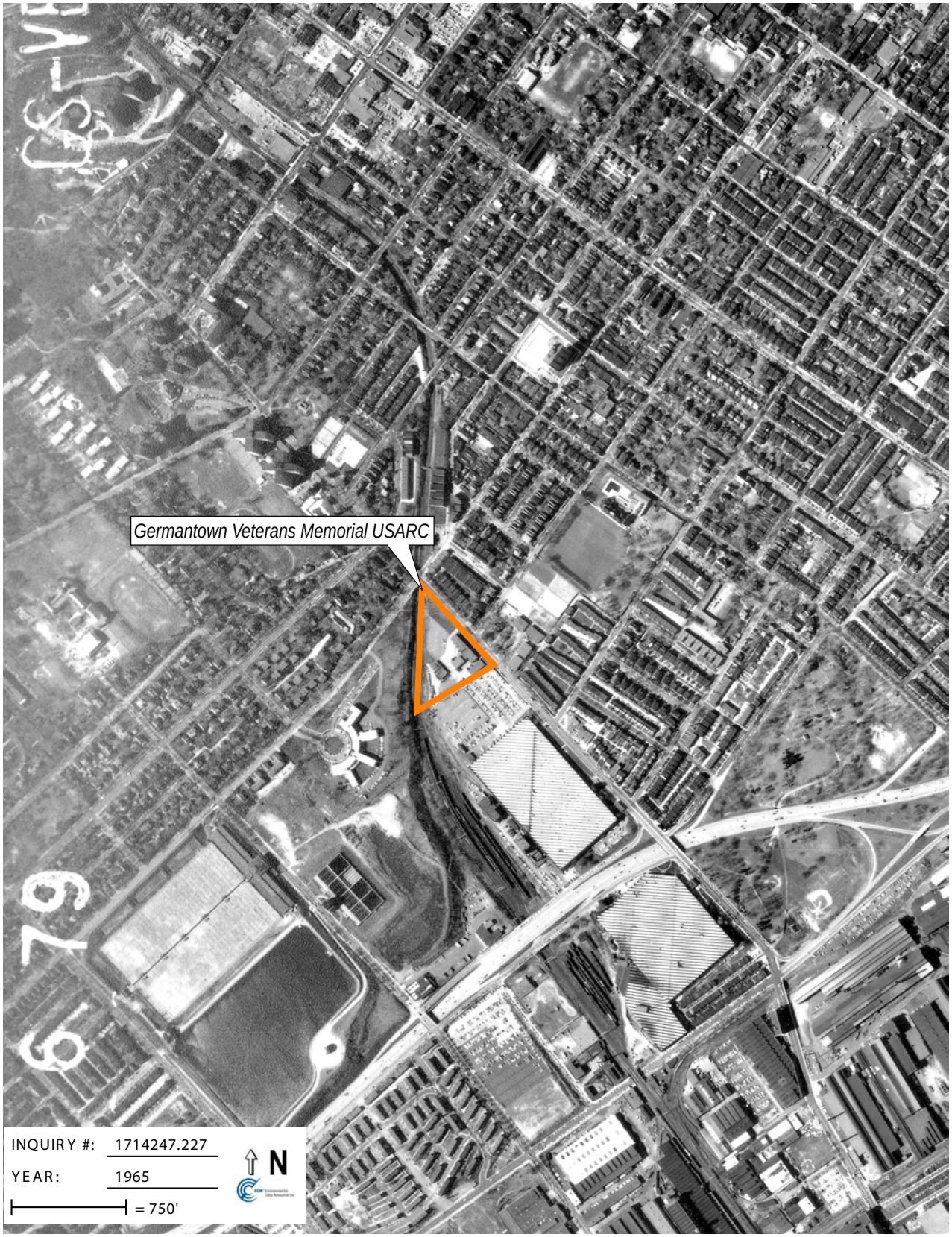


FIGURE 6
1965 Aerial Photograph
Phase I ECP Report

FIGURE 7
1973 Aerial Photograph
Phase I ECP Report

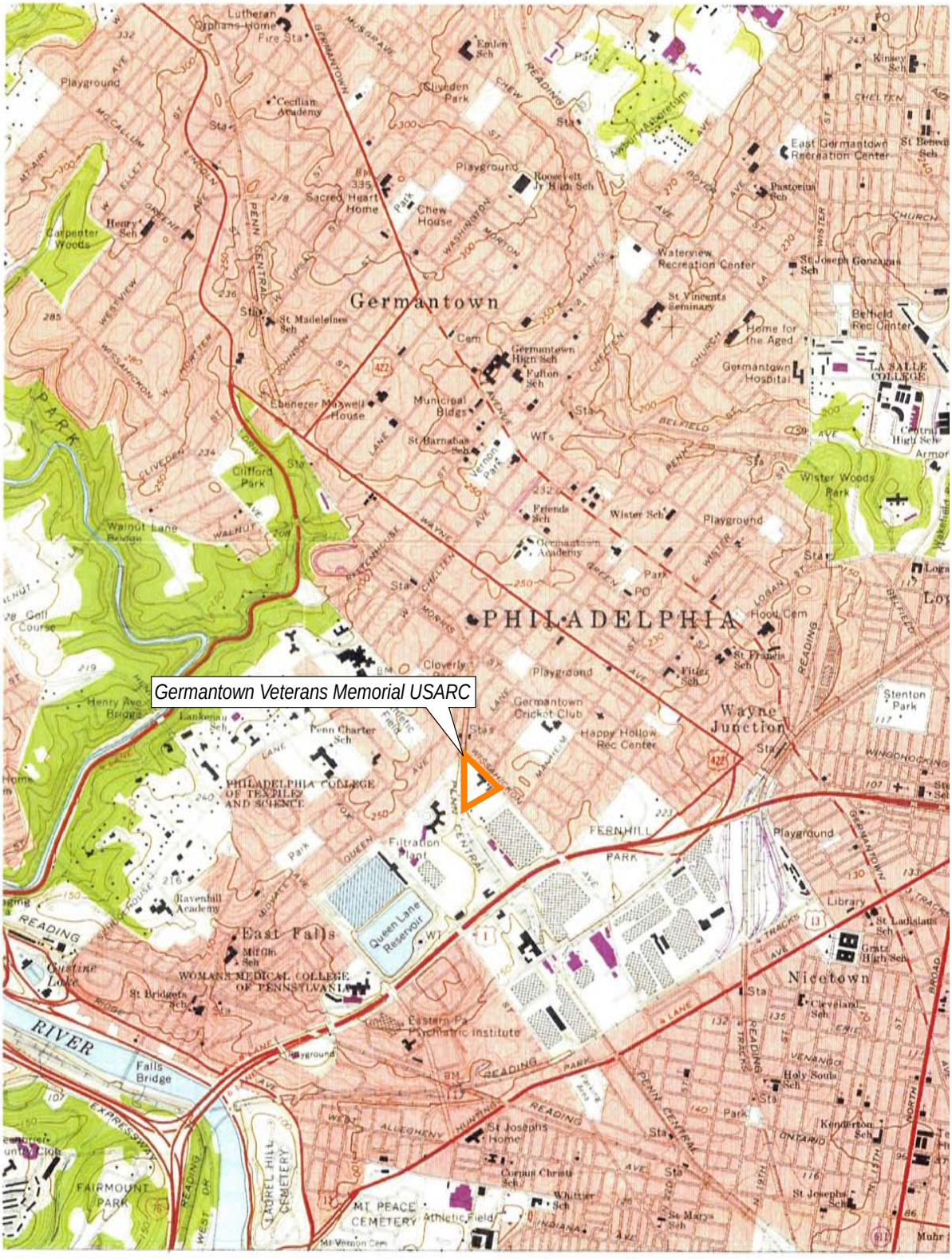
FIGURE 8
1986 Aerial Photograph
Phase I ECP Report

FIGURE 9
1992 Aerial Photograph
Phase I ECP Report

FIGURE 10
Google Earth Image
Phase I ECP Report

CH2MHILL

FIGURE 11
1952 USGS 7.5-Minute
Topographic Map
Phase I ECP Report



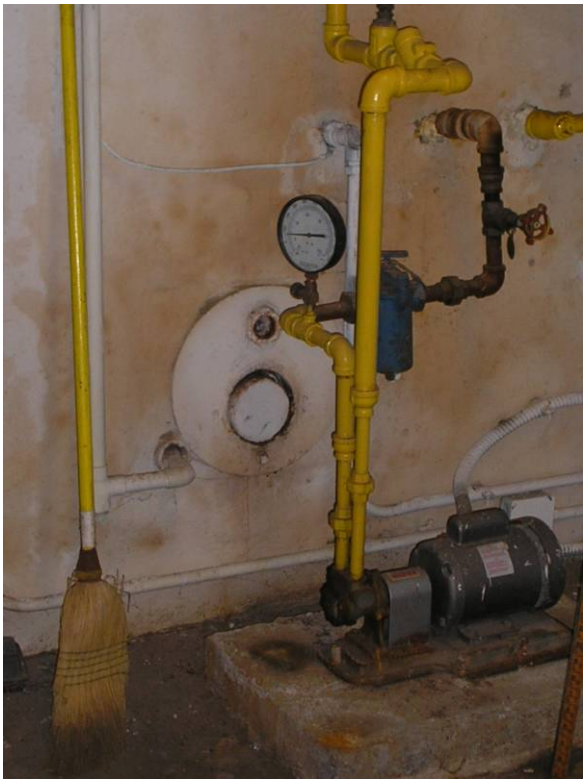
N ^ EDR INQUIRY# 1714247.226 TARGET QUAD: GERMANTOWN PhotoRevised: 1967-1973 Series: 7.5' Scale: 1:24,000

FIGURE 12
1967 USGS 7.5-Minute
Topographic Map
Phase I ECP Report

Appendix B
Site Reconnaissance Photographs

APPENDIX B

Site Reconnaissance Photographs

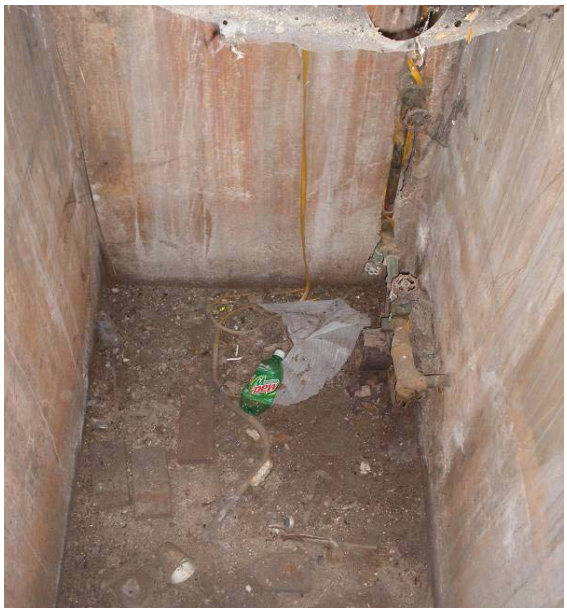


1. Boiler room wall

2. Boiler room wall

3. Chemical storage in the OMS building

4. 55-gallon drum marked "Oil Services, Neville Island" in the OMS building



5. Vault in the OMS building

6. Wash rack

7. Wash rack and POL storage

8. Inside POL storage container

9. Sinkhole in MEP lot

10. Kitchen

Appendix C

Property Acquisition Documents and Chain of Title Report

Appendix D

Previous Environmental Site Assessment Reports

DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5 LOBAUGH STREET
OAKDALE, PA 15071-5001

REPLY TO
ATTENTION OF

AFRC-CPA-EN-FM (200) 17 November 2000

MEMORANDUM FOR Facility Management Specialist, Germantown USAR Center,
5200 Wissahickon Ave, Philadelphia, PA 19144-4095

SUBJECT: Asbestos Inspection and Management Plan

1. John H. Pontier, EPA AHERA Inspector/Management Planner, did an asbestos periodic surveillance ~~inspection~~ of your facility on 6 November 2000.

2. Assessment:

a. Surfacing. None seen.

b. Thermal System Insulation. None seen.

c. Miscellaneous. The 9" x 9" and 12" x 12" asbestos-containing floor tile and mastic is located throughout the facility. It is non-friable and in good condition. Potential for disturbance is minimal under normal circumstances.

3. Implement an Operation and Maintenance (O&M) Program, enclosed. Take measures to prevent the disturbance of the ACM. Do not cut, sand, grind, drill or dry strip the asbestos containing flooring materials.

4. Your Designated Person, Nick Taylor, must ensure all custodial and maintenance workers have awareness training, and building occupants are informed of the location of asbestos containing materials and any inspection and abatement activities. Keep this memorandum in your permanent asbestos files.

5. Our point of contact is John Pontier, (301) 677-5666.

Joseph C. Effinger III

JOSEPH C. EFFINGER, III
Environmental Specialist

Encl:
O&M Program

CF: Facility Coordinator

AHERA PHYSICAL ASSESSMENT DATA FORM

Building: Germantown USAR Center

Functional Space No. 1 Type: Admin Location: 2nd floor

Type of Suspect Material: Surfacing ____ TSI ____ Miscellaneous ✓

Description: 1'x1' floor tile & mastic, second floor

Approximate Amount of Material: _____ ft ☐ ft² ☑

Condition

Percent Damage: None ☐ ≤10% ☑ >10% ☐ ≤25% ☐ >25% ☐

Extent of Damage: Localized ✓ Distributed ____

Type of Damage: Deterioration ____ Water ____ Physical ✓

Description: minor, localized damage around edges

Overall Rating: Significantly Damaged ☐ Damaged ☐ Good ☑

Potential for Disturbance

Frequency of Potential Contact: High ____ Moderate ____ Low ✓

Description: Mastic not exposed, 2% crysotile

Influence of Vibration: High ____ Moderate ____ Low ✓

Description: Mastic under tile; tile < 1% (Trace) crysotile

Potential for Air Erosion: High ____ Moderate ____ Low ✓

Description: Non friable

Overall Rating: Potential for Significant Damage ____
Potential for Damage ____
Low Potential ✓

Comments: Do not sand, drill, dry buff.

Signed: John I Porter Date: 6 Nov 00

AMA Analytical Services, Inc.

Electron & Optical Microscopy Services

CERTIFICATE OF ANALYSIS

NVLAP
NY ELAP
AIHA

Client:	99th Regional Support Command/Cust. Support Team 2	**Job Name:**	Germantown USAR Center	**Chain Of Custody:**	77376
Address:	Building 8543, 6th Armored Cav Road	**Job Location:**	Not Provided	**Date Analyzed:**	11/15/00
	U. S. Army Fort George G. Meade, Maryland 20755-5430	**Job Number:**	PA076-JE1-004Z	**Person Submitting:**	John Pontier
		P.O. Number:	Not Provided		
Attention:	John Pontier				

Summary of Polarized Light Microscopy

AMA Sample Number	Client Sample #	Total Asbestos	Chrysotile Percent	Amosite Percent	Crocidolite Percent	Other Asbestos Percent	Mineral Wool Percent	Fiberglass Percent	Organic Percent	Synthetic Percent	Other Percent	Particulate Percent	Sample Color	Analyst ID	Comments
0106933	1 FT	TR [1]	TR	--	--	--	--	--	TR	--	--	100	Gray	AY	
0106934	2 M	2	2	--	--	--	--	--	TR	--	--	98	Black	AY	

The following footnotes only apply to those samples which the total asbestos result is flagged with a note number.

1 TEM RECOMMENDATION - Please note, due to resolution limitations with optical microscopy and/or interference from matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos. It is recommended that the additional analytical technique of TEM be used to check for asbestos fibers below the resolution limits of optical microscopy.

2 MATRIX REDUCTION RECOMMENDATION - Please note, due to interference from the matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos which is obscured from view. It is recommended that the additional preparation technique of gravimetric reduction be performed on this sample to minimize the obscuring effects of matrix components, followed by reanalysis by PLM and/or TEM.

Analysis Method - EPA/600/R-93/116 dated July 1993

NAD = "No Asbestos Detected" TR = "Trace equals less than 1% of this component"

Young-Sil Hong Yim

AMA Analytical Services, Inc.

AIHA (#8863) NVLAP (#1143) NY ELAP (10920)
4475 Forbes Blvd.• Lanham, MD 20706
(301) 459-2640•(800) 346-0961•Fax (301) 459-2643

CHAIN OF CUSTODY

(Please Refer To This Number For Inquires) 77376

MAILING ADDRESS:

1. Submittal Date: 8 Nov 00 — Job Name/location: Germantown USAR Center
2. Client Name: John Ponter — Job #: — P.O. #: PA076-JE1-0042
3. Street/RFD/P.O. Box: 8543 6th Armored Cav Rd — Bill To: 4716-3000-0014-3256 09/01 Joseph E Ringel
4. City, State, Zip: Ft Meade MD 20755-5430 — Phone #: 301 677 5666 — Fax: 301-677-2402
5. Contact Person: John — Submitted By: John (Print) _____ (Signature)
6. **DATE & TIME RESULTS REQUIRED:** 9 / 15 / 00, Time: 0900 AM PM ☐IMMED. ☐24HR ☐48HR ☐72HR ☑5-DAY OTHER(Specify): _____

SAMPLE DATA:

1. Analysis Type: ☑Asbestos ☐Lead ☐NOB - Whole (PLM/TEM) ☐NOB Res. Ash (TEM) ☐Other(Specify) _____
2. Total Number Of Samples: TEM _____ PCM _____ PLM ✓ LEAD _____ OTHER (Specify) _____
3. ELECTRON MICROSCOPY SAMPLES:
   A. Filter Type: PC☐ MCE☐ **B.** Porosity: _____ Micron **C.** Diameter ☐37mm ☐25mm
4. Release Critera/Analytical Sensitivity: 0.010 f/cc☐ 0.005 f/cc☐ AHERA☐ %ASBESTOS☐ S/FT²☐ OTHER ☐
5. Field Sheet Attached? YES☐ NO☐ If No Then Please Complete The Following:

SAMPLE ANALYSIS INFORMATION					ANALYSIS						MATRIX				
CLIENT ID NUMBER	AMA ID NUMBER	SAMPLE LOCATION	DATE	VOLUME (LITERS)	TEM	PCM	PLM	LEAD	OTHER	AIR	BLANK	BULK	WIPE	OTHER
1 tile, 12"x12"		2nd Floor	8 Nov											
2 mastic		"	"											

REPORTING DATA:

1. Verbal Results To Whom? Name: _____ Phone: _____ Beeper: _____
2. Date Written Results Reqired ___ / ___ / ___

LABORATORY STAFF ONLY: (CUSTODY)

1. Date/Time RCVD: 11 / 8 / 00 @ 0900 Via: DO By (Print) David Workmon Sign: David
2. Date/Time Analyzed: ___ / ___ / ___ @ ___ By (Print) _____ Sign: _____
3. Results Reported To: _____ Via: _____ Date: ___ / ___ / ___ Time: _____ Initials: _____
4. Comments: _____

ASBESTOS MANAGEMENT COMPLIANCE
GERMANTOWN USARC

1. ASBESTOS MANAGEMENT OVERVIEW

Asbestos, a group of natural fiber minerals, has been used primarily for thermal and acoustical purposes. Asbestos becomes a health hazard when it degrades into microscopic fibers causing it to crumble. This crumbled form of asbestos is known as "friable" asbestos. Due to the potential health effects of breathing in friable asbestos, the Army has established a program to manage asbestos on Army installations. The program entails identifying asbestos and abating the areas cited as a health risk.

Below is a list of the primary objectives of the Army's Asbestos Management Program.

- Minimize environmental releases and occupational and incidental exposure;
- Exclude asbestos from procurement and uses where asbestos free substitutes exist;
- Handle, store, transport, and dispose of asbestos in compliance with all applicable regulations;
- Develop and maintain an inventory of all asbestos in Army structures and determine the potential for human exposure;
- In areas known to have asbestos, implement a program to minimize exposure until abatement is accomplished;
- Maintain a non-occupational environment safe from exposure; and
- Execute an Asbestos Management Plan (AMP) in support of Army policy.

2. APPLICABILITY OF REGULATORY REQUIREMENTS

There are several federal agencies charged with regulating asbestos products and wastes. EPA regulations pertaining to asbestos are contained in 40 CFR 61. The OSHA standard, which limits occupational exposure to asbestos, is contained in 29 CFR 1910 and 29 CFR 1926. In addition, EPA has published several guidance documents on asbestos management or abatement. Army Regulation (AR) 200-1, *Environmental Protection and Enhancement*, contains a chapter providing Army regulations for asbestos management. In addition to the

Army regulations and the federal regulations, The Commonwealth of Pennsylvania, Department of Labor and Industry, requires notification regarding asbestos abatement projects. Abatement pertains not only to demolition activities, but also to any type of action that is taken to minimize exposure or release.

Prior to beginning any asbestos abatement project, notice must be provided to the Pennsylvania Department of Labor and Industry at the following address:

Asbestos Notification
PO Box 8468
400 Market Street
Harrisburg, PA 17105-8468

3. RESPONSIBILITIES

The Army is responsible for appropriating adequate resources to identify, manage, and control exposure to asbestos, prohibiting the introduction of asbestos into the workplace, providing personal protective equipment, and other requirements associated with the implementation of a nationwide asbestos management program. It is the responsibility of the Installation Commander to:

- Establish an Installation Asbestos Management Team to prepare and execute the Installation AMP;
- Perform and update asbestos surveys to determine the location, extent, and condition of all asbestos;
- Complete an initial asbestos survey, performed by accredited personnel, by 23 May 1991 per Army Regulation 200-1;
- Annotate master planning documents and drawings to indicate real property containing asbestos;
- Notify 79th ARCOM whenever a notice of violation (NOV) is received;
- Prepare and implement an Operation and Maintenance (O&M) Plan that minimizes and monitors asbestos exposure in areas where potential asbestos exposure exists;

- Develop an environmental impact analysis of the installation asbestos management plan as required by Army Regulation 200-2; and

- Provide worker education and training programs for individuals that are identified to work with asbestos.

4. COMPLIANCE STATUS SUMMARY

ECAAR Status:	There are no Class I, II and III findings.
Surveys:	Asbestos survey performed by Biospherics Incorporated. The findings indicated that the asbestos was in moderate to high concentrations in the boiler room, assembly room and general building space. The concentration vary from low to moderate in the second floor and general building space.
Recordkeeping:	Data was unavailable.
Plan contents:	Data was unavailable.
Documented accredited inspector:	Data was unavailable.

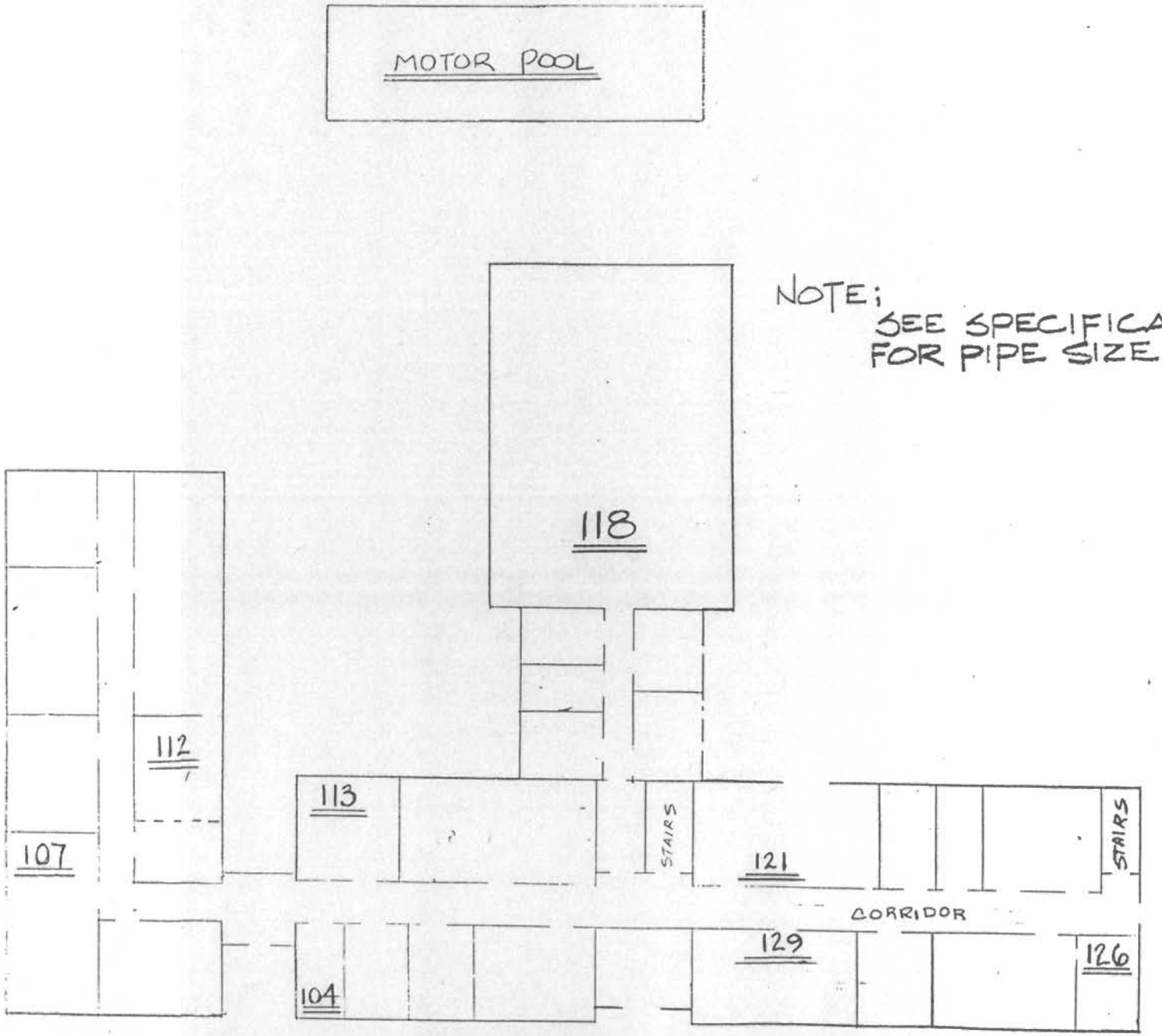
All asbestos has been removed from the Germantown USARC.

1992

APPENDIX B - Location of Asbestos Containing Material (ACM) at Germantown USARC

Room #	Item To Be Removed	Size	Height Above Finished Floor	Asbestos Type	Content Volume %
BOILER ROOM #121	Grey, air cell Insulation on return lines White/grey, fibrous pipe elbow lagging on return lines	Pipe between 1" & 3" dia. 225 L.F.	12" to 32"	Chrysotile Chrysotile Amosite	15-20% 20-25% 1-2%
BOILER ROOM #121	White/grey fibrous hot water tank insulation	4′ dia. x 7′ long	7′ to 11′	Chrysotile Amosite	20-25% 1-2%
BOILER ROOM #121	Grey, powdery over white fibrous block exhaust flue insulation	30"x 30"x 15′-6"	6′ to 9′	Chrysotile Amosite	10-15% 2-5%
BOILER ROOM #121	White air cell insulation on heating exhaust unit	1′ dia. x 5′-6"	5′	Chrysotile	35-40%
BOILER ROOM #121	Grey air cell insulation Grey air cell insulation	Horizontal pipe between 1 1/2" to 10" dia. 150 L.F. 14" dia x 12′ long	8′ to 14′-6" 9′-6"	Chrysotile Chrysotile	15-20% 15-[illegible]
BOILER ROOM #121	Grey, air cell insulation	Vertical pipe between 1 1/2" to 10" diameter 150 L.F.	1′ to 14′-6"	Chrysotile	15-20%
DAY ROOM #129	Grey, fibrous insulation on pipe elbow	3" dia. x 9′ long	8′-6"	Chrysotile	35-40%
LIBRARY #104	Grey, air cell insulation, straight section	Vertical 3" dia. x 9′-1"		Chrysotile	10-15%

Room #	Item To Be Removed	Size	Height Above Finished Floor	Asbestos Type	Content Volume %
UNIT STORAGE #107	Grey air cell insulation	Vertical 3" dia. x 8'-0"		Chrysotile	15-20%
UNIT STORAGE #113	Grey air cell insulation	Vertical 3" dia. x 9'-1"		Chrysotile	15-20%
UNIT STORAGE #112	Grey air cell insulation	Vertical 3" dia. x 9'-1" 52 L.F.		Chrysotile	15-20%
ASSEMBLY HALL #118	Grey, powdery pipe elbow lagging	Horizontal & vertical pipe between 2" to 4" dia 210 L.F.	8' to 20'	Chrysotile	40-45%
RIFLE RANGE #213	Grey/white, course woven flexible duct fabric	42" x 10" x 6" 14" x 27" x 6"	8'-0"	Chrysotile	40-45%
JANITORS CLOSET #215	White air cell pipe insulation straight section	Horizontal pipe 3" dia. 15 L.F.	6'-0"	Chrysotile	40-45%
	White air cell pipe insulation straight section	Vertical pipe 3" dia. 7 L.F.		Chrysotile	40-45%
OFFICE #126	White air cell pipe insulation straight section	3" diameter 33 L.F.	8'-6"	Chrysotile	40-45%
MOTOR POOL	White air cell pipe insulation straight section	Horizontal & vertical pipe between 1" to 4" diameter 300 L.F.	Floor level to 20'	Chrysotile	40-45%



USARC. GERMANTOWN

FIRST FLOOR PLAN

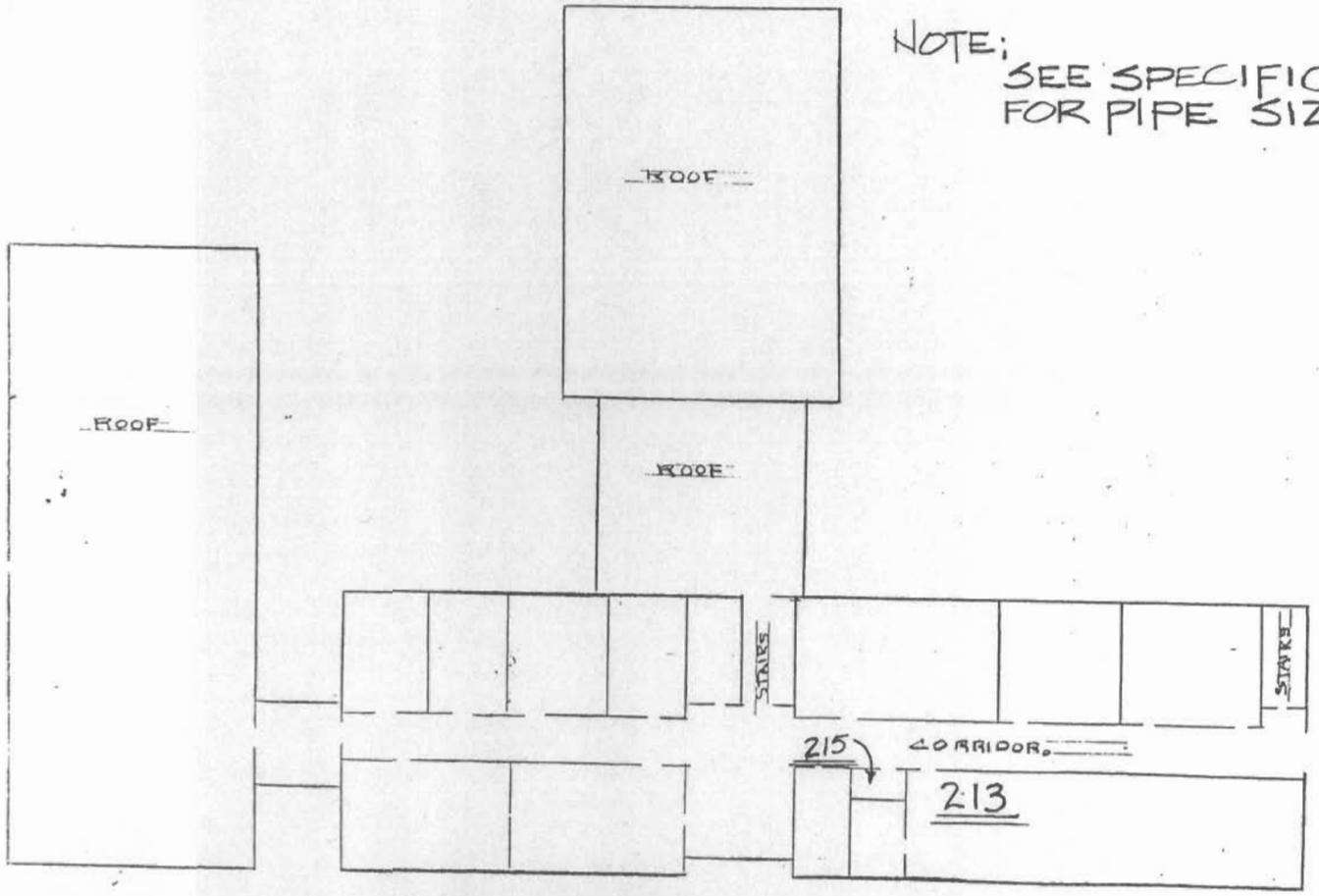
5200 WISSAHICKON AVE. PHILA PA.

APPENDIX 'C'

SHEET 1 OF 2

#9203

NOTE;
SEE SPECIFICATION
FOR PIPE SIZE & LENGTH



USARC. GERMANTOWN
SECOND FLOOR PLAN
5200 WISSAHICKON AVE PHILA, PA.

APPENDIX 'C'

SHEET 2 OF 2

#9203

+ To Program 1383
Can bill go to BCA if necessary
Pete
7/16/92

HSXR-CEK-IH

11 May 92

MEMORANDUM FOR Headquarters, 157th Separate Infantry Brigade (Mech), Attn: MAJ Pominville

SUBJECT: Testing Floor Tiles for Asbestos

1. Sample results have been recieved for the facilities of the 157th and are as follows:

Sample #	Facility/tile type	Results
IH 2192	Bristol/black adhesive mastic	5-10% chrysotile
IH 2292	Bristol/white-grey tile	1-3% chrysotile
IH 2392	Bristol/white-grey tile	1-3% chrysotile
IH 2492	Bristol/white-grey tile	1-3% chrysotile
IH 2592	Chambersburg/black tile	3-5% chrysotile
IH 2692	Chambersburg/grey tile & mastic	3-5% chrysotile
IH 2792	FTIG/green tile,sample "a"	3-5% chrysotile
IH 2892	FTIG/white-grey, sample "b"	1-3% chrysotile
IH 2992	Horsham/white tile room 103	1-3% chrysotile
IH 3092	Horsham/white tile room 111	no asbestos detected
IH 3192	Horsham/grey tile room 203	1-3% chrysotile
IH 3292	Horsham/grey tile room 211	1-3% chrysotile
IH 3392	Horsham/black tile hallway	3-5% chrysotile
IH 3492	Lockhaven/gray/white floor tile	no asbestos detect.
IH 4492	Edgemont/gray/black floor tile	3-5% chrysotile
IH 4592	Edgemont/gray/black floor tile	3-5% chrysotile
IH 4692	Phila-Wissahickon/brown floor tile	5-10% chrysotile

2. A copy of EPA's Managing Asbestos in Place (the green book) is being forwarded to assist you. I recommend all the facility managers for each Reserve Center order a free copy of this publication by contacting the TSCA Hotline at (202) 554-1404. Also, managers will need to refer to TB MED 513, the Army's Non-Occupational Exposure Policy for further guidance on managing asbestos in their buildings.

3. Please contact me for further questions at (717) 245-4655 or AV 242-4655.

Nina J. Gauthier

ENCL

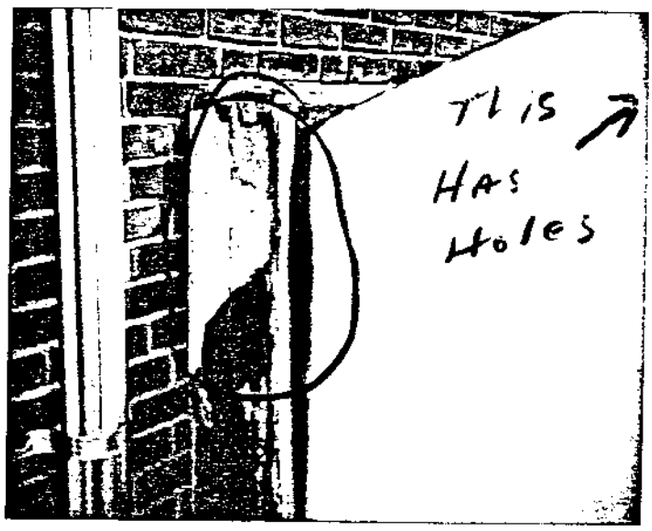
NINA J. GAUTHIER
Industrial Hygiene Office
Carlisle Barracks, PA

CF:
DEH, Ft. Indiantown Gap
Safety Manager, Ft. Indiantown Gap

AMPLE LOG - SUSPECT ACM

Germantown USARC

SAMPLE #	BLDG	LOCATION	DISCRIPTION	RESULTS
ΦΦ1 (WR-2275-01)	USAR CENTER	Exterior of bldg, at penetration of the wall by the breeching. This is an exterior surface coat see Photo	Hard but still friable surface coat. Fiberous light gray in color appears to be loosing its binding agent.	
ΦΦ2 (WR-2275-02)	USAR center	Exterior of bldg at penetration of the wall, by the breeching. This material is located between the wall and the breeching Exterior surface is covered with a different material (See WR-2275-01) see Photo	Friable, light gray-to-white material where not discolored.	



Breeching 9-30-92
ASBESTOS ?

SECTION 2.15

2.15.1 U.S. ARMY RESERVE CENTER, GERMANTOWN, FIRST FLOOR

NON-ASBESTOS-CONTAINING MATERIALS SAMPLED:

1. Yellow fiberglass pipe insulation straight section

ASBESTOS-CONTAINING MATERIALS SAMPLED/OBSERVED:

1. Grey, air-cell pipe insulation straight section
2. Troweled-on pipe fitting lagging
3. White/grey hot water storage tank insulation
4. Boiler exhaust flue insulation
5. Vinyl 9" x 9" floor tiles
6. Flexible duct joint material
7. Two-coat ceiling plaster

FUNCTIONAL AREAS

A. Boiler Room (drawing ref: AS-BLT 29-06-40 SH. 31)

- ACM TSI - Troweled ACM insulations are on pipe fittings, boiler exhaust flue and hot water storage tank. Air cell insulation is on pipe straight sections and a heat exchange unit. All non-fiberglass insulations should be considered ACM. Quantity of fittings and linear footage of pipe straights is shown on floor plans.

Hazard Assessment
Rating II - Moderate to High

B. Assembly Room

- ACM TSI - white air-cell pipe insulation straight sections are on circulating system lines. These pipes have troweled-on ACM pipe fitting laggings.

- Flexible cloth duct joint material, are observed as ACM.

Hazard Assessment
Rating II - Moderate to High

C. General Building Space (All other rooms and corridors; drawing ref: AS-BLT 29-06-40 SH. 31)

- o ACM TSI - troweled-on pipe fitting laggings and insulated straight sections are in room space as noted on building drawings.
- o Vinyl 9" x 9" floor tiles are located as noted on floor plans.
- o Two-coat ceiling and wall plaster noted in floor plans should be considered ACM until further sampling.

Hazard Assessment
Rating II - Moderate to High

BIOSPHERICS® INCORPORATED

TABLE 2.15.1

Results of Bulk Asbestos Analyses of Samples Collected for EHSC and Fort Indiantown Gap, PA from U.S. Army Reserve Center at Germantown, Pennsylvania (First Floor)

BIOS #	DATE SAMPLED	LOCATION/DESCRIPTION	ASBESTOS TYPE	CONTENT (VOLUME %)
87-11-352-132	11/18/87	Grey, air-cell insulation on low pressure return line; boiler room	Chrysotile	15-20%
87-11-352-133	11/18/87	White/grey, fibrous pipe elbow lagging on low pressure return line; boiler room	Chrysotile Amosite	20-25% 1-2%
87-11-352-134	11/18/87	White and grey, fibrous hot water tank insulation; boiler room	Chrysotile Amosite	20-25% 1-2%
87-11-352-135	11/18/87	Grey, powdery over white, fibrous block, boiler exhaust flue insulation; boiler room	Chrysotile Amosite	10-15% 2-5%
87-11-352-136	11/18/87	White, air-cell insulation on HEU; boiler room	Chrysotile	35-40%
87-11-352-137	11/18/87	Beige with brown mottle vinyl floor tile; room 122	NAFD*	---
87-11-352-138	11/18/87	Yellow pipe insulation straight section; day room	NAFD*	---
87-11-352-139	11/18/87	Grey, fibrous insulation on pipe elbow lagging; day room	Chrysotile	35-40%
87-11-352-140	11/18/87	9" x 9", brown with dark brown mottle floor tile; men's room	Chrysotile	2-5%

*NAFD -- No Asbestos Fibers Detected

3484F

BIOSPHERICS® INCORPORATED

TABLE 2.15.1

Results of Bulk Asbestos Analyses of Samples Collected for EHSC and Fort Indiantown Gap, PA from U.S. Army Reserve Center at Germantown, Pennsylvania (First Floor), continued

BIOS #	DATE SAMPLED	LOCATION/DESCRIPTION	ASBESTOS TYPE	CONTENT (VOLUME %)
87-11-352-141	11/18/87	Two coat plaster ceiling; men's room	NAFD*	---
87-11-352-142	11/18/87	Grey, air-cell pipe insulation straight section; library	Chrysotile	10-15%
87-11-352-143	11/18/87	Grey, powdery pipe elbow lagging on steam line; assembly room	Chrysotile	40-45%
87-11-352-144	11/18/87	9" x 9", brown, vinyl floor tile; ladies room entrance	Chrysotile	1-2%

*NAFD -- No Asbestos Fibers Detected

3484F

2.15.2 U.S. ARMY RESERVE CENTER, GERMANTOWN, SECOND FLOOR

NON-ASBESTOS CONTAINING MATERIALS SAMPLED:

1. 12" x 12", vinyl floor tiles.
2. Fibrous, acoustical wall insulation.

ASBESTOS-CONTAINING MATERIALS SAMPLED/OBSERVED:

1. Flexible duct joint fabric material.
2. White, air-cell pipe insulation, straight section.
3. 9" x 9", vinyl floor tiles.
4. Troweled-on pipe fitting lagging.
5. Two-coat plaster.

FUNCTIONAL AREAS

A. General Building Space (Entire second floor; drawing ref: AS-BLT 29-06-40 SH. 32)

- o ACM TSI - white, air-cell type pipe insulation, straight section is on piping in janitors closet. Piping has troweled-on ACM pipe fitting laggings.
- o Flexible cloth duct joint is located in the rifle range room.
- o Vinyl, 9" x 9" floor tiles are located in room areas as noted on building drawings.
- o Plaster ceilings and walls as shown on floor plans should be treated as ACM in absence of further sampling.

Hazard Assessment
Rating III - Low to Moderate

BIOSPHERICS® INCORPORATED

TABLE 2.15.2

Results of Bulk Asbestos Analyses of Samples Collected for EHSC and Fort Indiantown Gap, PA from U.S. Army Reserve Center at Germantown, Pennsylvania (Second Floor)

BIOS #	DATE SAMPLED	LOCATION/DESCRIPTION	ASBESTOS TYPE	CONTENT (VOLUME %)
7-11-352-145	11/18/87	12" x 12", white with brown mottled floor tile; corridor lobby	NAFD*	---
87-11-352-146	11/18/87	Thick, fibrous, acoustic wall insulation; rifle range room	NAFD*	---
87-11-352-147	11/18/87	Grey/white, coarse, woven flexible duct fabric; rifle range room	Chrysotile	40-45%
87-11-352-148	11/18/87	White, air-cell pipe insulation straight section; janitors closet	Chrysotile	40-45%

*NAFD -- No Asbestos Fibers Detected

FACSIMILE TRANSMITTAL HEADER SHEET

For use of this form, see AR 25-11; the proponent agency is ODISCA

COMMAND/ OFFICE	NAME/ OFFICE SYMBOL	OFFICE TELEPHONE NO. (AUTOVON/Comm.)	FAX NO. (AUTOVON/Comm.)
FROM: CUSTOMER SUPPORT TEAM # 2 AREA # 4	Facility Mgmt Specialist Mr.Nick Taylor	(610) 584-0536	(610) 584-1178
TO: CST # 2	Mr. Don Newman CPT David Bolduc Mr. Joe Effinger Mr. John Pontier	(301) 677 -5666/5667	(301) 677-2400

CLASSIFICATION	PRECEDENCE	NO. PAGES (Including this Header)	DATE-TIME	MONTH	YEAR	RELEASER'S SIGNATURE
UNCLASS	R	3	14 1023	MAR	01	

REMARKS Dave --- Here are the other two work orders that we spoke of: the floor tile project and the sink hole repair project.

NICK

Space Below For Communications Center Use Only

DA FORM 3918-R, JUL 90 — DA FORM 3918-R, AUG 72 IS OBSOLETE — USAPPC V3.00

USAR FACILITIES SUPPORT REQUEST

PART A (To be completed by requestor)

REQUESTOR ID CODE	REQUEST SERIAL NUMBER	FY	TYPE	SHORT DESCRIPTION OF REQUIREMENT (PRINT)	DATE INITIATED YR	MO	DA
XS0	14NT1	1	P	Repair Sink Holes in POV and MEP lots	00	10	05

FACILITY ID CODE	BUILDING/FACILITY NUMBERS 1	2	3	4	5	6	7	8	9	10
PA076										

FACILITY NAME	POC NAME	POC PHONE NUMBER
Germantown USAR Center	Nicholas M. Taylor	6105840536

DESCRIPTION OF REQUIREMENT:
Repair two sink holes, one in POV parking lot, one in Motor Pool/MEP lot

JUSTIFICATION FOR REQUIREMENT:
The eroding and broken paved surface is creating a grave safety concern for personnel and equipment. Repair is a necessity in order to correct a continuing unsafe condition.

NICHOLAS M. TAYLOR — AUTHORIZED REQUESTOR: (Type or Print)
610-584-0536 — Phone
SIGNATURE

PART B (To be completed by Regional Engineer Approving Official Only)

APPROVAL ACTION CODE: ☐
REQUIREMENT TYPE: ☐☐☐☐
APPROPRIATION: ☐☐☐☐☐
PROGRAM INDICATOR CODE: ☐☐
SPECIAL INTEREST CODE: ☐☐☐☐☐☐
DATE OF APPROVAL: YR ☐☐ MO ☐☐ DA ☐☐

REMARKS:

ENVIRONMENTAL IMPACT

YES	NO	
☐	☐	ENVIRONMENTAL CONSIDERATION
☐	☐	EIS/EIA INITIATED
☐	☐	EIS/EIA COMPLETED

WORK TO BE PERFORMED

☐ DPW
☐ SELF HELP
☐ CONTRACT
☐ TROOP
☐ OTHER
COMMENTS:

WORK CLASS (AMSCO) / ESTIMATED COSTS

	Funded	Unfunded
K	$	$ 200,000.00
☐	$	$
☐	$	$
☐	$	$
Total:	$	$ 200,000.00

SOURCE OF FUNDS

☐ DIRECT
☐ AUTOMATIC REIMBURSEMENT
☐ FUNDED REIMBURSEMENT

OTHER FUND CITATION

APPROVAL FOR DESIGN	DATE YR	MO	DA	PROJECT APPROVAL AUTHORITY	APPROVAL ACTION	DATE YR	MO	DA
(Please type or print name)				(Please type or print name)	☐ APPROVED			
(Signature)				(Signature)	☐ DISAPPROVED			

FORM 4283

Date of Printing : 1999/02/17

USAR FACILITIES SUPPORT REQUEST

PART A (To be completed by requestor)

REQUESTOR ID CODE	REQUEST SERIAL NUMBER	FY	TYPE	SHORT DESCRIPTION OF REQUIREMENT (PRINT)	DATE INITIATED YR	MO	DA
XS0	001196	P		REPAIR/REPLACE FLOOR TILE	96	04	05

FACILITY ID CODE	BUILDING/FACILITY NUMBERS 1	2	3	4	5	6	7	8	9	10
PA076										

FACILITY NAME	POC NAME	POC PHONE NUMBER
GERMANTOWN USARC	NICK TAYLOR	6105840536

DESCRIPTION OF REQUIREMENT:

REPLACE FLOOR TILE THROUGHOUT THIS BUILDING SOME ROOMS IN THIS BUILDING ARE EXTREMLY SAD CONDITION.

JUSTIFICATION FOR REQUIREMENT:

REPLACE FLOOR TILE THAT ARE EXTREMELY POOR CONDITION.

NICK TAYLOR — AUTHORIZED REQUESTOR: (Type or Print)

6105840536 — Phone

SIGNATURE

PART B

(To be completed by Regional Engineer Approving Official Only)

APPROVAL ACTION CODE: W

REQUIREMENT TYPE: BMAR

APPROPRIATION: OMAR

PROGRAM INDICATOR CODE: X

SPECIAL INTEREST CODE: FLOR

DATE OF APPROVAL: YR | MO | DA

REMARKS:

ENVIRONMENTAL IMPACT

YES	NO	
☐	☐	ENVIRONMENTAL CONSIDERATION
☐	☐	EIS/EIA INITIATED
☐	☐	EIS/EIA COMPLETED

WORK TO BE PERFORMED

☐ DPW
☐ SELF HELP
☐ CONTRACT
☐ TROOP
☐ OTHER

COMMENTS:

WORK CLASS (AMSCO) / ESTIMATED COSTS

	Funded	Unfunded
X	$	$55,000
	$	$
	$	$
	$	$
Total:	$	$55,000

SOURCE OF FUNDS

☐ DIRECT
☐ AUTOMATIC REIMBURSEMENT
☐ FUNDED REIMBURSEMENT

OTHER FUND CITATION

APPROVAL FOR DESIGN	DATE YR	MO	DA	PROJECT APPROVAL AUTHORITY	APPROVAL ACTION	DATE YR	MO	DA
(Please type or print name)				(Please type or print name)	☐ APPROVED			
(Signature)				(Signature)	☐ DISAPPROVED			

FORM 4283

Date of Printing : 2000/06/19

99TH RSC
CST 1
FUEL DATA INVENTORY
10/25/96

CST	R/ID	FACID	FACILITY - LOCATION	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
1	7C	PA003	CPL H.R. HARR USARC	NG				
			ALTOONA, PA					
1	U8	PA004	SABALIS USARC	DF2	10,000	UST	USARC	FT DIX DOL
			ASHLEY, PA	DF2	1000			
			8/1/96 THRU 7/31/99					
1	VN	PA007	BECK AFRC	NG				
			BELLEFONTE, PA					
1	VJ	PA008	WILSON-KRAMER USARC	NG				
			BETHELEHEM, PA	DF2	1000	AST	BACKUP	
			don't use backup - waiting for removal					
1	VA	PA009	BLOOMSBURG USARC	NG				
			BLOOMSBURG, PA	DF2	1500	UST	USARC	
			DF2 tanks no longer in use - both full	DF2	500	UST	MAINT	
1	XL	PA010	BRISTOL USARC	NG				
			BRISTOL, PA	DF2	1000	AST	BACKUP	
			DF2 tank no longer in use					
1	7E	PA011	BROOKVILLE USARC	NG				
			BROOKVILLE, PA					
1	U9	PA014	PARKER USARC	NG				
			CHAMBERSBURG, PA					
1	7L	PA017	PFC M.L. BROWN USARC	NG				
			CLEARFILED, PA					
1	7N	PA020	BLOMMEN-RUSSELL USARC	NG				
			DUBOIS, PA					
1	XG	PA021	AMSA #31 (G)	SEE PA022				FT DIX DOL
			EDGEMONT, PA					
1	XE	PA022	EDGEMONT USARC	DF2	500	AST	PUMP HOU	FT DIX DOL
			EDGEMONT, PA	DF2	5000	UST	2MNT BLD	
			8/1/96 THRU 7/31/99	DF2	12000	UST	USARC	
1	UR	PA029	GAHRES USARC					ISA
			FIG, PA					
1	2B	PA030	1079 GARRISON USARC					ISA
			FIG, PA					
1	UP	PA031	ECS #24	DF2	2500	AST	BLD 1083	ISA
			FIG, PA	DF2	1000	AST	BLD 16149	
				DF2	2 X 175	AST	BLD 15150	
				DF2	2 X 500	AST	BLD 1064	
1	U1	PA032	RTS-MT					ISA
			FIG, PA					
1	US	PA034	FIG USARC	DF2				ISA
			FIG, PA					
1	WG	PA039	ADAMS CTY MEM USARC	NG				
			GETYTYSBURG, PA					
1	WF	PA040	AMSA #113 (G)	DF2 SEE PA041				FT DIX DOL

99TH RSC
CST 1
FUEL DATA INVENTORY
10/25/96

CST	R/ID	FACID	FACILITY - LOCATION	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
			GREENCASTLE, PA					
1	WE	PA041	GREENCASTLE USARC	DF2	10000	UST	MAINT SH	FT DIX DOL
			GREENCASTLE, PA					
			8/1/96 THRU 7/31/99					
1	YA	PA044	HARRISBURG AFRC	NG				
			HARRISBURG, PA					
1	BC	PA045	BABYLON CAMPUS USARC	VACATING LEASE 97				
			HORSHAM, PA					
1	XJ	PA046	HORSHAM MEM USARC	NG			USARC	99th
			HORSHAM, PA	DF2	2000	UST	MAINT SHP	99TH
1	7X	PA050	INDIANA CTY MEM USARC	NG				
			INDIANA, PA					
1	YC	PA056	LANCASTER USARC	NG				
			LANCASTER, PA	DF2	1000		OMS	
			DF2 tank no longer in use					
1	VB	PA058	LEWISBURG USARC	DF2	1000			99th
			LEWISBURG, PA	DF2	275			
				DF2	275			
1	WB	PA059	MIFFLIN CTY USARC	NG				
			LEWISTOWN, PA					
1	VL	PA060	LOCK HAVEN USARC	NG				
			LOCK HAVEN, PA					
1	XN	PA068	MUSSELMAN MEM USARC	NG				
			NORRISTOWN, PA					
1	XP	PA074	PHILA MEM AFRC	NG				
			PHILADELPHIA, PA					
1	XS	PA076	GERMANTOWN USARC	NG				
			PHILADELPHIA, PA	DF2	2500	AST	BACKUP	99TH
1	8E	PA080	MAJ C.D. STOOPS USARC	NG				
			PUNXSUTAWNEY, PA					
1	93	PA081	AMSA #106 (G)	NG				
			PUNXSUTAWNEY, PA					
1	YB	PA086	READING USARC	NG				
			READING, PA					
1	8G	PA087	ELKS CTY MEM USARC	NG				
			ST MARY'S, PA					
1	U2	PA088	ROEDER USARC	NG				
			SCHUYLKILLHAVEN, PA					
1	U6	PA089	SERRENTI MEM USARC	NG				
			SCRANTON, PA					
1	VC	PA090	CENTRE CTY MEM USARC	DF2	4000			FT DIX DOL
			STATE COLLEGE, PA	DF2	2000			FT DIX DOL
			8/1/96 THRU 7/31/99					

99TH RSC
CST 1
FUEL DATA INVENTORY
10/25/96

CST	R/ID	FACID	FACILITY - LOCATION	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
1	TL	PA094	MONROE CTY MEM USARC	DF2				ISA
			TOBYHANNA, PA					
1	U3	PA097	LENKALIS USARC	NG				
			WEST HAZELTON, PA					
1	U4	PA099	WILKES-BARRE USARC	NG				
			WILKES-BARRE, PA					
1	WN	PA107	NEW CUMBERLAND USARC	NG				ISA
			NEW CUMBERLAND, PA					
1	WA	PA135	YORK MEM USARC	NG				
			YORK, PA					
1	XA1	PA137	WURTS MEM USARC	NG				NAVY ISA
			WILLOW GROVE, PA					
1	XA2	PA138	AMSA #23 (G)	NG				NAVY ISA
			WILLOW GROVE, PA					
1	XC	PA139	N. PENN USARC	NG				
			WORCESTER, PA					
1	XB	PA143	ASF #28	NG				NAVY ISA
			WILLOWGROVE, PA					
1	YG	PA147	AMSA #29 (G)	NG				ISA - NAVY
			READING, PA					
1	VJ	PA148	LYCOMING USARC	NG				ISA - NAVY
			WILLIAMSPORT, PA					
1	U5	PA152	AMSA #32 (G)	NG				
			WILKES-BARRE, PA					

CST 2
FUEL DATA INVENTORY
10/25/96

CST	R/ID	FACID	FACILITY NAME	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
2	4H	DE001	FLEMING-GODWIN USARC	DF2	1000	UST	MAINT	99TH
			DOVER, DE	DF2	3000	UST	USARC	
2	4C	DE002	CP HENLOPEN USARC	DF2	4000	UST	USARC	99TH
			LEWES, DE					
2	4M	DE005	KIRKWOOD MEM USARC	DF2	5000	AST	MAINT	99TH
			WILMINGTON, DE	NG				
2	4A	MD001	ANNAPOLIS USARC	DF2	1000	UST	MAP DEP	99TH
			ANNAPOLIS, MD	DF2	550	UST	ADMIN	
				DF2	550	AST	BLD 100	
2	4F	MD002	BRANDT USARC	NG				
			BALTIMORE MD					
2	4T	MD003	SHERIDAN USARC	NG				
			BALTIMORE, MD					
2	4Y	MD004	TURNER USARC	DF2	6000	UST	USARC	99TH
			BALTIMORE, MD					
2	4L	MD005	JECELIN USARC	NG	NA		ALL	
			BALTIMORE, MD	DF2	6000	UST	SPARE	99TH
			tank full - not used - waiting removal					
2	IA	MD006	ALLEGHENY CTY USARC	NG	NA		ALL	
			CUMBERLAND, MD					
2	TRA	MD007	FT MEADE USARC #1	NG				ISA - FT MEADE
			FT MEADE, MD					
2	TRB	MD008	DEKALB MEM USARC	NG				ISA - FT MEADE
			FT MEADE, MD	DF2				
2	TRC	MD009	FT MEADE USARC #3	NG				ISA - FT MEADE
			FT MEADE, MD					
2	TRD	MD010	ASF 85 (TIPTON ARMY AIRFLD					ISA - FT MEADE
			FT MEADE, MD					
2	TRE	MD011	ECS/AMSA #86 (G)	NG				ISA - FT MEADE
			FT MEADE, MD					
2	GC	MD012	FLAIR USARC	NG				
			FREDERICK, MD					
2	4Q	MD013	HUNTON USARC	NG				
			GAITHERSBURG, MD					
2	JA	MD015	TAGG-ZIRKLE USARC	NG				
			HAGERSTOWN, MD					
2	4W	MD016	SO MD MEM USARC	NG				
			MEADOWS, MD					
2	4K	MD019	JACHMAN USARC	NG				
			OWINGS MILLS, MD					
2	4R	MD020	P.G. COUNTY MEM USARC	NG				
			RIVERDALE, MD					
2	4P	MD021	MAUS WARFIELD USARC	NG				99TH

CST 2
FUEL DATA INVENTORY
10/25/96

CST	R/D	FACID	FACILITY NAME	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
			ROCKVILLE, MD	DF2	7500		BLD 1251	
			tank has approx 1000 gals - not in use					
2	KA	MD023	CARROLL CTY MEM USARC	NG				
			WESTMINISTER, MD					
2	4Z	MD024	AMSA #83 (M) CURTIS BAY	DF2	1000	AST	SHOPS	GSA
			BALTIMORE, MD	DF2	1000	AST	SHOPS	
2	TR	MD032	FT MEADE USARC #2					FT MEADE ISA
			FT MEADE, MD					
2	XX	PA015	REESE USARC	NG				
			CHESTER, PA					
2	XV	PA061	AMSA #84 (M)	NG				
			MARCUS HOOK, PA					
2	M5	VA002	LIEBER USARC	NG				99TH
			ALEXANDRIA, VA					
2	M2	VA011	CULPEPPER MEM USARC	NG				BELVOIR ISA
			CULPEPPER, VA					
2	M7	VA017	FT BELVOIR USARC #3					BELVOIR ISA
			FT BELVOIR, VA					
2	M9	VA018	FT BELVOIR USARC #2					BELVOIR ISA
			FT BELVOIR, VA					
2	M6	VA019	AMSA #91 (G/M)	DF2				BELVOIR ISA
			FT BELVOIR, VA					
2	M3	VA020	J.S. MOSBY USARC	NG				BELVOIR ISA
			FT BELVOIR, VA					
2	4E	VA052	CROPPER MEM USARC	DF2	500	UST		99TH
			WALLOPS ISLAND, VA	DF2	2000	UST		
			unit deactivated-minimal fuel only	LP				
2	NA	WV026	MARTINSBURG USARC	NG				
			MARTINSBURG, WV					
2	OA	WV038	ROMNEY USARC	DF2	6000	UST	USARC	99TH
			ROMNEY, WV	DF2	2000	UST	MAIINT	
				LP	500	AST	KITCHEN	

CST 3
FUEL DATA INVENTORY
10/25/96

CST	R/ID	FACID	FACILITY - LOCATION	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
3	3F	VA001	ABINGDON MEM USARC	NG				
			ABINGDON, VA					
3	3E	VA006	PEREGORY USARC	NG				
			CHARLOTTESVILLE, VA					
3	3U	VA007	AMSA #90 (G)	LEASED FACILITY				
			RICHMOND, VA					
3	3T	VA008	AMSA #89 (G) [GALAX, VA]	SEE VA033				
			CHRISTIANSBURG, VA					
3	ZE	VA009	SHEA USARC	DF2	2100	UST	USARC	FT EUSTIS MIPR
			SUFFOLK, VA					
3	3G	VA010	FRIDLEY USARC	NG				
			COVINGTON, VA					
3	3W	VA012	NEW RIVER VALLEY USARC	DF2	6000	UST		FT MEADE DOL
			DUBLIN, VA					
			DLA CONTRACT/FT MEADE DOL/DENNIS TAYLOR					
3	FL1	VA014	FT A.P. HILL USARC #1	N/A				
			FT AP HILL, VA					
3	FL2	VA015	FT A.P. HILL USARC #2	ELECTRIC				AP HILL ISA
			FT AP HILL, VA					
3	AR1	VA022	FT EUSTIS USARC	NG				FT EUSTIS ISA
			FT EUSTIS, VA					
3	AR2	VA023	ASF 92	NG				FT EUSTIS ISA
			FT EUSTIS, VA					
3	AR3	VA024	ECS/AMSA #93					
			FT EUSIS, VA	DF2	500		BLD 2504	FT EUSTIS ISA
							NG	
3	L2	VA025	GEN L.T. GEROW USARC	NG				FT LEE ISA
			FT LEE, VA					
3	3X	VA028	ECS/AMSA #88	ELECTRIC			BLD 561	PICKETT ISA
			FT PICKETT, VA	ELECTRIC			BLD 563	
			BLD 762 & 765 STORAGE NO HEAT	LP	1000	AST	BLD 564A	
				DF2	4000	AST	BLD 564	
				LP	1000	AST	BLD 761	
				LP	1000	AST	BLD 763	
				LP	1000	AST	BLD 764	
				LP	1000	AST	BLD 767	
3	3A	VA029	FT PICKETT USARC	DF2	2000	UST	BLD 503	PICKETT ISA
			FT PICKETT, VA	DF2	550	UST	BLD 504	
3	3L	VA030	FT PICKETT USARC #2	DF2	2000	AST		PICKETT ISA
			FT PICKETT, VA					
3	3R	VA031	FT PICKETT USARC #3	DF2	2000	UST	BLD 403	PICKETT ISA
			FT PICKETT, VA	DF2	1000	UST	BLD 309	
3	3D	VA033	PFC C.B. SCHOOLEY USARC	DF2	6000	UST	USARC	99TH
			GALAX, VA	DF2	1000	UST	MAINT	
				DF2	400	UST	MAINT	

CST 3
FUEL DATA INVENTORY
10/25/96

CST	R/ID	FACID	FACILITY - LOCATION	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
3	3H	VA038	LYNCHBURG AFRC	LEASED FACILITY				USMC ISA
			LYNCHBURG, VA	DF2				
3	3I	VA039	MG G.B. DENT USARC	NG				
			MARION, VA					
3	WS	VA040	WET SITE	N/A				
			MARION, VA					
3	4I	VA041	MARTINSVILLE USARC	NG				
			MARTINSVILLE, VA					
3	WS	VA046	WET SITE	N/A				
			PORTSMOUTH, VA					
3	3C	VA048	1LT J.L. MONTEITH USARC	NG				
			RICHMOND, VA					
3	4J	VA049	COL E.H. DERVISHIAN USARC	DF2	6000	UST		FT MEADE DOL
			RICHMOND, VA	DF2	1500	AST		
			DLA CONTRACT/DENNIS TAYLOR	DF2	1000	AST		
3	3S	VA050	RICHMOND AFRC	DF2	4000	UST		FT MEADE DOL
			RICHMOND, VA					
			DLA CONTRACT/DENNIS TAYLOR					
3	3B	VA051	PFC C.E. HALL USARC	NG				
			SALEM, VA					
3	FL3	VA068	FT A.P. HILL USARC #3	N/A				
			FT AP HILL, VA					
3	YT	VA069	FT STORY AMSA S-S	NG				EUSTIS, ISA
			FT STORY, VA					
3	Z3	VA071	DUMMY RICHMOND	N/A				
			RICHMOND, VA					
3	3F	WV001	BEAVER USARC	N/A				
			BEAVER, WV					
3	43	WV002	BEAVER USARC	NG				
			BEAVER, WV					
3	54	WV003	BECKLEY USARC	NG				
			BECKLEY, WV					
3	9S	WV023	LEWISBURG USARC	FACILITY UNDER CONSTRUCTION				
			LEWISBURG, WV					
3	83	WV033	R.E. POMEROY USARC/S-S	DF2	1000	AST	OMS	99TH
			RAINELLE, WV	DF2	1500	AST	ADMIN	
3	84	WV034	LTA	N/A				
			RAINELLE, WV					
3	47	WV035	R.E. POMEROY USARC	DF2	15,000	UST	ALL	FT DIX DOL
			RAINELLE, WV					
			DLA CONTRACT/DEBBIE DAVIS					

CST 4
FUEL DATA INVENTORY
10/25/96

CST	R/D	FACID	FACILITY-LOCATION	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
4	6Y	PA001	N. HILLS USARC ANNEX	NG				
			ALLISON PARK, PA					
4	7A	PA002	N. HILLS USARC	NG				
			ALLISON PARK, PA					
4	9E	PA005	BEAVER FALLS USARC	DF2	1000	AST	OMS	99TH
			BEAVER FALLS, PA	COAL				NTL GUARD ISA
4	7G	PA012	BROWNSVILLE USARC	NG				
			HILLER, PA					
4	7J	PA013	BUTLER USARC	NG				
			BUTLER, PA					
4	5F	PA018	LTA	N/A				
			CLINTON, PA					
4	58	PA024	ERIE USARC #3	NG				
			ERIE, PA					
4	9J	PA025	ERIE AFRC	NG				
			ERIE, PA					
4	59	PA026	ERIE USARC #2	NG				
			ERIE, PA					
4	7P	PA027	PENDEL-CAMINITI USARC	NG				
			FARRELL, PA					
4	7S	PA035	FRANKLIN USARC	NG				
			FRANKLIN, PA					
4	9G	PA036	ECS #103	NG				
			FRANKLIN, PA					
4	5H	PA038	LTA	N/A				
			GENEVA, PA					
4	7V	PA042	GREENSBURG USARC	NG				
			GREENSBURG, PA					
4	98	PA043	AMSA #104	NG				
			GREENSBURG, PA					
4	7Y	PA051	ASF JOHNSTOWN	NG				
			JOHNSTOWN, PA					
4	6N	PA052	JOHNSTOWN USARC #2	NG				
			JOHNSTOWN, PA					
4	7Z	PA053	JOHNSTOWN USARC #1 S-S	NG				
			JOHNSTOWN, PA					
4	9H	PA055	KITTANNING USARC	NG				
			KITTANNING, PA					
4	6P	PA057	GREENSBURG USARC STORAGE	NG				
			LATROBE, PA					
4	71	PA062	CRAWFORD CTY MEM USARC	NG				
			MEADVILLE, PA					

CST 4
FUEL DATA INVENTORY
10/25/96

CST	R/ID	FACID	FACILITY-LOCATION	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
4	73	PA063	LAWRENCE CTY MEM USARC	NG				
			NEW CASTLE, PA					
4	91	PA065	AMSA #110	NG				
			NEW CASTLE, PA					
4	75	PA067	NEW KENSINGTON MEM USARC	NG				
			NEW KENSINGTON, PA					
4	8N	PA070	CEKSF #2	NG				
			OAKDALE, PA					
4	5E	PA071	CEKSF #1	NG				
			OAKDALE, PA	LP	1000	AST	S-33	99TH
4	9C	PA072	AMSA #105	NG				
			OAKDALE, PA					
4	78	PA073	W.E. COPLEY USARC	NG				
			OIL CITY, PA					
4	8A	PA077	LTG MALCOM HAY USARC	NG				
			PITTSBURGH, PA					
4	79	PA078	COL H.E. STEELE USARC	NG				
			PITTSBURGH, PA					
4	8C	PA079	PVT S.L. MORELOCK USARC	NG				
			PITTSBURGH, PA					
4	8J	PA095	UNIONTOWN USARC	NG				
			UNIONTOWN, PA					
4	8L	PA096	WASHINGTON USARC	NG				
			WASHINGTON, PA					
4	9Z	PA157	ECS #103	NG				
			FRANKLIN, PA					
4	87	WV006	CHARLESTON AFRC	NG				
			CHARLESTON, WV					
4	8S	WV008	CLARKSBURGH MEM USARC	NG				
			CLARKSBURG, WV					
4	5T	WV009	AMSA #102	NG				
			CLARKSBURG, WV					
4	8T	WV010	CLARKSBURG USARC/OMS	NG				
			CLARKSBURG, WV					
4	6E	WV011	ELKINS USARC	NG				
			ELKINS, WV					
4	8V	WV013	1LT H.B. COLBURN USARC	NG				
			FAIRMONT, WV					
4	9M	WV014	GRAFTON USARC	NG				
			GRAFTON, WV					
4	9N	WV015	GRANTSVILLE USARC	NG				
			GRANTSVILLE, WV					

CST 4
FUEL DATA INVENTORY
10/25/96

CST	R/ID	FACID	FACILITY-LOCATION	FUEL	CAPACITY	AST/UST	PURPOSE	RESPONDER
4	9M	WV014	GRAFTON USARC	NG				
			GRAFTON, WV					
4	9N	WV015	GRANTSVILLE USARC	NG				
			GRANTSVILLE, WV					
4	8X	WV017	MAJ E.L. BIAS USARC	NG				
			HUNTINGTON, WV					
4	4D	WV018	HUNTINGTON USARC #2	NG				
			HUNTINGTON, WV					
4	9V	WV019	WESTON/JANE LEW USARC	NG				
			JANE LEW, WV					
4	9P	WV021	KINGWOOD USARC	NG				
			KINGWOOD, WV					
4	45	WV022	PRESTON CTY USARC	NG				
			KINGWOOD, WV					
4	9X	WV028	MORGANTOWN AFRC	NG				
			MORGANTOWN, WV					
4	69	WV029	MORGANTOWN USARC	NG				
			MORGANTOWN, WV					
4	8Z	WV031	WETZEL CTY MEM USARC	NG				
			NEW MARTINSVILLE, WV					
4	85	WV037	SSG R.F. KHUL USARC	NG				
			RIPLEY,WV					
4	61	WV039	AMSA #109 (G)	NG				
			VALLEY GROVE, WV					
4	89	WV041	PFC A.F. EAFRATI USARC	NG				
			WIERTON, WV					
4	67	WV043	BG J.S. JONES USARC	NG				
			WHEELING, WV					
4	81	WV046	PFC REYNOLDS USARC/AMSA 114	NG				
			PARKERSBURG, WV					
4	68	WV053	WHEELING USARC	LP	30,000	AST	ALL	99TH
			WHEELING WV					
4	6X	WV054	TRISTATE AFRC	NG				NTL GUARD ISA
			KENOVA, WV					

Consolidated Annual Performance and Evaluation Report (CAPER) 2005

Published by the Office of Housing and Community Development

Assessment of Three-To-Five Year Goals and Objectives

Neighborhood Transformation Initiative

Many Philadelphia neighborhoods are in some state of decline. The age and deterioration of large portions of the housing stock in low-income communities and increasing housing abandonment and vacancy have contributed to a net decline in the quality and quantity of housing accessible to low- and moderate-income populations. These trends are symptomatic of underlying demographic and economic changes over the past 50 years, as suburban growth and the demise of industrialization resulted in a flight of population and jobs from Philadelphia. Housing policies and programs alone cannot solve these problems. It requires a dramatic change in government structure, policies and priorities.

In April 2001, the City of Philadelphia unveiled its Neighborhood Transformation Initiative (NTI). NTI is a strategy to rebuild Philadelphia's neighborhoods as thriving communities with clean and secure streets, recreational and cultural outlets and quality housing. NTI takes a multifaceted, comprehensive approach that stresses interagency cooperation and coordination in addressing every aspect of neighborhood development. The initiative also creates opportunities for government and citizens to work together, restoring civic pride and building community spirit. NTI strives to build the capacity of community-based organizations to identify needs and develop new housing and employment strategies within their communities while garnering the support of the private sector through innovative partnerships and by leveraging resources. Through its various components, NTI will help Philadelphia's neighborhoods meet their potential as clean, safe and thriving places in which to live, work and play.

■ NTI Goals and Principles

NTI establishes a framework for action with six goals to revitalize Philadelphia's neighborhoods and to change the way the City operates:

Goal 1: Planning
Facilitate and support community-based planning and the development of area plans that reflect citywide and neighborhood visions.

Goal 2: Blight elimination
Eradicate blight caused by dangerous buildings, debris-filled lots, abandoned cars, litter and graffiti to improve the appearance of Philadelphia streetscapes.

Goal 3: Blight prevention
Advance the quality of life in Philadelphia neighbor-hoods with a targeted and coordinated blight prevention program that enforces city codes and abates public nuisances.

Goal 4: Assembling land for redevelopment

Improve the City's ability to assemble and dispose of land for redevelopment and establish a Land Bank that will oversee the continual maintenance of such land over time.

Goal 5: Neighborhood investments

Stimulate and attract investment in Philadelphia neighborhoods.

Goal 6: Leveraging resources

Leverage resources to the fullest extent possible and invest them in neighborhoods strategically.

Effectively promoting new investment in Philadelphia's neighborhoods requires transparent strategies, predictable administrative policies and a coordinated, comprehensive approach that mandates cooperation among public agencies, community residents and private and non-profit sector interests.

Anchored by standards for quality neighborhoods, the City will employ a set of principles to guide the allocation of federal, state, and local resources that are available for investment in neighborhoods. These principles seek to:

- **use planning as an investment tool;**
- **balance affordable and market-rate housing;**
- **invest to stimulate market activity;**
- **foster competition to get the best product;**
- **maximize private capital and minimize public subsidies; and**
- **link housing with other public and private investments.**

NTI and the *Year 31 Consolidated Plan*

The keystone for the successful execution of NTI is the issuance of approximately $295 million of bonds by the Redevelopment Authority of the City of Philadelphia (RDA) in several series. RDA may issue bonds from time to time during the period of seven years from the effective date of the enabling legislation. These bonds will enable the City to generate sufficient resources to eliminate the backlog of dangerous buildings that are safety hazards in Philadelphia neighborhoods; prevent the encroachment of blight into stable neighborhoods and create opportunities for re-development in the most distressed areas of the City.

In addition, the *Year 31 Consolidated Plan* supports a variety of homeownership and rental projects that are consistent with NTI's housing investment strategies. OHCD is committed to support projects that further key principles of NTI and address:

1) specific housing needs exhibited by extremely low- to moderate-income renter and owner households;

2) needs for housing and service resources exhibited by homeless families and individuals including prevention, permanent and transitional housing and supportive services;

3) housing and service needs for persons with HIV/AIDS and other special-needs populations; and

4) community development needs.

The "Strategic Plan" conveys the City's proposal to meet these needs by identifying funding priorities, specific programming objectives and the estimated number of households to be assisted over a three-year time period. Also included is a description of the factors taken into

consideration in determining relative priority needs and the connection between strategies and market conditions. In accordance with HUD regulations for the *Consolidated Plan*, the Strategic Plan is divided into four subsections, representing the basic categories of Priority Needs:

- **Affordable Housing;**
- **Homelessness;**
- **Non-Homeless Special Needs;**
- **Non-Housing Community Development.**

The Priority Needs Summary Table on the next pages illustrates the relative ranking of specific housing and community development needs (as either "high," "medium," or "low") and provides estimates of the amount of federal entitlement funding (CDBG, HOME Investment Partnership Program, HOPWA and Emergency Shelter Grant), state and local NTI bond funds expected to be used to address these needs over a three-year period. No Housing Trust Funds are anticipated in this chart. Federal and state funding for FY 2007 and FY 2008 is assumed to be at the same level as FY 2006.

Affordable Housing

Affordable Housing

■ Basis for Assigning Relative Priority Needs

High Priorities

The City is assigning a *high priority* to the following household types:

- **Extremely Low- and Low-Income Renter Households**, including Elderly households, Small Households and Large Households with cost burdens, severe cost burdens and substandard conditions.
- **Extremely Low- and Low-Income Owner Households**, including Elderly and Non-Elderly, with substandard housing and cost burdens.
- **Moderate-Income Renter Households and Owner Households** with cost burdens, and other housing problems, including Elderly, Small and Large Renters, and Elderly and Non-Elderly Owners.

Extremely Low- and Low-Income Renter Households and Extremely Low-Income Owner Households in Philadelphia have the most urgent housing needs. Between 70 and 75 percent of these families face either housing costs in excess of 30 percent of income or housing that is deteriorated. Because these are among the most impoverished households in the city, cost burdens and severe cost burdens are particularly intolerable. The City proposes to continue funding affordable housing activities that will target all household types in these income categories.

Support for homeownership for low-income and moderate-income families is a high priority for the City, due both to the positive neighborhood benefits generated by increased homeownership and the high cost of maintaining aging housing units. Assistance for Elderly and Non-Elderly current and first-time homeowners will continue as a funding priority. Homeownership rehabilitation and sales housing production in moderate-income neighborhoods will also receive support as an effort to promote stable communities and encourage middle-income homeowners to remain within the city.

The housing needs of Moderate-Income Renter Households are assigned a high priority by the City, although the relatively greater needs of extremely low- and low-income families suggest that the bulk of funding go to the lower income groups. The City will continue to fund activities for

moderate-income renters as funding permits, particularly programs targeting Elderly and Large Households.

Medium Priorities

The City is assigning a *medium priority* to the following household types:

- **Extremely Low-, Low- and Moderate-Income Owner Households** with overcrowding only;
- **Extremely Low-, Low- and Moderate Income Large Renter Households** with overcrowding only.

Some owner households do face high rates of overcrowding, and that overcrowding may be a particular problem in the Latino community. Large Renter House-holds were found to have the highest overall incidence of overcrowding. Because these families (both Owners and Large Renters) are also likely to have other problems identified as “high priorities” (such as cost burdens or substandard conditions), most households experiencing overcrowding will fall into other categories of need that will receive funding. As Low- and Moderate-Income Owner Households and Large Renter Households facing overcrowding alone become evident and as funding permits, the City may allocate resources for their assistance.

Low Priorities

The City is assigning a *low priority* to the following household types:

- **Extremely Low-, Low- and Moderate-Income Elderly Renter Households** with overcrowding;
- **Extremely Low-, Low- and Moderate-Income Small Renter Households** with overcrowding.

Overcrowding presents a housing emergency almost exclusively for Large Renter families in Philadelphia. Affordability and substandard conditions are the most immediate problems for Lower-Income Elderly and Small Renter Households. Elderly Renter Households, by census definition, are limited to one or two persons and are less likely to be found in overcrowded settings. Elderly heads of households with five or more family members would receive a priority for assistance as a Large Renter Household.

■ Strategy and Objectives for Meeting Priority Housing Needs

The City’s affordable housing strategy responds to the unique features of the Philadelphia housing market. Both rents and home prices in Philadelphia remain lower than in many cities of comparable size across the country. However, affordability remains a problem for households at the lower end of the income distribution. Also, the age and deteriorated condition of the housing stock forces many low- and moderate-income families to live in substandard conditions. Elderly homeowners on fixed incomes have a difficult time keeping up with repairs and thus, vacancy and housing abandonment are at crisis levels in many low-income neighborhoods.

The City’s affordable housing strategy addresses these factors, emphasizing housing production to rebuild the deteriorated housing stock; housing preservation, to arrest the process of abandonment and vacancy; homeownership, to enable low- and moderate-income renter households to experience the benefits of homeownership and to encourage private investment in Philadelphia neighborhoods; and resource leveraging to ensure that scarce housing dollars support as much activity as possible, in response to the overwhelming levels of need in the city. Each aspect is described below.

■ Housing Production

Rental and Homeownership Production

Rental and homeownership production are key components of Philadelphia’s affordable housing strategy. In addition to increasing the net supply of housing units available to lower-income families, new construction is necessary to redevelop the hundreds of vacant lots that blight many Philadelphia neighbor-hoods. Vacant lots result from the process of housing decay, abandonment

and ultimately demolition. Without attention, these areas can quickly become trash-strewn dumping grounds. At the same time, vacant lots present an opportunity for the development of more spacious dwelling units with private yards or off-street parking. Given the persistent downward trend in population, new construction can provide a means of redeveloping large portions of the low-income housing stock in a manner that incorporates advances in urban design and that provides enhanced accessibility for persons with disabilities.

New construction at a large scale can also rebuild a housing market, leading to the reduction in subsidy required to produce additional housing units.

Rental and Homeownership Rehabilitation

Housing rehabilitation is an particularly important strategy for Philadelphia, given the large numbers of long-term vacant properties (some of which are suitable for rehabilitation) found in low-income communities. Through rehabilitation, rental units that are vacant and uninhabitable can be reoccupied and units occupied by extremely-low and low-income homeowners can receive critically necessary repairs and basic maintenance. Both the declining incomes of Philadelphia's homeowners and the deteriorated condition of the housing stock call for an aggressive policy of housing rehabilitation.

Housing rehabilitation should reinforce existing strong blocks or communities, consistent with NTI principles.

Public Housing Production

The Philadelphia Housing Authority (PHA) serves the lowest-income persons who are often the neediest. For this reason, supporting the production and manage-ment of public housing is perhaps the single most important strategy for meeting the needs of extremely low-income renter households. PHA's large scale redevelopment activities, notably redevelopment funded through the HOPE VI Program, can transform blighted neighborhoods while producing mixed-income rental and homeownership units that serve persons of very low to moderate income. The NTI program supports acquisition at large scale in areas such as Mill Creek where HOPE VI activities are taking place. In the past, CDBG or HOME funding supported the redevelopment or replacement of obsolete PHA units at Southwark Plaza (now called Courtyard Apartments at Riverview), Martin Luther King Plaza and Schuylkill Falls.

Housing Production Program Objectives

In advancing this housing production strategy, the City reaffirms its commitment to preserve and revitalize neighborhoods by continuing the targeted development of rental and homeownership units in North Philadelphia and in low-income sections of West Philadelphia, South Philadelphia, Northwest Philadelphia, Frankford and Kensington. Specific programmatic objectives are:

- **New construction for sales housing;**
- **New construction for rental housing;**
- **Vacant unit rehabilitation for sales housing;**
- **Vacant unit rehabilitation for rental housing;**
- **Large-scale homeownership development in targeted neighborhoods.**

■ Promoting Homeownership and Housing Preservation

To more effectively support economic development and reinvestment in Philadelphia, the City will continue to emphasize homeownership and preservation of the existing occupied housing stock. Homeownership and housing preservation are top priorities in the neighbor-hood strategic plans developed in coordination with OHCD. The City proposes to sustain housing counseling programs for first-time homebuyers and maintain support for major systems repair programs for current homeowners. These activities encourage first-time homebuyers and also support current homeowners through preservation programs.

Homeownership and Housing Preservation Program Objectives

By strengthening housing preservation and home-ownership programs, the City will help to prevent further housing abandonment, maintain neighborhood quality of life and assist low- and moderate-income residents in attaining the goal of homeownership. These goals will be accomplished by supporting the following objectives:

- **Housing counseling;**
- **Emergency repairs, housing preservation and weatherization; and**
- **Home equity financing and rehabilitation assistance.**

■ Leveraging Private Sector Resources

The City's *Consolidated Plan* can be an effective component of the City's overall economic development strategy if available resources are organized to leverage substantial commitments of private sector funding and long-term investment in Philadelphia. Such activities can include attracting commitments of private debt and equity financing, making full use of the City-State Bridge Loan Program and sustaining private-sector support for Community Development Corporation (CDC) operations through targeted funding commitments made in coordination with private funding sources.

In continuing to develop rental and homeownership units, the City proposes to pursue strategies that will attract private capital into Philadelphia neighborhoods. These strategies maximize the impact of federal housing dollars by increasing the net amount of resources flowing into communities. Over the past several years, OHCD has supported the development of rental housing by providing financing to projects which leverage significant amounts of private funding. OHCD financing to rental projects has generated equity investment through the utilization of the Low-Income Housing Tax Credits (LIHTC) by corporations and equity funds such as the National Equity Fund (NEF). Additional private funds have been leveraged through use of the Pennsylvania Housing Finance Agency (PHFA) PennHOMES Program which provides permanent financing for the development of rental projects.

Objectives for Leveraging Private Sector Resources

In order to maximize private-sector investment in low-income subsidized housing, OHCD proposes the continuation of policies that generate or sustain the following private sector funding commitments:

- Equity investment in Low-Income Tax Credit Ventures;
- Private sector support for CDC operations and working capital;
- Mortgages for first-time homebuyers;
- Bank financing for rental rehabilitation; and
- Anti-predatory lending products.

Affirmatively Furthering Fair Housing

■ The City of Philadelphia's Analysis of Impediments to Fair Housing Choice Executive Summary

Goals

In accordance with 24 CFR 570.601(b), which describes the activities required of Community Development Block Grant entitlement jurisdictions in fulfilling their mandate to *affirmatively further fair housing*, in June of 1999, the City of Philadelphia Office of Housing and Community

Development (OHCD) completed an Analysis of Impediments to Fair Housing Choice. Conducting an Analysis of Impediments to Fair Housing Choice ("Analysis of Impediments") is required as the first step in a fair housing planning process, which must also include the following: taking appropriate actions to overcome the effects of any impediments identified through that analysis; and maintaining records reflecting the analysis and actions taken. An Analysis of Impediments will be conducted every three to five years by OHCD in coordination with the release of the *Consolidated Plan*, which offers a comprehensive profile of Philadelphia's housing and community development needs, a market analysis, a three- to five-year strategy for addressing those needs, and specific actions to be taken each year.

Methodology

The Analysis of Impediments was conducted by staff from OHCD, in consultation with the Philadelphia Commission on Human Relations, the City department charged with enforcing fair housing laws, and providing education and intervention in all matters pertaining to fair housing. Information was gathered from published reports, agency studies, data from the Bureau of the Census and interviews with various public and private non-profit agencies. The following housing and fair housing organizations contributed valuable information and insights to the Analysis of Impediments.

- Philadelphia Commission on Human Relations (City of Philadelphia)
- Accessibility Compliance Office (City of Philadelphia)
- City Planning Commission (City of Philadelphia)
- Philadelphia Neighborhood Housing Services
- Fair Housing Council of Suburban Philadelphia
- Pennsylvania Human Relations Commission
- Housing Consortium for Disabled Individuals
- U.S. Department of Housing and Urban Development
- Greater Philadelphia Urban Affairs Coalition
- Philadelphia Housing Authority
- Mayor=s Commission on People with Disabilities
- Housing Association of Delaware Valley
- Tenants= Action Group (TAG)-Fair Housing Action Center
- Philadelphia ACORN
- Fund for an OPEN Society

Key Points

The Analysis of Impediments provides an overview of both the fair housing resources in Greater Philadelphia and the hierarchy of local, state and federal fair housing laws. The nation's most significant piece of fair housing legislation, the Fair Housing Act (as Amended in 1988) makes it unlawful to discriminate on the basis of race, nationality, color, religion, sex, familial status and handicap. The U.S. Department of Housing and Urban Development (HUD) is the federal body that enforces the Fair Housing Act. State and local entities that enforce laws that are "substantially equivalent" to the federal Fair Housing Act and receive referrals from HUD to investigate local complaints filed with HUD. In Philadelphia, only the state law (the Pennsylvania Human Relations Act) is substantially equivalent to federal law. Therefore, the Pennsylvania Human Relations Commission contracts with HUD to investigate alleged violations of the Fair Housing Act. Based on the patterns of complaints filed, the results of fair housing testing and the insights of fair housing professionals interviewed, the following key findings emerged regarding the nature of discrimination in Philadelphia:

- Race remains the most frequent basis of alleged discrimination for cases filed with the Pennsylvania Human Relations Commission.
- Racial discrimination persists in Philadelphia, but has become much more subtle, often making detection very difficult.
- Fair housing testing is an effective means of uncovering a wide variety of discrimination. It has been used in Philadelphia recently to discover discrimination in mortgage lending.
- Refusal to rent to families with children constitutes discrimination based on familial status under the Fair Housing Act. Familial status was incorporated as a protected class in the

Fair Housing Amendments Act of 1988, however, blatant discrimination against families with children is not uncommon.

- Persons with disabilities also became a protected class under the Fair Housing Amendments Act of 1988. Strong advocacy by the community of persons with disabilities has helped to increase public awareness. Confusion still surrounds aspects of the law dealing with "reasonable accommodations."
- Much progress has been made to promote fair lending practices. Banks and other lenders are accountable to laws such as the Community Reinvestment Act (CRA) and the Home Mortgage Disclosure Act (HMDA) as well as the Fair Housing Act. In contrast, insurance companies in Philadelphia continue to engage in practices that effectively "redline" low-income and minority communities, and lack the regulatory oversight that lenders are subject to.

Impediments to Fair Housing

Based on the information gathered from the sources described above, the following problems were identified as impediments to fair housing choice in Philadelphia:

- Lack of education on fair housing rights, laws and resources;
- Lack of access to quality homeowners' insurance for residents of low-income and minority neighborhoods;
- Limitations in the supply of housing units accessible to persons with disabilities; and
- Vacancy and abandonment in low-income areas.

These issues were selected as impediments because of the pervasive and particularly obstructive nature of their effects on fair housing. The intent of identifying these impediments was not to suggest that they are the only fair housing concerns in Philadelphia, but rather that additional intervention in these areas would make the most difference in improving fair housing options for families. A brief description of each impediment is provided below.

Education

Across the board, fair housing advocates feel that the general public, as well as members of the real estate community (lenders, real estate brokers, landlords, underwriters, appraisers, insurance companies, etc.), are not well-informed in fair housing laws. Almost every person interviewed in conjunction with preparing the Analysis of Impediments felt that a lack of education and understanding of fair housing laws was a major impediment in Philadelphia. Persons who are discriminated against are not always equipped to recognize discrimination. It is common for people to believe they were turned away from an apartment rental or denied a home mortgage through some fault of their own, rather than to attribute the rejection to discrimination. Education can also be used as a preventive measure, discouraging those who either are unaware of the law, or who choose to ignore the law, from discriminating.

All segments of the community benefit from enhanced fair housing education.

- **Consumers** can gain awareness of their rights under federal and local fair housing laws and can learn to better detect discrimination, which has become much more subtle over time.
- **Housing professionals:** Fair housing education is essential for housing professionals such as real estate brokers, lenders, advertisers and landlords, who can face significant monetary penalties for violating federal fair housing laws. Training for housing professionals can also help to foster a respect and appreciation for fair housing legislation, and to form cooperative alliances with fair housing advocates and enforcement entities.
- **Communities** need to be educated about fair housing laws, particularly the laws which make it illegal to "coerce, intimidate, threaten or interfere with any person in the exercise or enjoyment of " any rights granted under fair housing laws. Education for communities

can take many forms including training about the law, training in conflict resolution, and appreciation for diversity.

Lack of Quality Homeowners' Insurance in Low-Income and Minority Neighborhoods

Homebuyers in low-income and minority neighborhoods in Philadelphia find it difficult if not impossible to obtain quality insurance coverage. Therefore, these households are systematically denied the protection readily available to other households and are forced to bear full responsibility for the risks associated with homeownership. Barriers are evident in insurance industry underwriting practices, which have the effect of redlining low-income and minority areas. These underwriting standards include:

- Flat roofs: Some companies refuse to insure flat roofs because they are highly susceptible to water damage and require frequent replacement.
- Age: Properties over 50 years old may be rejected by insurers.
- Property value: Properties valued at less than $30,000 are often considered uninsurable.
- Proximity to vacant structures: Properties that are adjacent to vacant properties or on blocks with substantial numbers of vacant properties may be denied coverage.
- Cost of replacement: Typically, the replacement cost cannot exceed 120 percent of the market value, which is very restrictive in low-income neighborhoods with depressed market values.

In addition to insensitive underwriting criteria, insurance companies' unwillingness to locate in low-income and minority communities is another indication of an apparent lack of interest in serving these areas.

Lack of Accessible Units for Persons with Disabilities

According to the Housing Consortium of Disabled Individuals (HCDI), approximately 1 in 6 Philadelphians has a disability of some sort. At the same time, accessible housing makes up approximately 1 percent of Philadelphia=s housing stock. Despite efforts such as the Adaptive Modifications Program, which assists persons with disabilities in making modifications to housing, advocates for persons with disabilities feel strongly that the demand for accessible housing is greater than the resources. Several factors contribute to a lack of affordable and accessible housing in the city, including the nature of the housing stock in Philadelphia, (due to the enormous difficulty and expense of modifying a typical rowhouse); and lack of understanding and non-compliance regarding requirements under fair housing laws that allow tenants to make "reasonable modifications" to their dwelling units.

Vacancy and Abandonment in Low-Income and Minority Areas of the City

Declining trends in population and recent changes in demographics have contributed to a severe problem with vacancy and abandonment in the core of many low-income and minority neighborhoods. These problems are also symptomatic of a legacy of disinvestment and redlining endured by these communities. There are an estimated 26,000 vacant units in the city of Philadelphia, including 8,000 long term vacant structures, primarily located in low-income and minority areas. The sheer magnitude of this problem makes it a major barrier to promoting healthy, viable neighborhoods in the core of low-income and minority areas.

Conditions of vacancy and abandonment contribute to a further loss of population by making these areas unattractive to new families and businesses. The quality of life is also diminished due to declining feelings of security and safety and the lack of commercial and retail establishments within the community.

Conclusion

Because the impediments identified cover a broad area of fair housing concerns, developing appropriate actions to address them will require innovative thinking as well as time and resources. The City should institute a process whereby each impediment can be examined further by community and fair housing professionals and appropriate actions developed. These actions should include specific goals to be achieved over a three-year period and target dates for projected accomplishments.

Fair Housing Actions

Responding to Intergroup Tensions

The Philadelphia Commission on Human Relations (PCHR) is the City's lead agency in responding to intergroup tension and hate crimes. An intergroup tension is defined as a situation where violence or anti-social behavior is directed at, or threatened to be directed at, an individual or group of individuals because of their group identity. PCHR has a Compliance Division that investigates complaints of discrimination in housing, including complaints of ethnic intimidation in move-in situations. In addition, PCHR's Community Relations Division has a team of field representatives that work in neighborhoods throughout the city to address issues of intergroup tension with residents, community leaders, clergy, the police, City Council persons and others. Both Divisions work together to address ethnic intimidation, to instruct residents on procedures for filing Title VIII fair housing complaints and to help communities take responsibility for recognizing people's right to live in the neighborhood of their choice.

PCHR has a program called "Partners Against Hate and Crime," in which PCHR works cooperatively with the Greater Philadelphia Association of Realtors to address ethnic intimidation and threats when they occur during a real estate transaction. In addition, if a real estate agent anticipates that a client could encounter intergroup tension as a result of moving into a certain neighborhood, PCHR will be contacted and get involved, along with the Philadelphia Police, to address the matter. The Philadelphia Police Department has a special unit, the "Conflict, Prevention and Resolution Unit," specifically created to investigate violations of the ethnic intimidation and institutional vandalism provisions of the Pennsylvania Criminal Code. The police also routinely work in collaboration with PCHR in all ethnic intimidation cases.

PCHR is a member of a citywide law enforcement task force which includes the U.S. Attorney's Office, Federal Bureau of Investigation, Immigration and Naturalization Service, Philadelphia Police Department, State Police, State Attorney General, Philadelphia District Attorney and others. The task force meets on a monthly basis to share information and resources on issues related to intergroup tension.

Preventing Vacancy and Abandonment in Low-Income Neighborhoods

The Neighborhood Transformation Initiative (NTI) is the first in a series of comprehensive strategies being undertaken by the City. It seeks to eradicate the City's significant inventory of vacant, deteriorating buildings and trash-strewn lots while implementing a comprehensive and strategic citywide plan - one that preserves healthy neighborhoods, creates opportunities for redevelopment and builds 21st century neighborhoods. It requires the leveraging of available public funds and a long-term partnership between government, the private and non-profit sectors and the residents of the City.

To successfully implement NTI, the City needs to draw upon an array of public and private resources and has prepared a *Year 28 Consolidated Plan* that is consistent with the goals, housing strategies and principles of NTI. The City proposes to leverage these resources in several new and important ways - most significantly through $295 million of Blight Remediation and Neighborhood Investment Bonds to be issued over the next five years.

This year's *Consolidated Plan* supports a variety of homeownership and rental projects that are consistent with NTI's housing investment strategies. The City is committed to working with these projects to ensure that they further the key principles of NTI and, during this transitional year, will evaluate its current housing and community development programs to ensure that these resources are focused in appropriate areas.

Large scale housing construction is a strategy of NTI to rebuild and repopulate the core of North Philadelphia and similar areas. In Fiscal Year (FY) 1997, the City was selected as one of six cities nationwide to receive funding to create a Homeownership Zone. Philadelphia's Homeownership Zone is located in the Cecil B. Moore community. A total of $5.52 million in Economic Development Initiative grant funding and $18 million in Section 108 loans were awarded to the City. This funding will help create a total of 296 new housing units within the Homeownership Zone boundaries, which are N. Bouvier Street to N. 20th Street, between Master Street and Montgomery Avenue. In an effort to encourage income and cultural diversity within the Homeownership Zone, up to 49 percent of new units may be marketed to families earning up to 120 percent of median income. By the end of FY 2004, 143 units were completed. Construction on the remaining units will continue in FY 2005. In partnership with the State's Homeownership Choice Program, 50 affordable new construction homeownership units were completed by Asociacíon de Puertorriqueños en Marcha. Seventy additional units are planned. Another Homeownership Choice award has been made to the Hunter School Homeownership Initiative, which will construct 60 units near Howard and Dauphin streets.

In 1999 the New Kensington Open Space Management Program won a HUD Best Practices award. Partially funded by OHCD, this pilot program helps the community acquire and maintain vacant lots. Uses include sideyards, community gardens, parks and a commercial farm. To date, OHCD has committed funding to support the acquisition of 179 lots to support this program. In FY 2003 and FY 2004, OHCD allocated $75,000 to New Kensington CDC to continue the Open Space Management Program.

Improving Housing Accessibility for Persons with Disabilities

OHCD has maintained its commitment to increasing housing accessibility for persons with disabilities through the Adaptive Modifications Program and establishing minimum accessible unit requirements for City-funded housing development. The Adaptive Modifications Program was funded at $5 million in NTI bond funds and CDBG funds in Year 29 and adapted 168 homes during this period. The Adaptive Modifications Program provides assistance to disabled homeowners and renters to make their residences accessible. In addition, OHCD requires that housing developed with City funds comply with federal accessible housing regulations. Developers of rental housing must make at least five percent of the total dwelling units (but not less than one unit) accessible to persons with a mobility impairment. Two percent of the units (but not less than one unit) must be made accessible to persons with a vision or hearing impairment. Since Year 22 (FY 1997), these same requirements are applied to newly constructed homeownership housing as well. Effective July 1, 2004, the requirement for mobility accessible units was increased from 5% to 10%.

Beginning in Year 26, OHCD has encouraged proposals for housing development to include visitability design features. Also known as universal design, these features make homes usable by most people despite their level of ability or disability and goes beyond the minimum requirements and limitations of accessibility law. Examples include no-step entrances, wider room entrances and hallways.

In FY 1998 the City entered into the City of Philadelphia - Disabled in Action Partnership Initiative. Known as the Partnership Initiative, this is a series of activities undertaken by OHCD and housing advocates to ensure that disabled people obtain the maximum possible benefit from available housing production, preservation, and service resources.

Conducting Fair Housing Training and Education

The City's commitment to address all of the listed impediments to fair housing has awakened and ignited a resurgence of proactive methods to combat both overt and covert forms of housing discrimination. Some of the impediments are substantiated with tangible evidence identified by quantifiable data, others are more institutional in nature and therefore complex and difficult to eliminate without a regulatory body or the passing of legislation that serves to mitigate them.

The City of Philadelphia funds approximately thirty-one housing counseling agencies. Housing counseling agencies activities include pre-purchase, housing education, home inspections, anti-predatory lending, mortgage delinquency, tenant counseling, post rental counseling, and problem

resolution. For fiscal year 2004, 35,953 housing counseling sessions were provided. One private housing agency that the City has awarded funding to handle fair housing issues, reached their normal documented number of housing complaints for a year within five months. It attributes this increase in complaints to the success of the outreach service that was provided in previous years. The most common fair housing complaint documented by housing counseling agencies remains racial steering.

The Philadelphia Commission on Human Relations (PCHR) is the city agency that enforces the Philadelphia Fair Practices Ordinance, which prohibits discrimination in housing, employment, and the use of public accommodations. PCHR documented only 10 housing complaints, which is 2% of all complaints filed, for fiscal year 2004. This low percentage does not indicate the actual incident rate because substantially higher numbers of complaints were filed in prior years. Most of PCHR's efforts are geared towards resolution of neighborhood, and inter-group conflict. PCHR intervention in neighborhood disputes has potentially impacted the occurrences of fair housing complaints by preventing them from escalating.

OHCD funds the *News on TAP* newsletter which publicizes issues related to housing for persons with disabilities in the City of Philadelphia. The newsletter expanded to an online version in Year 27.

In Year 25, OHCD began to address the issue of predatory lending. A series of meetings was conducted with housing counseling agencies, fair housing organizations, and Community Legal Services. OHCD added anti-predatory lending education to the services offered by the thirty-one housing counseling agencies funded through the housing counseling program. The City of Philadelphia passed a bill to penalize predatory lenders, becoming one of the first local governments in the country to legislate legal action to combat this practice.

Brokers are aware of their obligations under the fair housing laws and may provide an example of the effectiveness of education. All licensed brokers in Pennsylvania have received fair housing training and must fulfill continuing education requirements. However numbers suggests that something additional is going on that is affecting the low levels of lending activity in Philadelphia compared to its region. According to the Delaware Valley Regional Planning Commission (DVRPC), the highest level of mortgage lending in the region occurs in the suburbs, rather than in the City. More troubling, the rate of mortgage approvals is significantly less in the City than in the suburbs.

Philadelphia with over 30,000 mortgage application submitted in 2000 has a much lower percentage of applications approved (50% versus an average of 75% in suburban counties), and a much higher percentage of applications are withdrawn or incomplete. Efforts made by Philadelphia's public officials and community advocates to understand why so many applications are withdrawn or incomplete in Philadelphia will better guide us to institute programs that will address this.

Assisting Homeowners to obtain Quality Insurance

OHCD has continued to study the availability of homeowners insurance for low-income and minority homebuyers. Information has been gathered on the location of insurance agents and state data has been examined for comparative purposes. An evaluation of the use of conventional insurance as compared to the Fair Plan for housing counseling clients is being considered.

According to City-funded housing counseling agencies, a major complaint was denial of homeowners insurance due to race, the age or location of the home or affordability of the policy. Philadelphians are receiving proportionally less insurance coverage compared to the region. There are no regulations that protect consumers from discriminatory tactics, comparable to those in the banking industry such as the Community Reinvestment Act and Home Mortgage Disclosure Act (HMDA).

The City of Philadelphia has awarded funding to assist housing counseling agencies who participate in providing homeowners insurance. One agency is collaborating with an insurance company that is tackling the main barrier to receiving quality homeowners insurance. To insure

complete access to homeowners insurance, the artificial barriers which kept inner city, lower income, and minority owners out, are decreased by new provisions:

- The minimum property value requirement, which was typically $50,000 in Philadelphia, has been eliminated
- No building age limitations are imposed
- People calling to inquire about insurance in the City get called back and get actual price quotes. Not returning calls was the most common way insurers refused to issue insurance in particular neighborhoods.
- Properties with flat roofs (90% of Philadelphia housing) can be insured
- Employment history, which is an irrelevant criteria, will not be used to determine eligibility

Additionally, the full coverage policy HO-3 replacement insurance policy, which is the standard policy in the suburbs, and covers almost all insurable loses except flood, earthquake, war and nuclear accident is offered at ten percent discount. The City encourages its housing counseling agencies to work with insurance companies to expand this kind of enlightened underwriting standard.

Other Actions

Anti-Poverty Strategy

Philadelphia's housing problems will remain intractable as long as a high proportion of its population is economically dependent and lacks access to the skills and resources needed to succeed in today's economy. According to 2000 Census data, approx-imately 23 percent of Philadelphia's population have incomes at or below the poverty standard. The continued departure of jobs from the city as well as the higher educational requirements for occupations in the growing sectors of the economy have made it increasingly difficult for city residents from low-income communities to obtain stable, well-paying jobs. Measures which connect people to the labor force, support the creation of small businesses and encourage entrepreneurship among low-income residents are necessary to improve the economic prospects of city's residents and alleviate poverty. The following initiatives help low-income residents gain access to jobs, skills and capital, and form the core of the City's Anti-Poverty Strategy:

- The Neighborhood Benefit Strategy was inaugurated through Mayor's Executive Order 2-95 and requires developers receiving CDBG funding to set a goal of returning 50 percent or more of the economic benefit of the CDBG-funded venture to the immediate and surrounding neighborhood; and
- The Empowerment Zone Strategy being implemented in the designated neighborhoods will generate new job opportunities, support local enterprises and help revitalize local neighborhood economies.

In addition to these core initiatives, job-training activities are undertaken by a number of local agencies including OHCD, PHA, OESS, the Department of Human Services and PWDC. Representatives from these agencies and other service providers meet regularly to coordinate resources and promote economic self-sufficiency programs.

Several programs serving homeless persons include a self-sufficiency component. For example, Dignity Housing, Project Rainbow and People's Emergency Center provide life-skills training and other services designed to increase economic and social self-sufficiency.

PHA's Family Self-Sufficiency Program provides Housing Choice Voucher rental assistance to program participants who also receive remedial education, counseling, job-training referral and placement.

Education is another primary strategy that can aid in the reduction of poverty. Volunteers from the Mayor's Commission on Literacy help Philadelphians improve their reading skills, and link education with neighborhood-based organizations.

Effects of Welfare Reform

Federal and state welfare reform will continue to have an effect on the city as more residents lose benefits by exceeding their lifetime limit or failing to meet work requirements imposed by the state. Homelessness and the demand on city social services are likely to increase as this happens. For example, the rising number of Philadelphia residents without Medical Assistance/Medicaid has resulted in more visits to city health care centers by uninsured individuals: in FY 1996, 49 percent of the visits to health care centers were by uninsured visitors while in FY 2001 that number reached 64 percent.

Since FY 2003, efforts by the City's Health Department to enroll patients in Medical Assistance and other insurance has reduced the number of uninsured visits to 53 percent, as of November 2004.

Full enforcement of welfare reform and further policy changes produced by the federal and state governments may also have revenue impacts to the city. Philadelphia's Department of Human Services depends heavily on federal support through the Temporary Assistance for Needy Families (TANF) program. Currently, increased City spending on health centers and human services continues in an effort to address the needs of TANF households as their resources are depleted.

The City continues to maintain CDBG and HOME funding for critical housing and community development needs, and does not divert housing or community development funds to specific welfare reform activities. However, beneficiaries of these programs and funding sources do include families currently receiving or transitioning off TANF benefits.

Lead-Based Paint Hazard Reduction Strategy

Lead-Based Paint Hazards in Philadelphia Housing

Lead is the leading cause of non-congenital mental retardation. Elevated blood lead levels in young children can lead to a range of problems from relatively subtle developmental disabilities to severe impairment or even death. Common effects include impaired cognition and functioning, slowed learning abilities and behavioral disorders. Often these manifestations are subtle during early childhood but become more pronounced as children progress through school. In the past four years Philadelphia has had at least one lead-related death. Lead poisoning is most likely to occur in old, poorly maintained dwellings with deteriorated paint. Philadelphia's housing stock is largely pre-war; an unusually high proportion of low-income residents own their houses but lack the means to prevent water damage and decay while those who must rent face an extreme shortage of safe, affordable rental housing.

Though it has declined markedly in the past few years, there is still an alarming incidence of childhood lead poisoning in Philadelphia. More than 2,000 young children currently have blood lead levels above the Environmental Intervention Blood Lead (EIBL) level—20 micrograms per deciliter (ug/dL), or two consecutive readings between 15 and 19 ug/dL—and approximately 3,500 are above the 10 ug/dL "level of concern."

Response to Lead Poisoning

Until recently, public lead-hazard reduction activities have been primarily reactive: they are targeted to properties where a child has been identified with an EIBL level. The Health Department's Childhood Lead Poisoning Prevention Program (CLPPP) offers remedies based on

the blood lead level found in children 6 months to 6 years old. Children are screened through a citywide network of hospitals, public health clinics, private doctors and schools. EIBL levels are confirmed by laboratory reports. In addition to providing direct medical intervention as appropriate, the City seeks to minimize further lead exposure in the lead-poisoned child's home environment.

For children with blood lead levels of 70 ug/dL or higher, CLPPP attempts an environmental investigation at the home (or other suspected lead source) within 24 hours after EIBL is confirmed. Based on recent experience, only a few such cases are expected in FY 2005. For children with blood lead levels between 45 and 69 ug/dL, an environmental investigation is attempted within five working days after test results are received in the district health office. The investigation rate for this intermediate level of lead poisoning is approximately 90 percent. In less extreme, asymptomatic cases (where there may have been no physician follow-up), parents often have little sense of urgency. Despite follow-up contact attempts by Health Department staff, the expected investigation rate is only 70 percent.

Following its hazard investigation, the Health Department orders the property owner to take corrective steps. When necessary it is empowered to declare properties unfit for human habitation. The objective of enforcement is not abatement (the permanent elimination of lead hazards), which is often prohibitively expensive, but hazard reduction. Hazard reduction uses a combination of measures to make the property currently lead-safe. As such measures are not necessarily permanent, this approach requires ongoing monitoring and control. Even the desired level of hazard reduction, however, is likely to cost several thousand dollars. When properties are deteriorated from lack of maintenance, extensive repair may be a necessary precondition. Thus hazard reduction can be prohibitively expensive for a low-income owner-occupant or for the owner of a low-income rental property whose cash flow barely covers current costs.

The Health Department's own crews are able to do emergency hazard control in a few properties per month. Under its "order and bill" authority, the department can have an abatement contractor do hazard control work (for which it then attempts to reclaim the cost from the owner); until 2002 this authority was seldom used. For several years very limited financial assistance, primarily through HUD grants, was available for hazard reduction. Most of it was targeted to low-income owner-occupants.

As of February 2002, there were 1,405 properties with outstanding lead violations—636 rental units and 769 owner-occupied houses. About 2,100 children under age 6 were believed to be living in these properties, which are highly concentrated in the poorest neighborhoods of North Central and West Philadelphia. On average, violations are found in 36 new addresses each month.

Renewed Commitment

Recently the lead-poisoning danger to Philadelphia children has engendered an unprecedented level of public concern and political pressure. In the FY 2003 budget hearings, the Health Commissioner was questioned about the adequacy of CLPPP's lead hazard control services. Program capacity had been far less than would be needed to correct new violations found each month and ultimately eliminate the backlog of outstanding violations. The administration agreed to reallocate funds to make possible a large increase in the number of abatement crews. It directed city departments to work together in addressing the various facets of the problem. In close consultation with the Health Department, the Managing Director's Office/Adult Services (AS), Office of Emergency Shelter and Services (OESS), Department of Licenses and Inspections (L&I), Department of Human Services (DHS), and City Solicitor's office—as well as OHCD, PHDC and PHA—framed a concerted strategy for bringing properties with lead violations into compliance. The Health Commissioner convened two inter-departmental teams, including representatives of all these agencies, which meet regularly to develop plans and monitor progress. With greater speed than normal procurement procedures allow, six experienced private lead abatement contractors were hired. Thanks to the cooperation of Municipal Court, a special Lead Court was established to deal with rental-property owners who ignore Health Department orders. For owner-occupied houses that need system repairs (such as structural repairs or a new roof) before abatement, the repair work is done either by PHA (which the Health Department

reimburses) or through PHDC's Basic Systems Repair Program. Arrangements were made to relocate families temporarily in furnished, lead-safe apartments or in motels while hazard control work was done in their homes. Facing serious legal sanctions, many previously uncooperative landlords took steps to bring their properties into compliance. By December 2004 the backlog of more than 1,400 outstanding violations had already been reduced to less than 500, most of which had no children present; no new cases were added to the backlog.

In 2003, the Health Department obtained compliance with lead hazard abatement orders in 626 homes through a combination of increased enforcement and the availability of limited grant funding. More than 800 children resided in those homes and 733 had elevated blood lead levels. Last year the department was awarded a Lead-Based Paint Hazard Reduction Demonstration Grant.

In 2004, 424 houses were brought into compliance, with 624 children associated with these homes. The number of children with elevated blood lead levels was reduced to 552.

Since receiving approval to start work in February 2004, the department has completed remediation in 142 homes. More than 500 applications have been received for the grant. In addition, the department is a partner with the Commonwealth of Pennsylvania's Lead Hazard Control Project. Since that Project began in April 2004, the department has completed 35 properties and expects to complete the remainder by May 2005.

Primary Prevention

The Residential Lead-Based Paint Reduction Act of 1992, known as "Title X, " established a policy of primary prevention—eliminating lead hazards in the country's housing stock rather than responding when children have already been harmed. Consistent with federal policy, the City has attempted to develop strategies and incentives which reduce children's exposure to lead before they become lead-poisoned. An early step in this direction was a "disclosure" ordinance passed by City Council in 1995 in anticipation of the federal disclosure regulations later mandated by Title X. This ordinance gave consumers the right to obtain information about the lead safety of a residential property before buying or leasing it. The Health Department's "Lead Safe Babies" Program provides outreach and education to new mothers and pregnant women. CLPPP workers identify potential hazards in homes and attempt to correct them. Under a new Title X regulation which finally took effect in FY 2001, steps must be taken to reduce lead hazards in almost all housing that receives HUD federal assistance—regardless of the status of current residents. Significant attention must now be given to lead hazard control in virtually all the City's housing repair, rehabilitation, acquisition and rental assistance activities. The required level of intervention varies depending on the type of program and the amount of federal rehabilitation funding or rental assistance per unit.

In addition, under a local consent decree, lead hazard control work is required in all vacant properties to be sold by HUD as a result of FHA mortgage default. The Health Department is under contract with the local HUD office to inspect and clear this work.

In all of its housing rehabilitation programs which create new housing units, the City requires that properties be made lead-safe. Wipe tests are required. Through the Neighborhood-Based Homeownership, Neighborhood-Based Rental, Large Scale New Construction, Homestart and Homeownership Rehabilitation Programs, approximately 500 new lead- safe or lead-free units are created annually.

Citizen Comments

Citizen Participation Plan

The Office of Housing and Community Development (OHCD) believes that citizen participation and planning are central to the success of neighborhood revitalization efforts. Because of limited resources, government's direct impact on a neighborhood will always fall short of its needs. A neighborhood revives when its residents are confident that it can improve. Residents then

contribute their time, energy and finances to the process. Such confidence will grow from direct involvement in revitalization programs sponsored by government and the private sector. Accordingly, OHCD proposes to implement the following citizen participation plan as part of its *Consolidated Plan.*

Adoption and Implementation of the Citizen Participation Plan

This amended Citizen Participation Plan was printed and made available for public comment. Advertisements notifying the public of its availability were placed in three local newspapers (the *Philadelphia Inquirer, Tribune* and *Al Dia*). In addition, notices of the availability of the amended Citizen Participation Plan were sent to all community groups, individuals, community development corporations (CDCs) and others who are on OHCD's mailing list. Copies were made available at public libraries and from OHCD.

■ Encouragement of Citizen Participation

OHCD encourages citizen participation in its housing and community development program in a variety of ways. It funds a network of neighborhood advisory committees (NACs) to serve residents of low- and moderate-income areas by coordinating City services, conducting block surveys, promoting CDBG-funded programs, preparing neighborhood plans, and commenting on proposed housing and community development projects. Similarly, the Commerce Department funds neighborhood-based business associations located in key target areas for investment.

OHCD further promotes citizen involvement in its program by printing an external newsletter highlighting program accomplishments and community activities, which is widely distributed to civic associations, CDCs, and community residents. In addition, public hearings will be held as described below and a *Proposed Consolidated Plan* published in order to elicit public input and comment.

As required, OHCD will take appropriate actions to encourage the participation of all residents, including low- and moderate-income persons, particularly those living in blighted areas and in areas where CDBG funds are proposed to be used, and of residents of predominantly low- and moderate-income neighbor-hoods, minorities and non-English speaking persons, as well as persons with disabilities.

OHCD, in conjunction with Philadelphia Housing Authority (PHA), will encourage the participation of residents of public and assisted housing develop-ments in the process of developing and implementing the *Consolidated Plan*, along with other low-income residents of targeted revitalization areas in which the developments are located. OHCD will make an effort to provide information to PHA about *Consolidated Plan* activities related to its developments and surrounding communities so that PHA can make this information available at the annual public hearing required under the Comprehensive Grant program.

Access to Meetings

OHCD will provide at least two weeks' notice of public hearings and public meetings which are part of the consolidated planning process. At least one of any series of hearings or meetings will be held at a location which is accessible to physically disabled persons.

Access to Information

OHCD is committed to providing citizens, community organizations, public agencies and other interested parties with the opportunity to review information and records relating to the *Consolidated Plan* and OHCD's use of assistance under the programs. Individuals and groups may also comment upon any proposed submission concerning the amount of funds available including the estimated amount proposed to benefit very low-, low- and moderate-income residents. Access will be provided to information about any plan which results in displacement. Any such plan will include strategies to minimize displacement and to assist those displaced as a result of these activities, specifying the types and levels of assistance the city will make available even if the City expects no displacement to occur. Citizens and citizen groups will have access to public records for at least five years, as required by regulation.

Preliminary Consolidated Plan

OHCD will publish annually a *Preliminary Consolidated Plan* for citizen review and comment. The contents of the *Preliminary Plan* will be briefly summarized and its availability advertised in the local newspapers indicated above, as required by regulation. Copies of the *Preliminary Plan* will be made available to citizens at public libraries and directly from OHCD.

OHCD will provide a period for public comment of not less than 30 days following the publication of the *Preliminary Plan*. During this period at least one public hearing will be held in order to obtain citizen input into the consolidated planning process. Two weeks' notice will be given before holding public hearings on the *Preliminary Plan*.

Proposed Consolidated Plan

Following the 30-day period for public review and comment on the *Preliminary Plan*, OHCD will issue a *Proposed Consolidated Plan*. This document, which will incorporate citizen input obtained during the comment period on the *Preliminary Plan*, will be submitted to the Philadelphia City Council as part of the ordinance which authorizes the City to apply for CDBG, HOME and other funding. During City Council review, a public hearing on the ordinance and plan as submitted will be held prior to its adoption. The public hearing on the ordinance and plan will be scheduled by City Council, which provides in its own rules that at least five days' notice be provided before holding a public hearing.

Public Hearings

OHCD will hold at least two public hearings a year to obtain citizens' views and to respond to proposals and questions. At least one hearing will be held prior to publishing the *Preliminary Consolidated Plan* to address housing and community development needs and to review past program performance. At least one hearing to address the development of proposed activities will take place after publishing the *Preliminary Consolidated Plan* and prior to the submission of the *Proposed Consolidated Plan* to City Council. In addition, City Council will schedule a public hearing on the *Proposed Consolidated Plan* as part of its adoption of the ordinance which authorizes the City to apply for funding.

As described above, adequate advance notice will be given for each hearing, with sufficient information published about the subject matter of the hearing to permit informed comment. Hearings will be held at times and places convenient to actual and potential beneficiaries and which are accessible to persons with disabilities. Upon request, OHCD will provide translators for public hearings where a significant number of non-English speaking residents can be reasonably expected to participate.

Comments and Complaints

OHCD will consider all citizen comments on the *Preliminary* and *Proposed Consolidated Plan,* any amendments and the annual performance report which are received in writing or orally at public hearings. A summary of these comments and a summary of any comments or views not accepted and the responses will be attached to the final *Consolidated Plan,* any amendments and annual performance report.

OHCD will notify citizens of the availability of the *Consolidated Plan* as adopted, any amendments, and its annual performance report, to afford a reasonable opportunity to review the documents. The materials will be available in a form accessible to persons with disabilities upon request.

Where practicable, OHCD will provide a written answer to complaints and grievances within 15 working days. If not practicable, OHCD and delegate agencies will respond within 15 days, stating the reasons for the delay.

■ Technical Assistance

OHCD participates in a structured program of technical assistance to help neighborhood-based organizations and other groups representative of persons of low- and moderate-income participate in housing and community development. This program of technical assistance may include information about programs covered by the *Consolidated Plan* and how to prepare proposals for funding. In addition, OHCD funds citizen participation in income-eligible areas of the City through the NACs and similar community-based non-profit organizations.

■ Amendment Policy

Under federal and local regulations, recipients of CDBG, HOME, ESG and HOPWA funds are required to develop criteria to guide them when the *Consolidated Plan* should be amended. The City realizes these requirements ensure that the public is informed of decisions that would affect them and give citizens adequate opportunities for participation. In complying with these regulations, it is the policy of the City of Philadelphia to amend its *Consolidated Plan* whenever there is a substantial change in an activity. This is done by publishing the proposed changes in a newspaper of general circulation to allow for citizen review and input.

To meet federal requirements, "activity" is generally defined as*:*

- a specific contract to provide housing, technical assistance, counseling, economic development or other eligible activities/services in a specific area or to specific beneficiaries, and
- a budget line if there is a citywide or non-area specific benefit.

■ Consolidated Plan Amendment Guidelines

In compliance with federal requirements, Philadelphia will amend its *Consolidated Plan* when:

- the City decides not to carry out an activity originally described in the *Consolidated Plan;*
- the City decides to carry out a new activity or an activity not specifically identified in the *Consolidated Plan;*
- there is a substantial change in the purpose of an activity, that is, a change in the type of activity or its ultimate objective. For example, an amendment would be required if a construction project originally designed to be residential is ultimately proposed to be commercial;
- there is a substantial change in the scope of an activity, for example, a funding change of 25 percent more or less than the original amount of the activity, unless the OHCD Director determines that the budget change is not substantial. Another example is a 25 percent change, more or less, in the number of units being produced;
- there is a substantial change in the location of an activity, the neighborhood of the activity is changed from the community originally proposed. For the purpose of conformity, the boundaries of the "OHCD Map of Neighborhoods" in the Appendix of the *Consolidated Plan* will be used to delineate neighborhoods;
- there is a substantial change in the proposed beneficiaries, for example:
  – a change in beneficiaries' income level from very low and low to moderate;
  – a change in the area benefit; and
  – a change in the limited clientele, if that is the activity's basis.

Other situations could also arise that involve a substantial change to a proposed activity. In such cases, the City will amend its *Consolidated Plan* to ensure that citizens are informed of proposed changes and to allow for public input.

Whenever an amendment to the *Consolidated Plan* is proposed, the City will publish it in a newspaper of general circulation. A minimum of 30 days will be provided for public comment in writing or by phone. The newspaper notice will indicate that if no comments are received, the City will proceed with adoption of the amendment without further notification. The notice will also state that the public may receive a copy of the finalized amendment upon request.

If comments are received, they will be considered before adopting the amendment. If the City deems appropriate, it will modify the proposed amendment.

The City will submit a description of the adopted amendments to HUD. If comments are received, the City will publish notification of the finalized amendment in a newspaper of general circulation. This notification will provide the substance of the proposed change and will state that the public may receive a copy of the adopted amendment upon request.

Local regulations additionally require that the CDBG Plan (now part of the *Consolidated Plan*) must be amended when the City proposes any change or changes that alone or in combination

with previous changes amount to 10 percent or more in their cumulative effect on the allocation of any year's CDBG program funds. This may occur when the City proposes to use the funds to undertake one or more new activities or proposes to alter the stated purpose, location or class of beneficiaries of previously authorized activities. In this situation, the City will mail notification of the proposed amendment to all community organizations, publish the proposed amendment in a newspaper of general circulation and provide the public with at least two weeks to review the proposed change. The newspaper notice will indicate that if City Council adopts the amendment in the form of a resolution as submitted, it will be adopted without further notification. The notice will also state that the public may receive a copy of the final resolution (amendment) upon request.

After the two-week period expires, a public hearing will be scheduled to allow for citizen participation. If the amendment is approved by City Council as submitted, it will be adopted after the hearing. If the hearing results in a revision that is ultimately adopted by City Council, the City will publish notification of the revised amendment in a newspaper of general circulation. This notification will provide the substance of the proposed change and will state that the public may receive a copy of the finalized amendment upon request.

The City will submit a description of the adopted changes to HUD.

■ Cancellation of a Proposed Amendment

If the City decides not to finalize a proposed amendment, it will advertise its intention to cancel the proposed amendment in a newspaper of general circulation.

Leveraging Resources

Leveraging Resources

OHDC financing for rental projects has generated equity investment through the utilization of the Low-Income Housing Tax Credit (LIHTC) by corporations and equity funds such as the National Equity Fund (NEF). Additional private funds have been leveraged through use of the Pennsylvania Housing Finance Agency (PHFA) PennHOMES Program which provides permanent financing for the development of rental projects.

During Year 30, in order to maximize private-sector investment in low-income subsidized housing, OHCD promoted private sector funding commitments with the following:

- Equity Investment in Low-Income Tax Credit Ventures
- Private sector support for CDC operations and working capital
- Mortgages for First-time Home Buyers; and
- Bank financing for rental rehabilitation

During Year 30, the City using $15.9 million of CDBG funds leveraged $96.0 million of additional investment from private sources. This investment provided for the development of 713 units of rental housing.

Continuum of Care

Continuum of Care Narrative - Overview

Philadelphia's Continuum of Care System began to take shape in the early 1990s as a result of coordinated action by homeless service providers, government officials, formerly homeless persons, homeless advocates, religious leaders, the business community, the local United Way and local foundations. The fundamental components of the Continuum of Care System are:

- Homelessness prevention services and activities;
- A system of street outreach and assessment for determining the needs and conditions of an individual or family who is homeless;
- Emergency shelters with appropriate supportive services to help ensure that homeless individuals and families receive adequate emergency shelter and referral to necessary service or housing providers;
- Transitional housing with appropriate supportive services to help those homeless individuals and families who are not yet prepared to make the transition to permanent supportive housing and/or independent living;
- Permanent housing, and permanent supportive housing, to meet the long-term needs of homeless individuals and families; and,
- A comprehensive array of supportive services.

The Lead Entity for the Planning Process

Based on needs identified and outlined in Philadelphia's Consolidated Plan, the Continuum of Care Strategy is developed through a City-wide process involving government officials, homeless housing / services providers, formerly homeless persons, homeless advocates, religious leaders, the business community, neighborhood groups, academia, the local United Way and local foundations. As a result of the large number of participants within Philadelphia's Continuum of Care, a lead entity is necessary to organize, structure and oversee the Planning Process. The lead entity for the Philadelphia Continuum of Care Process in Year 28 was the Office of Housing and Community Development (OHCD). OHCD has been responsible for the McKinney *Consolidated Application* since 1996 when the option of a consolidated submission was initially offered to localities.

Philadelphia's Continuum of Care Planning Structure

The course of the most recent phase of the Continuum is molded by three factors: the document "Our Way Home: A Blueprint to End Homelessness in Philadelphia"; the legislative consequences of the Sidewalk Behavior Ordinance; and, the opportunities arising due to the new Mayoral administration. These components shape the Continuum's priorities, establish goals within reasonable time frames, and guide the Continuum through its course of actions.

The responsibilities of implementing these factors and ensuring further improvement and coordination within the Continuum is shared by entities involved in the Planning Structure: the municipal government; the homeless housing / services and advocacy communities; and, the coordinated efforts of past and present coalitions formed to assist the homeless. History has repeatedly shown that Philadelphia has made the most progress in combating homelessness when organizations within the Planning Structure work together in a collaborative manner toward shared goals.

Primary goals of the Philadelphia Continuum of Care Planning Structure are: to increase the ability of the Philadelphia homeless housing / services community to secure funding to support their efforts; to maintain established, successful housing and services models for the homeless; to decrease the duplication of services; and, to encourage solutions to ending homelessness.

Vision for Combating Homelessness

The vision for combating homelessness in Philadelphia as outlined in "The Blueprint" began through information gathering and consensus building toward a shared aspiration of:

• *Ending homelessness in Philadelphia, ensuring that every person and family has a safe, decent and affordable place to live, and a chance to achieve self-esteem as a productive member of the community.*

Specific goals and strategies have been identified for five major elements of homelessness in Philadelphia.

1) Homelessness Prevention - increase the number of persons served by community-based and other prevention programs; sustain the success rate of the Community-Based Homelessness

Prevention centers, ensuring that all clients receive a full range of services; decrease the number of persons using the City's shelter system.

2) Solutions for Those on the Streets - reduce the number of persons living on the streets through enhanced street outreach and referral; and local implementation of the Housing First Model.

3) Shelter and Services - strengthen front line intake and assessment to maximize placement into appropriate settings; cut the recidivism rate for shelter usage; improve basic quality, standards and provision of case management at all shelters and residences.

4) Housing - improve the appropriateness of housing placements; increase the number of homeless households receiving permanent housing assistance and expand the stock of affordable housing for low- and very low-income households.

5) Employment - provide job readiness and job placement services to place homeless adults into jobs or opportunities leading to employment.

The City of Philadelphia supports the development and provision of housing for homeless individuals and families, and has established as its first priority, a strategy to end chronic homelessness by the Year 2010 and the provision of permanent housing for persons/families with behavioral health disabilities (serious mental illness, substance abuse and co-occurring disabilities). The development and provision of transitional housing for homeless households remains the second priority. These priorities support the public / private efforts embraced by the coalitions addressing homeless housing / services needs. Expanding the supply of homeless supported housing units will assist homeless Philadelphians to transition through the City's Continuum of Care System. The Continuum of Care System supports a variety of supportive services, job development/training and housing resources to enable homeless persons to achieve greater self-sufficiency and self-determination with dignity.22

In the past year, Philadelphia completed the lease up of all 70 of our "Home First" project units awarded under the U.S. Interagency Council Collaborative Initiative to Help End Chronic Homelessness. Home First targets chronically homeless individuals with the longest shelter history. With this achievement, combined 550 years of homelessness are ended. This year we also opened a Safe Haven to serve five couples from the streets; further developed our VA partnership to better serve chronic homeless individuals who served our country, and as a result opened a transitional program for homeless women veterans; implemented an enhanced street outreach initiative to better understand and aggressively engage individuals living in the Ben Franklin Parkway area of our downtown; and partnered with a faith-based organization, Chosen 300 Ministries, to move their feeding program off the Ben Franklin Parkway and into a dignified setting indoors.

We continue to rely on the service and data utilization strategies that have served as well in the past including the citywide 24-hour hotline for citizens to alert outreach to individuals they have seen on the streets and to request an outreach team response; targeted street outreach; weekly and quarterly street counts; winter "Code Blue" and summer "Code Red" responses that save lives; and regular outreach team meetings to share information and improve our approach.

In the area of policy, we continue to travel to other cities to learn from others as well as teach them about our efforts and success in Philadelphia. Thanks to the support of a Councilperson who is a leader in our city for the poor, we coordinated a day-long City Council public hearing to bring attention to our work. We participate in the U.S. Conference of Mayor's Covenant and the Rockefeller Foundation partnership. We expect that our ten-year plan to end homelessness, "Creating Homes, Strengthening Communities and Improving Systems", will help us educate the broader public about the needs of homeless individuals and attract added resources.

The primary obstacle to ending chronic homelessness in Philadelphia is the scarcity of resources to house chronic homeless individuals: there are 750 individuals who meet the chronic homeless definition in our city today. The 52 new units for chronically homeless individuals funded in last year's competition and the additional 60 units requested this year are not enough to fully address the needs of Philadelphia's citizens who are still experiencing chronic homelessness.

The number of persons experiencing chronic homelessness in Philadelphia at a point-in-time dropped by 140 persons, or 22%, from 2004 to 2005. This drop is largely attributable to the success of our two programs that target housing and services to this population, New Keys and Home First. Together these programs offer 130 units of housing with Assertive Community Treatment services to persons considered chronically homeless who are in shelter or on our streets.

Current Chronic Homelessness Strategy

Philadelphia's strategy for ending chronic homelessness for the 5600 sheltered and 150 unsheltered homeless individuals who are not yet permanently housed is three-fold: (1) increase the availability and accessibility of permanent housing options; (2) increase appropriate service access and utilization by those who are chronically homeless; and (3) research and implement, to the extent feasible, new options to address the needs of hard-to-reach populations.

On a day-to-day basis, Philadelphia will continue to implement the service and data management strategies that have served us sol well over the past several years. Philadelphia's Outreach Coordination Center (OCC) has operated since 1998. Street outreach is provided nearly 24-hours a day, seven days a week, utilizing non-profit organizations each experienced in working with a segment of the street population (i.e. peer outreach, outreach targeted at substance abusers, outreach targeted at dual diagnosed individuals) and centrally coordinated through the OCC. Each year through the OCC, outreach teams make over 3,800 unduplicated contracts with individuals on the streets. The OCC also manages a hotline for concerned citizens to request outreach to individuals seen on the streets who may need assistance, maintains a database of all persons contacted by the tems, and coordinates quarterly street counts.

Our emphasis on collecting and utilizing data enables us to move forward strategically. In addition to quarterly Occ-coordinated street counts in North and West Philadelphia as well as Center City, the Police Department's Homeless Detail conducts a weekly street count in Center City. Locations of homeless individuals are mapped, and techniques and strategies to help people move off the streets are discussed at monthly outreach meetings. Data matching across the OCC, emergency shelter, and behavioral health systems help us identify the number of chronically homeless individuals, the extent of their disabilities, and their service utilization patterns so that suitable programs and approaches are developed to help end their homelessness.

Efforts to help chronic homeless individuals off the streets are stepped up every winter. In "Code Blue" conditions (wind chills below 20 degrees F or precipitation with temperatures below 32 degrees F), outreach teams are mobilized around the clock to assist individuals living on the street in coming indoors. The assistance of the Homeless Detail, a police unit dedicate to supporting the OCC, is requested when an individual refuses shelter and endangers him-or herself by remaining outdoors. Additional shelter space opens, including at Recreation Centers if needed. In at least the past three years no person experiencing street homelessness has died as a result of exposure to the elements in Philadelphia.

As part of their regular efforts, outreach workers engage individuals, provide for their basic needs, and help them access mainstream benefits. They also encourage people to come in to a shelter, Safe Haven, or other appropriate housing configuration where the OCC has direct, 24-hour access to beds. Philadelphia's outreach workers also serve as case managers for chronically homeless individuals on the street and continue to follow them as needed when they are placed in a residential setting. Currently are at least 1,100 emergency shelter beds for single individuals, up to 145 Safe Haven beds, 5 community-based crisis response centers, 300 facilities and private practitioners that provide services to low-income citizens with behavioral health needs, and almost 1,900 specialized mental health residential placements and housing supports. This past year, the City opened a Safe Haven that can serve up to five couples who are living on the streets and want to be placed together if they are to come indoors. This year's McKinney application proposes to add 60 housing first units to this inventory of residential resources for chronically homeless individuals.

In 2002, seeking strategies to respond to the needs of the most challenging individuals living on the streets, Philadelphia implemented the new Keys program which uses the housing first model to provide permanent supportive housing and intensive Assertive Community Treatment Team services for 60 chronically street homeless individuals. A year later we implemented Home First, another housing first program with slots for 80 chronically homeless individuals with the longest shelter histories. Both are leased up and both are in the process of approval for Medicaid reimbursement for services so that all of the programs' dollars that could be used for housing, are- and the services needs are funded though mainstream systems. As long as needed we will expand our housing first unit capacity through leveraging McKinney housing funding with services dollars provided through Medicaid or other mainstream sources.

We will continue to participate in national collaborations such as the U.S. Conference of Mayors Covenant, which allows representatives from cities all over the country to share data, best practices, successes, and challenges as we together work to end chronic homelessness in our cities. We will continue to consult researchers and practitioners who have developed and implemented evidence-based approaches, and measure our own progress regularly and critically.

Self-Evaluation

Self Assessment Report

Each year the Office of Housing and Community Development undertakes a self-assessment, as part of the Consolidated Annual Performance and Evaluation Report (CAPER). OHCD welcomes the opportunity to provide this self-assessment of the housing and community development programs carried out by the City of Philadelphia in fiscal year 2005. The partnerships the City has formed with HUD, Major Delegate Agencies and other developers have contributed to a stellar year for the City in terms of production of affordable housing. As the following charts illustrate, the City has met or exceeded all its goals for housing production.

The following tables and narrative are based on Tables III.1, III.2, III.3 and III.4 in the Strategic Plan section of the *Year 30 Consolidated Plan.* These tables proposed accomplishments in the areas of Rental Housing, Homeownership Housing, Homeless Needs Housing and Special Needs Housing for Fiscal Years 2004, 2005 and 2006.

Households Assisted with Rental Housing (Based on Table III.1)

Households Assisted in Fiscal Year 2005	Proposed in Year 30 *Consolidated Plan*	Actual
Rental Housing (including Neighborhood Rental and new construction, elderly, Mend II and Tenant-Based Rental Assistance.)	1,202	2,288

The City's rental housing program was again successful, exceeding its goal.

The Neighborhood-Based Rental program produced 713 new units during 2005. Tenant Based Rental Assistance supported 1,575 households through a combination of HOME, HOPWA, City general funds, and Shelter Plus Care funding. These totals include 652 households that are affected by HIV/AIDS.

Households Assisted with Homeownership Units (Based on Table III.2)

	Proposed in Year 30	

Households Assisted in Fiscal Year 2005	*Consolidated Plan*	Actual
Includes CDC, Homeownership Rehabilitation Program, HRP, Homestart, Home Preservation Programs (including BSRP, Adaptive Modification, SHARP, Weatherization, UESF Grants, PHIL Loans) and Settlement Grants	12,100	13,300

The City met its goal in the area of homeownership housing during Year 30. Rehabilitated and new construction units sponsored by Community Development Corporations and the Philadelphia Housing Development Corporation (PHDC) through its Homestart and HRP program totaled 70 new or rehabilitated units. Settlement Grants were provided to 954 first-time homebuyers. Homeownership Preservation programs including PHDC's Basic Systems Repair Program, Heater Hotline, Weatherization and UESF grants provided 12,108 homeowners with emergency or more substantial repairs and energy assistance to their homes. The Redevelopment Authority's PHIL Loan program provided 168 home improvement loans to low- and moderate-income homeowners during the year.

Accomplishments: Homelessness (Based on Table III.3)

Households Assisted in Fiscal Year 2005	Proposed in Year 30 *Consolidated Plan*	Actual
Outreach/Assessment	4,971	4,971
Emergency Shelter	2,899	2899
Transitional Housing	553	553
Permanent Housing	250	250

During Year 30 in the area of Homelessness housing, the City met its goals by providing outreach and assessment counseling to 4,971 households. The goals for transitional housing to households 553 units; and permanent housing 250 units, were also met during that period.

Accomplishments: Special Needs (Based on Table III.4)

Households Assisted in Fiscal Year 2005	Proposed in Year 30 *Consolidated Plan*	Actual
HIV/AIDS, including Emergency Payments to Prevent Homelessness and Persons served in Site-Based Housing Facilities and HOPWA funded Rental Assistance.	900	1,677
Elderly	80	80
Substance Abuse	0	0
Persons with Disabilities	155	155

In the area of HIV/AIDS housing, the City achieved its goal, providing 190 HOPWA-funded emergency grants, assisting 56 households in site-based facilities and assisting 567 households with tenant-based rental assistance using HOPWA funding. An additional 85 units received rental assistance and 779 households received short term/emergency housing payments through other funding.

As the production charts show, the City has met its overall goals for housing production during Year 30. Through constructive partnerships with the Redevelopment Authority, Philadelphia Housing Development Corporation and a variety of community development corporations, the City continues to provide units of affordable housing.

Housing Opportunities for Persons with AIDS (HOPWA)

Name of HOPWA Grantee: Philadelphia

Report covers the period: 7/1/2004 to 6/30/2005

Performance Chart 1 – Actual Performance.
Types of Housing Units Dedicated to Persons with HIV/AIDS which were Supported during the Operating Year

Type of Unit:	Number of units with HOPWA funds	Amount of HOPWA funds	Number of units with Grantee and other funds	Amount of Grantee and other funds	Deduction for units reported in more than one column	TOTAL by type of unit
1. Rental Assistance	567	3,708,032	85	600,000	0	652
2. Short-term/emergency housing payments	190	192,213	779	501,377	0	969
3-a. Units in facilities supported with operating costs	56	673,720	0	0	0	56
3-b. Units in facilities that were developed with capital costs and opened and served clients	19	846,152	0	0	0	19
3-c. Units in facilities being developed with capital costs but not yet opened	0	0	0	0	0	8
Subtotal	832	5,420,117	864	1,101,377	0	1,696
Deduction for units reported in more than one category	0	0	0	0	0	0
TOTAL	832	5,420,117	864	1,101,377	0	1,696

Name of HOPWA Grantee: Philadelphia

Report covers the period: 7/1/2004 to 6/30/2005

Performance Chart 2 – Comparison of Planned Actions, as approved in the Action Plan, Consolidated Plan for this Operating Year (Estimated Number of Units).

Type of Unit:	Estimated Number of Units by type in the approved Consolidated Plan/Action Plan for this operating year	Comment, on comparison with actual accomplishments (or attach)
1. Rental Assistance	Types of units were not broken out separately in Con Plan	
2. Short-term or emergency housing payments	Types of units were not broken out separately in Con Plan	
3-a. Units in facilities supported with operating costs	Types of units were not broken out separately in Con Plan	
3-b. Units in facilities that were developed with capital costs and opened and served clients	Types of units were not broken out separately in Con Plan	
3-c. Units in facilities being developed with capital costs but not yet opened	Types of units were not broken out separately in Con Plan	
Subtotal	900	
Deduction for units reported in more than one category	0	
TOTAL	900	

Community Economic Development

Philadelphia Industrial Development Corporation (PIDC)
PIDC will create low and moderate income employment opportunities (at least 51 percent of the created and/or retained employment opportunities will be available for low and moderate income people), retain and expand the retail base to provide retail goods and services to neighborhoods, assist in the prevention or elimination of slums or blight, and stimulate investment in economic development activity in the City, the generation of tax ratables throughout the City and investment by savings and loans and other lending institutions.

The North Philadelphia and he Enterprise Zone Development Loan Program is a special economic development program that provides low interest funds to businesses located in any of the City's officially designated Enterprise zones: American Street and Hunting Park.

> Three projects settled under this activity in this period. Total loan amount of $575,000 and 66 new jobs anticipated.

The Mortgage Loan Program provides low interest second mortgage financing for business expansion in the City. Combined with private financing, this revolving loan pool contributes to the necessary capital to complete private business expansion that could not occur through private financial markets.

Twelve (12) projects settled during the period. Total loan amount of $5,539,370. A total of 298 new jobs are expected of which 255 will be available to extremely low/low-moderate income persons. (See page CED-1a for details) For projects settled two years ago 343 jobs were created of which 227 were filled by extremely low/low-moderate income persons.

The Neighborhood Development Fund uses CDBG funds to undertake special activities by a local development corporation in accordance with federal regulations. PIDC-LDC shall provide assistance to private not for profit entities, including but not limited to grants, loans and technical assistance, and other activity necessary or appropriate to carry out economic development projects.

No projects settled under this activity in this period.

Philadelphia Commercial Development Corporation

Targeted Neighborhood Commercial Program

In order to assist the City of Philadelphia's Department of Commerce in the implementation of its economic strategy, the Philadelphia Commercial Development Corporation (PCDC) will work in thirty-eight designated low and moderate-income neighborhoods throughout the city. PCDC will provide direct assistance to for-profit businesses and non-profit organizations which act as key service providers and employers through the Targeted Neighborhood Commercial Area (TNCA) Program. The principal goal of the TNCA Program is to enable these businesses to remain and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate-income residents.

CDBG Mortgage Loan Program

Census Tract	Council District	Date Settled	Company	Loan Amount	Project Cost	Current Employment	Jobs to be created	Total	Available to Low/Mod
9	1	7/30/04	Washington Square Restaurant	500,000	2,149,409	0	85	85	78
293	7	9/2/04	APB Transportation	440,000	1,100,000	6	13	19	9
147	5	9/15/04	Beech Interplex	410,000	515,000	0	12	12	12
7	5	12/2/04	D.B Associates, Inc	574,370	3,450,000	15	45	60	41
57	2	12/7/04	XTL, Inc.	750,000	1,700,000	108	30	138	16
191	7	12/17/04	Philadelphia Pre-Cooked Steak	500,000	2,700,000	10	33	43	33
199	7	12/23/04	Cutler of Philadelphia, LLC	550,000	600,000	67	16	83	15
327	10	2/28/05	Discount Door Distributors, Inc.	420,000	1,050,000	5	12	17	8
360	10	3/28/05	I. Rice & Company	250,000	336,000	32	7	39	5
58	2	5/16/05	All City Transportation	720,000	1,800,000	12	28	40	23
57	2	5/25/05	Philadelphia Coffee Works, Inc.	125,000	315,000	3	5	8	3
321	6	5/9/05	Microcision, Inc. LLC	300,000	650,000	60	12	72	12
			TOTAL CDBG JOB CREATION	$5,539,370	$16,365,409	318	298	616	255

Loans to businesses that provide goods and services to benefit low and moderate neighborhoods

						Low/Mod Assisted Persons		
87	3	5/11/05	Supremo Foodmarket (Walnut Street)	$365,881	$1,830,000	44,818	8.16	Per low/mod person

SECTION 108 LOAN ACTIVITY

7	5	12/2/04	D.B Associates, Inc	1,040,630	3,450,000	Job information included with CDBG Loan		
240	8	12/20/04	Greater Germantown Housing Dev Corp	1,800,000	4,200,000	42	120	162	108
293	7	5/11/05	Supremo Foodmarket (Cecil Avenue)	1,042,557	2,205,000	37,595	27.73	Per low/mod person
87	3	5/11/05	Supremo Foodmarket (Walnut Street)	834,119	1,830,000	44,818	18.61	Per low/mod person
			TOTAL 108 LOAN ACTIVITY	$4,717,306	$11,685,000			

During the period there were 48 promotions and 210 business association meetings. There were 77 business openings and 51 closings. There were 163 instances of technical assistance provided. Businesses were referred to various City agencies for resolution of concerns with the delivery of City services.

For Profit Business Assistance Programs

Financial Assistance for Area Benefit Program

422 firms interested in financial assistance were contacted. 50 were interviewed. 8 feasibility studies were completed. 3 loans settled. Total loan amounts of 380,000. See page CED 2a for more detail.

Programs to Create Low/Moderate Income Employment Opportunities
253 firms interested in financial assistance were contacted. 20 were interviewed. 21 feasibility studies were prepared. 11 loans settled for a total of $1,525,700. 102.5 new jobs are anticipated of which 81.5 will be available to extremely low/low-moderate income persons. (See page CED 2a for detail) For projects settled in the last two years 171 jobs were created of which 133.5 were filled by extremely low/low-moderate income persons.

Small Business Commercial Improvement Program.
There were 34 grants for the period totaling $124,213.

Housing Contractors Program
Small contractors received loans totaling $1,897,666 used to renovate 94 housing units.

Enterprise Zones
The objective of the Enterprise Zone Program is to create and preserve employment opportunities for primarily low and moderate-income individuals. The organizations will recruit and refer businesses to the City Delegate Agencies for financial and technical assistance. The program will improve the ability of businesses to locate and expand in these business areas

American Street Enterprise Zone – The Lighthouse

Programs to Assist Businesses
During the period the Business Service Centers contacted 61 businesses, 47 firms were interviewed. Technical assistance was provided to 26 businesses and limited real estate technical assistance was provided to 14 businesses. 7 firms were given assistance with feasibility studies and business plans. 7 new businesses received rebates from the Business Rental Voucher Program.

Job Resource Centers
374 job applicants were screened.
2,488 companies were contacted (134 were new employers)
Job readiness seminars were held for 569 applicants
148 applicants were placed in jobs. 119 full time and 29 part time.
210 applicants were recruited for training or educational programs and 62 were placed in the programs.

PCDC Small Business Revolving Loan Fund (Year to Date Activity)

Settled	Company	Loan Amount	Project Cost	Jobs to be created	Available to Low/Mod	Low/Mod Assisted Persons	Public Benefit Ratio	
7/12/2004	CMJ Ventures, Inc. d/b/a Paddy Whacks	100,000	225,300	15	12		6,667	per assisted job
7/20/2004	Tastebuds Market LLC	125,000	670,650	8	5		15,625	per assisted job
9/28/2004	Makiman Sushi	60,000	253,500	4	3		15,000	per assisted job
10/5/2004	Independence Pizza, LLC	200,000	767,000	15	12		13,333	per assisted job
11/1/2004	Hamilton Village Marathon Grill Assoc	200,000	1,556,903	20	15		10,000	per assisted job
1/31/2005	Trantas Associates	200,000	400,000	9	7		22,222	per assisted job
3/18/2005	Avant Gardens	90,000	175,000	4	4		22,500	per assisted job
3/18/2005	Sweet Lucy's Smokehouse	150,000	458,200	7.5	7.5		20,000	per assisted job
4/22/2005	East of Independence, Inc.	100,000	480,000	5	4		20,000	per assisted job
6/22/2005	Hall Media Productions, Inc.	200,000	625,345	10	8		20,000	per assisted job
6/27/2005	Chef Ken's Café	100,000	150,000	5	4		20,000	per assisted job
	TOTALS	$1,525,000	$5,761,898	102.5	81.5			

provide goods and services to benefit low and moderate neighborhoods

6/11/2004	Apple Drugs, Inc. t/a The Apple Pharmacy	120,000	381,555		11,770	10.20	Per low/mod person
6/17/2004	Marisol' Image	20,000	30,953		33,549	1.68	Per low/mod person
7/1/2004	Torrence Insurance and Financial Services	100,000	325,000		22,790	4.39	Per low/mod person
3/24/2004	West Mills Publishing, Inc. t/a The Spirit Newspa	140,000	187,000		70,385	1.99	Per low/mod person
	TOTALS	$380,000	$924,508				

West Parkside Enterprise Zone – Parkside Association

Programs to Assist Businesses

During the period the Business Service Centers assisted 34 businesses for business expansion, recruited 26 new businesses in the area for membership in the Business Association of West Parkside (BAWP), hosted 31 Business Association meetings, attended 28 Business Services meetings.

Job Resource Centers

224 job applicants were screened.
Job readiness seminars were held for 224 applicants
47 applicants were placed in job positions.
49 applicants were placed in job training and/or educational enhancement programs.

Neighborhood Development Grant Program

Greater Germantown Housing Development Corporation developed commercial space at 5320 Germantown Avenue – GGHDC used the funding from the Commerce Department to complete construction of this mixed-use building. GGHDC has signed a commercial tenant to the commercial space. They have estimated that they will create at least 3 new positions, including a secretary, an office manager, and a para-legal

People for People Inc. renovated the basement and first floor of 800 N. Broad Street as a 14,340 SF daycare facility, which will accommodate 131 children. At least 25 jobs shall be created which shall be principally available to low and moderate-income persons.

Universal Community Homes is developing a neighborhood retail facility at 13th & Catharine Streets to provide quality products and convenient shopping for this low and moderate-income neighborhood. This business responds to a critical need in the community. Universal Community Homes owns the site and will own the business. A professional manager with experience will

operate the business. Universal's Business Support Center staff will provide overall management assistance during start-up. This project is expected to create 4 full time jobs and 4 part time jobs. 8 of the jobs will be available to low and moderate-income residents of Census Tract 18, an area where unemployment and poverty are extremely high.

Southwest Community Services Inc, is developing commercial space at 6350 Saybrook Street. At completion of Phase 1, the facility will accommodate a Neighborhood and Small Business Technical Support Incubator, a day Care Center and the agency's current social services programs. At least 9 jobs shall be created which shall be principally available to low and moderate-income persons.

Predevelopment Grants
The following organizations undertook pre-development activities:

- The Enterprise Center. TEC conducted a feasibility study of Philly Cooks, a Kitchen Incubator that will provide multiple health-inspected kitchens as well as assistance with attaining a business license. Low and moderate-income food entrepreneurs would be able to rent space within the facility and in turn grow their business and the economy.

- Pennsylvania Environmental Association. PEC is undertaking planning activities to redevelop Brownfield sites for new uses. Assistance provided to several organizations; WPFSI, AWF, North Delaware Riverfront, Philadelphia Chinatown CDC, People's Emergency Center, Frankford CDC, Project Home CDC, Roxborough CDC.

- The Enterprise Center. TEC is undertaking pre-development activities towards the development of "Enterprise Heights" at 4628 Market Street. Envisioned in four-phases, the completed project will contain 400,000 square feet of new and rehabilitated office, retail, green, parking and transit related space. It will be a new first-class, $75 million entrepreneurial campus, which will attract office tenants, retail and valuable financial and intellectual capital to West Philadelphia.

- Philadelphia Clef Club of Performing Arts. PCCPA is undertaking a planning study. This study will assess the organization's current operations and develop a marketing strategy for institutional growth and stabilization.

- Mount Airy USA. Mt. Airy undertook pre-development activities for the proposed development of 6614-24 Germantown Avenue that will provide commercial space that to house existing and new businesses.

- The Business Center. TBC is providing technical assistance and support towards small business development, which will create and retain low-and moderate-income employment opportunities and retain and expand retail goods and services to residents of low-and moderate-income neighborhoods. Technical assistance provided to 73 businesses.

- Uptown Entertainment and Development Corporation. UEDC is undertaking pre--development activities related to the restoration of the 2200 and 2300 Blocks of Broad Street into a multicultural heritage tourist attraction.

- Greater St. Matthew Community Development Corporation. GSMCDC undertook pre-development activities for the proposed development of a mixed use commercial and child-development/day care center at 2613-2619 Christian Street. This project will create at least 10 new jobs.

- New Kensington Community Development Corporation. NKCDC undertook a market study of Frankford Avenue from Delaware Avenue to Allegheny Avenue.

- Progress Trust Inc. PTI is undertaking pre-development activities of the development of Progress Plaza shopping center.

- The Food Trust is undertaking a market study to assess the economic potential for food related retail establishments in under served neighborhoods in Philadelphia.

- The Empowerment Group is launching the Philadelphia Entrepreneurship Project (PEP); an intensive hands-on business skills training program for entrepreneurs and small business owners in Philadelphia's distressed communities. TEC will target its training to the low-income, Latino communities of North and South Philadelphia. 71 businesses assisted.

The following organizations were awarded grants for pre-development activities:

- Childspace Cooperative Development, Inc. (CCDI) shall undertake a program designed for early education centers who serve low-income families. This customized, industry-centered business assistance program is designed to build financial skills and literacy among child care providers.

- GPUAC shall undertake a market and planning study for the development of a neighborhood study for the Brewerytown Area.

- IMPACT shall undertake a market and planning study for the development of a neighborhood study for the Kensington and Allegheny Area.

Special Services District Program
Grants were provided to the Partnership CDC in West Philadelphia, the Central Germantown Council in the Central Germantown Commercial District and Frankford CDC in the Frankford Commercial area to support Special Services including the cleaning of sidewalks, removal of graffiti, promotion of retailers among potential shoppers, as well as coordinating certain anti-crime efforts such as the sponsorship of a Police bike patrol.

Targeted Neighborhood Support Grant Activities
Neighborhood based organizations will undertake economic development activities designed to enhance employment opportunities, the majority of which will be available to low and moderate income residents; increase the availability of goods and services and promote cooperation between businesses, residents and government agencies on issues that effect the quality of life and business climate. Activities were undertaken in the following areas.

Central Germantown Commercial Area
In order to improve the quality of life, employment opportunities and entrepreneurial opportunities for low, very low and moderate-income individuals and neighborhoods, Central Germantown Council (CGC) shall undertake an economic development program which will assist in the revitalization of the Central Germantown Commercial District. In order to assist the city in the implementation of its economic strategy, CGC will work in the Central Germantown Commercial District. This commercial district serves the Germantown area which is a low to moderate income neighborhood. At least fifty-one percent of this area is inhabited by very low, low and moderate-income persons. CGC will provide direct assistance to for profit businesses and non-profit organizations which act as key service providers and employers in this area. The principal goals of this program is to enable businesses to remain and expand while providing needed goods, services and employment opportunities for low and moderate income residents.

Programs to Assist Businesses
During the period the technical assistance was given to 86 businesses.

Germantown and Lehigh Commercial Area
Greater Philadelphia Urban Affairs Coalition (GPUAC) will work in Germantown/Lehigh, a designated low and moderate-income neighborhood. GPUAC shall provide direct assistance to for-profit businesses and non-profit organizations which act as key service providers and employers in these areas. The principal goal of this program is to enable these businesses to remain and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate income residents to provide support services to the entire commercial area; and to expand the employment training and placement of central North Philadelphia residents.

Germantown/Lehigh - Job Resource Center
161 applicants were referred to employment
9 persons were hired.
22 persons were referred to education/GED/ Center for Literacy.

Cecil B. Moore Commercial Area
In order to assist the City in the implementation of its economic strategy, BEECH will continue to work in the Cecil B. Moore / North Broad / Girard Avenue commercial area, a designated low and moderate-income neighborhood. BEECH shall provide direct assistance to for-profit businesses and non-profit organizations that act as key service providers and employers in this area. The principal goal of this program is to enable these businesses to remain viable and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate-income residents.

Assistance provided to the Consortium of Cecil B. Moore Avenue Organizations. The most significant event was the announcement that Tower Investments had closed its deal with Beech Interplex, Inc and the Philadelphia Redevelopment Authority to develop the site at Broad Street and Cecil B. Moore Avenue. The project is called Avenue North. Tower will build a $20 million commercial development that will include retail stores and restaurants, and a seven-screen movie theater. 4 new businesses came into the community.

West Philadelphia
In order to assist the city in the implementation of its economic strategy, the Partnership CDC will work in a target area, a designated low and moderate-income neighborhood. The target area will incorporate the Market Street core from 40th to 60th Streets. Special attention will be given to key development locations on the 4000 - 4100 blocks of Market Street; 100 North 52nd to 800 South 52nd Streets; and the 5400 - 5500 blocks of Chester Avenue. Partnership CDC shall provide direct assistance to for-profit businesses and non-profit organizations which act as key service providers and employers in these areas. The principal goals of this program is to enable these businesses to remain and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate income residents.

27 businesses were given technical assistance, 19 firms were given limited technical assistance, 18 firms were given real estate technical assistance.

Frankford
The Frankford Community Development Corporation (FCDC), a neighborhood-based organization, will undertake economic development activities designed to enhance employment opportunities, the majority of which will be available to low and moderate income residents of the targeted neighborhood. FCDC will work with local businesses, the local business associations, and with the local neighborhood organizations, when appropriate, to aid in the stabilization and revitalization of the targeted low and moderate-income neighborhood. FCDC will deliver the services and carry out the activities which include the promotion of cooperation between businesses, residents, and government agencies on issues that affect quality of life and business climate (e.g., short dumping clean-ups, vandalism, illegal drugs sales and use, unemployment, etc.). CDC-FGM will work in concert with existing community and retail business associations and retail businesses located in the target area.

Programs to Assist Businesses
During the period reported the Business Service Center contacted 53 businesses, 35 firms were interviewed. 9 feasibility studies were prepared. 25 businesses were given technical assistance. Assistance was given to the business associations. 128 persons were screened for job opportunities,68 persons were placed in full-time or part time positions. 50 persons were placed in job training or educational and enhancement services.

South Philadelphia – West of Broad
In order to assist the city in the implementation of its economic strategy, Universal Community

Homes Corporation (UCHC) will work with the South Central Philadelphia commercial area, a designated low and moderate-income neighborhood. UCHC shall provide direct assistance to for-profit businesses and non-profit organizations which act as key service providers and employers in these areas. The principal goal of this program is to enable these businesses to remain and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate-income residents.

96 businesses were given technical assistance. 100 participated in educational workshops.

Lower Germantown
In order to assist the city in the implementation of its economic strategy, Greater Germantown Housing Development Corporation (GGHDC) will work in the lower Germantown/ Freedom Square commercial area, a designated low and moderate-income neighborhood. GGHDC shall provide direct assistance to for-profit businesses and non-profit organizations which act as key service providers and employers in these areas. The principal goals of this program is to enable these businesses to remain and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate income residents.

Technical assistance was provided to several businesses through area business associations and directly to 20 businesses. Rehabilitation of two commercial buildings continued. Rehabilitation of one building is completed.

North Fifth Street and Lehigh Avenue
In order to assist the city in the implementation of its economic strategy, the Hispanic Association of Contractors and Enterprises (HACE) will work in the Fifth and Lehigh commercial area, a designated low and moderate-income neighborhood. HACE shall provide direct assistance to for-profit businesses and non-profit organizations which act as key service providers and employers in this area. The principal goals of this program is to enable these businesses to remain and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate income residents.

Programs to Assist Businesses
154 of the businesses located in the commercial district were provided services. Assisted 7 merchants in issues related to nuisance properties and code violations. Facilitated two (2) SBA Community express loan program presentations. 58 merchants attended. Eleven (11) were approved for loans as a result of the workshops. Technical assistance given to 5 new businesses which opened in previously vacant structures. 42 businesses were given limited technical assistance.

North 22nd Street and Lehigh Avenue
Allegheny West Foundation (AWF) will undertake economic development activities designed to enhance employment opportunities. The target area is located along the 2600 to 3000 blocks of N. 22nd Street. AWF will carry out activities to promote cooperation between businesses, residents and government agencies on issues that affect the quality of life and business climate. AWF shall provide direct assistance to for-profit businesses and non-profit organizations which act as key service providers and employers in this area. The principal goals of this program is to enable these businesses to remain and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate income residents.

There were several activities to assist Business Associations, technical assistance to 12 businesses, and limited real estate technical assistance to 8 businesses. Loan packaging assistance was given to one (1) business.

Woodland Avenue
Southwest Community Development Corporation (SWCDC) will undertake economic development activities designed to enhance employment opportunities. The primary commercial area is the 6000 through 6300 blocks of Woodland Avenue. However, the target area will commence at 48th Street to 64th Street; a designated low and moderate-income neighborhood. SWCDC shall provide direct assistance to for-profit businesses and non-profit organizations,

which act as key service providers and employers in this area. The principal goal of this program is to enable these businesses to remain and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate-income residents.

There were several activities to assist the Woodland Avenue Revitalization Project board. Assisted in creating additional parking in area. Technical assistance to 5 businesses which resulted in the creation of 3 new jobs.

Fishtown – Kensington
New Kensington Community Development Corporation (NKCDC), a neighborhood- based organization shall undertake economic development activities designed to enhance employment opportunities, the majority of which will be available to low- and moderate-income residents of this targeted neighborhood. The primary commercial area is the 1200 through 3100 blocks of Frankford Avenue. However, the treatment area will include Frankford Avenue, commencing at Delaware Avenue to Allegheny Avenue, and the unit block through the 300 block of East Girard Avenue. The principal goals of this program is to enable these businesses to remain and to expand while providing needed goods, services and employment opportunities for Philadelphia's low and moderate income residents.

There were several activities to assist Business Associations, technical assistance to 46 businesses,

Economic Stimulus Program
Section 108 Loan Program
Four loans settled during the period. Total loan amount of $4,717,306. For one project 120 new jobs are expected of which 108 will be available to extremely low/low-moderate income persons. Two other projects provided assistance in low and moderate income neighborhoods. The fourth project created jobs included with the CDBG activity. See chart Section 108 Loan Activity above for details.

	Loans	Delivery and Admin.	Jobs or Low/Mod Assisted Persons	Public Benefit Ratio
Job Creation and S/B	$9,905,000.^{00}	$421,803.^{53}	500	$20,674.^{28} per job to be created
Low/Mod Assisted Persons	$2,622,557.^{00}	$442,608.^{94}	220,907	$13.^{88} per low mod assisted person

Financial Summary

Financial Summary
Grantee Performance Report
Community Development Block Grant Program

U.S. Department of Housing and Urban Development
Office of Community Planning and Development

OMB Approval No. 2506-0077 (Exp.3/31/94)

Public Reporting Burden for this collection of information is estimated to average 12 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Reports Management Officer, Office of Information Policies and Systems, U.S. Department of Housing and Urban Development, Washington, D.C. 20410-3600 and to the Office of Management and Budget, Paperwork Reduction Project (2506-0077), Washington, D.C. 20503. Do not send this completed form to either of these addressees.

1. Name of Grantee	2. Grant Number	3. Reporting Period
City of Philadelphia	B-04-MC-42-0012	From 7/1/04 To 6/30/05

Part I: Summary of CDBG Resources

1. Unexpended CDBG funds at end of previous reporting period (Balance from prior program years)			$ 94,505,992
2. Entitlement Grant from form HUD-7082			$ 63,067,000
3. Surplus Urban Renewal Funds			$ - 0 -
4. Section 108 Guaranteed Loan Funds (Principal Amount)			$ - 0 -
5. Program income received by:	Grantee (Column A)	Subrecipient (Column B)	
a. Revolving Funds	$	$ 7,853,718	
b. Other (Identify below. If more space is needed use an attachment)			
	$ 170,255	$ 2,601,761	
	$	$	
c. Total Program Income (Sum of columns a and b)			$ 10,625,734
6. Prior Period Adjustments (If column is a negative amount, enclose in brackets)			$ (34,937)
7. Total CDBG Funds available for use during this reporting period (sum of lines 1 through 6)			$ 168,163,789

Part II: Summary of CDBG Expenditures

8. Total expenditures reported on Activity Summary, forms HUD-4949.2 & 4949.2A		$ 66,846,309
9. Total expended for Planning & Administration, form HUD-4949.2	$ 10,708,591	
10. Amount subject to Low/Mod Benefit Calculation (line 8 minus line 9)	$ 56,137,718	
11. CDBG funds used for Section 108 principal & interest payments		$ 10,939,570
12. Total expenditures (line 8 plus line 11)		$ 77,785,879
13. Unexpended balance (line 7 minus line 12))		$ 90,377,910

Part III: Low/Mod Benefit This Reporting Period

14. Total Low/Mod credit for multi-unit housing expenditures from form HUD-4949.2A	$ 5,993,322
15. Total from all other activities qualifying as low/mod expenditures from forms HUD-4949.2 and 4949.2A	$ 50,119,396
16. Total (line 14 plus line 15)	$ 56,112,718
17. Percent benefit to low/mod persons (line 16 divided by line 10 this reporting period)	99.96 %

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Retain this record for 3 years.

form HUD-4949.3 (06/24/93)
ref Handbook 6510.2

Part IV: Low/Mod Benefit for Multi-Year Certifications (Complete only if certification period includes prior years)	
Program years (PY) covered in certification PY _____ PY _____ PY _____	
18. Cumulative net expenditures subject to program benefit calculation	$ N/A
19. Cumulative expenditures benefiting low/mod persons	$ N/A
20. Percent benefit to low/mod persons (line 19 divided by line 18)	N/A %
Part V: For Public Service (PS) Activities Only: Public Service Cap Calculation	
21. Total PS expenditures from column h, form HUD-4949.2A	$ 6,280,295
22. Total PS unliquidated obligations from column r, form HUD-4949.2A	$ 2,819,896
23. Sum of line 21 and line 22	$ 9,100,191
24. Total PS unliquidated obligations reported at the end of the previous reporting period	$ 2,569,564
25. Net obligations for public services (line 23 minus line 24)	$ 6,530,627
26. Amount of Program Income received in the preceding program year	$ 10,815,478
27. Entitlement Grant Amount (from line 2)	$ 63,067,000
28. Sum of line 26 and line 27	$ 73,882,478
29. Percent funds obligated for Public Service Activities (line 25 divided by line 28)	8.84 %
Part VI: Planning and Program Administration Cap Calculation	
30. Amount subject to planning and administrative cap (grant amount from line 2 plus line 5c)	$ 73,692,734
31. Amount expended for Planning & Administration (from line 9 above)	$ 10,708,591
32. Percent funds expended (line 31 divided by line 30)	14.53 %

DEPARTMENT OF THE ARMY
HEADQUARTERS, US ARMY GARRISON
FORT INDIANTOWN GAP
ANNVILLE, PENNSYLVANIA 17003-5011

REPLY TO
ATTENTION OF
AFKA-ZQ-DE-E (200-1a)

29 Apr 92

MEMORANDUM FOR Commander, 157th SIB, ATTN: Major Pominville, Horsham #2 USARC, 400 Horsham Road, Horsham, Pennsylvania 19044-2189

Subject: Indoor Rifle Range Contamination

1. Indoor rifle ranges at Germantown and Bristol USARCs were evaluated for lead (Pb) contamination by Gillan and Hartmann, Inc. and RT Environmental Services, Inc. under contract with this office.

2. Field Investigation and Sampling Reports are enclosed. Based on data collected during these sampling investigations, certain actions are recommended to investigate and remediate potential lead problems at the USARCs. These recommendations are found in Section 5.0, SUMMARY INVESTIGATION AND REMEDIATION, of the enclosed reports.

3. Please advise facility managers and occupants to discontinue use of these rooms immediately. Equipment and supplies should be decontaminated before they are removed. This office has requested 1383 environmental funds for FY 93 for procurement of remedial services associated with the decontamination of the facility.

4. Please provide this office with a copy of your correspondence to facility managers regarding discontinued use of these indoor rifle ranges.

5. Point of contact at Fort Indiantown Gap is Mr. Kenneth L. Malick, DSN 277-2634 or COMM (717) 865-5444, extension 2634.

P. Tranchik

PETER M. TRANCHIK
Director of Engineering
and Housing

2 Enclosures

CF:
Major Hanneman
Installation Safety Officer, Jeff Maus
EPS Division, David Gray

CONTRACT NUMBER: DACA-89-D-0061
DELIVERY ORDER NUMBERS: 0003

FIELD INVESTIGATION AND SAMPLING REPORT

FOR

USARC INDOOR RIFLE RANGE

AT

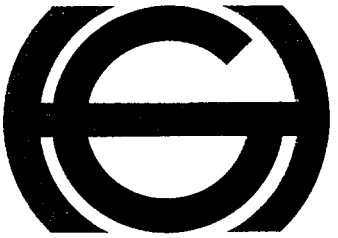
GERMANTOWN USARC
5200 WISSAHICKON AVENUE
PHILADELPHIA, PA

PREPARED BY:

GILLAN & HARTMANN, INC.

AND

RT ENVIRONMENTAL SERVICES, INC.



JOB NO. 91283

DATE: APRIL 27, 1992

Gillan & Hartmann, Inc.

215-935-0101 • 302-654-5959 • 609-347-1593 • FAX 215-935-7520

1.0 INTRODUCTION

The following document is the Field Investigation and Sampling Report for United States Army Reserve Centers (USARC) indoor firing range at the Germantown USARC, 5200 Wissahickon Avenue, Philadelphia, Pennsylvania. Filed sampling activities were conducted by RT Environmental Services ("RT") under the terms of contract #DACA-89-D-0061, Delivery Order #0003. The purpose of the field investigation was to collect samples and perform field observations relevant to the investigation of possible residual lead contamination within the rifle ranges and to make subsequent recommendations with respect to site remediation. On site sampling activities were performed on February 13, 1992. Field activities and sampling procedure were conducted in accordance to those outlined in the Sampling and Analysis Test Plan for United States Army Reserve Centers ("USARC") Rifle Ranges. The approved final Sampling and Analysis Plan was dated February 1992.

2.0 SITE HISTORY

The Department of the Army operates a Army Reserve Center at 5200 Wissahickon Avenue, Philadelphia, Pa. for housing and training Army Reserve Units during their active service period. (See Figure 1.)

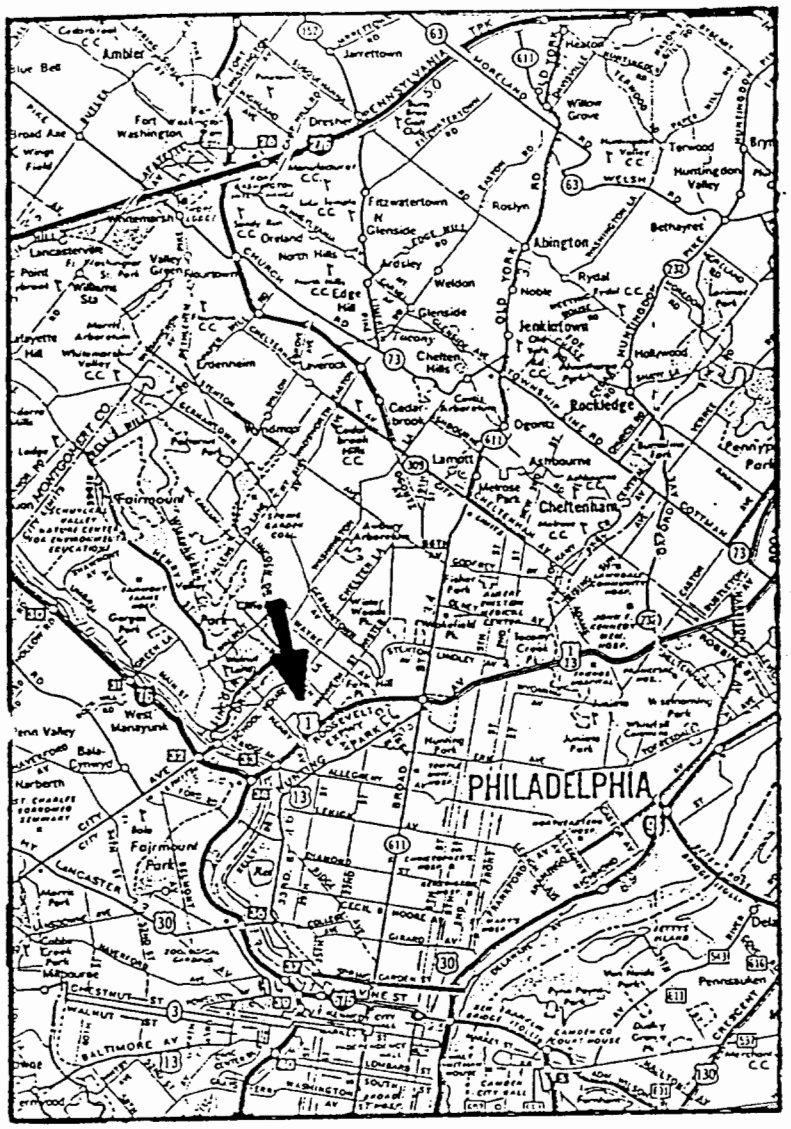
Under the current set-up, drill training is conducted throughout the year in periods called Unit Training Assemblies (UTA's). The UTA is a four hour training session which is conducted in drill sessions during a one weekend per month format at an off-site location such as Fort Indiantown Gap or Fort Dix. Under this system, four UTA's are conducted monthly and, hence, forty-eight are conducted annually.

Historically, however, training was not conducted in the one weekend per month format. Rather, drill sessions were conducted in one evening per week sessions in which training was performed at the individual facilities. Proficiency in marksmanship was required as part of the UTA training and to that end, sub-caliber (.22) rifle ranges were an integral instrument for unit training.

From information given to RT Environmental Services ("RT") during site visits, comprehensive training including the use of the indoor rifle ranges was performed for a period of time between the 1950's and the post-Vietnam era.

Changes in the late 1960's in the training requirements of reserve units meant that the field drills (UTA's) were being conducted at a central location (Fort Indiantown Gap) and, therefore, the use of the rifle ranges at Reserve Centers became obsolete.

Currently, the Army is considering alternative uses for these rifle ranges and is interested in determining the environmental impact of their historic use in creating a comprehensive remedial plan. Under the Delivery Order, the Contractor has been asked to devise,



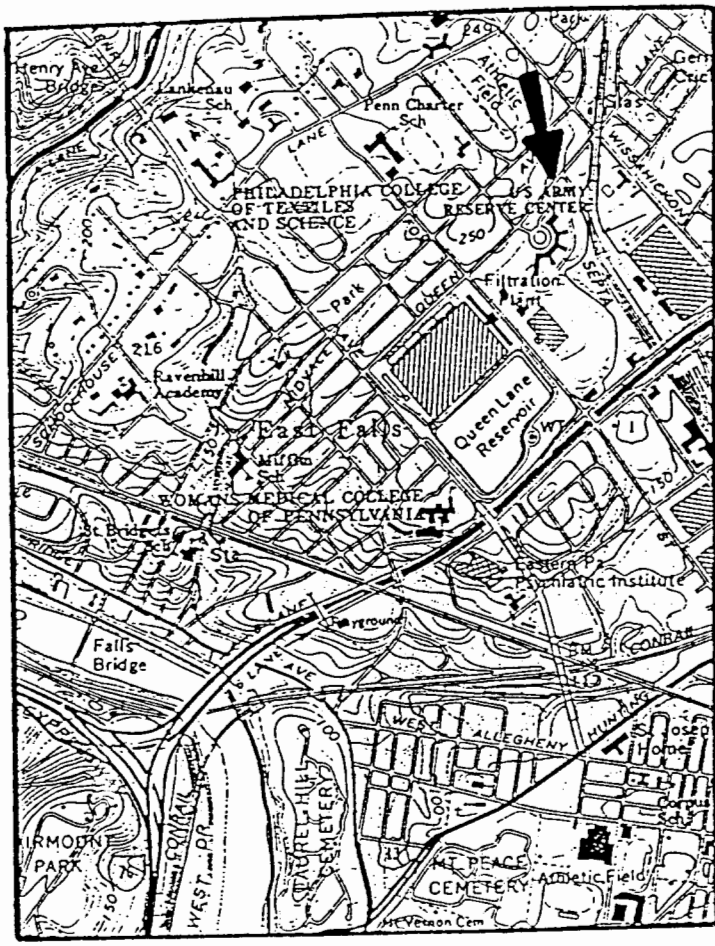


FIGURE 1
SITE LOCATION MAP

GERMANTOWN USARC

justify, schedule and conduct a sampling of the rifle ranges and related structures by assessing the potential for lead contamination at the site.

2.1 TYPICAL RIFLE RANGE LAYOUT

The typical range is 70' by 110' from the firing line to the target and is made up of three or four 4'10" firing lanes with 2'2" outside alleys. Behind the firing line is a 400 square foot area (20' x 20') where, presumably, reloading or instructional activities were conducted. Beyond that is a 300 square foot range storage room. Entrance and egress to the rifle range is typically from a side door which enters in the area immediately behind the firing line. (See Figure 2.)

The rifle range target area uses a standard layout with a 8' - 12' sand pit (the width of the range at the target area). The depth of the pit may vary, but has been determined in the field to be as deep as 10", with seven to eight inches of sand. At the rear of the pit is a large heavy gauge steel deflector plate which originates from the rear of the pit and slants forward at a 45° upward angle.

The targets are positioned immediately in front of this plate, and it functions to deflect the bullets downward. The base of this plate is mounted directly within the pit; however, the top of the plate may or may not extend completely to the ceiling. As a result, an area of 800-1,000 ft^3 may exist behind the deflector shield.

The walls of the USARC rifle ranges are, in all cases, cinder block with a paint finish. At most ranges the area from the rear of the pit to a point approximately 20' in front of the target, the block walls are exposed. From this point, a 1" thick coarse fiber

acoustical tile, mounted on a 1 x 3 furring strip nailed to the wall serves as the interior finish. The start of this is trimmed with a return piece so that a gap does not exist along the section of the wall. These tiles generally are 2' x 4' in size, and for the most part intact. The tiles continue in the same configuration across the ceiling.

The ranges are typically lit using an incandescent spot light at the front of the range to illuminate the targets. Extending to the rear are rows of fluorescent lights 20' apart and three wide. The lights are protected by a series of deflector shields which are anchored to the ceiling at the rear and extend downward at a 45° angle two feet from the ceiling. The floors of the rifle ranges are unpainted, smooth trowel finished concrete.

The USARC's frequently utilize a self-contained heating and ventilation system. At single story rifle ranges there is a series of exhaust ducts over the firing line which function to remove smoke and powder caused during the firing. These exhaust directly upward through a roof fan.

Heating within the ranges is conducted through a non-integrated oil-fired, hot water heating system. Utilizing this configuration a two inch hot water line travels through a heating coil located in the center of an air exchanger. Air is pulled from the front of the range through the intake at the bottom of the exchanger, across the coil and is exhausted through the top of the unit. This unit provides heat for the entire rifle range.

2.2 GERMANTOWN RIFLE RANGE

The Germantown range is currently serving as a locker room for the USARC. Lockers line the walls of the range with a double row of lockers in the center (Figure 3). The lockers were empty and questions to center personnel indicated they were only in use

4.0 SAMPLE RESULTS

Analytical samples collected from the Germantown USARC revealed significantly elevated levels of lead in all matrices collected. (See Table 1.)

Of the six floor wipe samples which were collected from within the rifle range, all revealed lead levels in excess of the recommended remedial threshold of 200 ug/ft^2. Individual results ranged from 530 ug/ft^2 to 31,800 ug/ft^2. Lead values basically were observed to decrease with distance from the sand pit area. However, all samples exceeded the threshold remedial value.

Two equipment wipe samples were collected from two locations within the Germantown USARC. Sample E1 was collected from atop the lockers in the center of the rifle ranges and revealed lead concentrations of 1,020 ug/ft_2. Sample E2 was collected from the air exchange inlet and had a value of 123,000 ug/ft^2.

Acoustical tile samples collected from the walls and ceiling of the facility revealed lead calculations of 350-640 ug/Kg.

Samples collected from the light deflectors had lead concentrations of 4,200 ug/ft^2 and 4,100 ug/ft^2.

Stratigraphic sand samples collected from the catchment area revealed lead concentrations ranging from 33,700 ug/Kg at the base to 138,700 ug/Kg at the surface. All these values represent extremely elevated concentrations of lead.

The corresponding TCLP Lead sample for this area revealed leachable lead concentrations of 1,330mg/l. By definition, the lead in the sand catchment area is a characteristic hazardous waste as defined by 40 CFR.

TABLE ONE

ANALYTICAL RESULTS

GERMANTOWN USARC

SAMPLE #	TOTAL LEAD ug/ft.^{2}
W-F1-GT	530
W-F2-GT	3,440
W-F3-GT	1,240
W-F4-GT	31,800
W-F5-GT	6,600
W-F6-GT	33,800
W-E7(E1)-GT	1,020
W-E10(E2)-GT	123,000
W-D8(LD1)-GT	4,200
W-D9(LD2)-GT	4,100
W-BLANK-GT	50
W-BLANK-SP-GT	12,800
AT(AC)-W1-GT	640 ug/Kg
AT(AC)-W2-GT	350 ug/Kg
AT(AC)-C1-GT	370 ug/Kg
AT(AC)-C2-GT	350 ug/Kg
CS-S(SURF)-GT	138,000 ug/Kg
CS-6"-GT	30,900 ug/Kg
CS-BASE-GT	33,700 ug/Kg

5.0 SUMMARY INVESTIGATION AND REMEDIATION

Based on the data collected during the course of the sampling investigation, RT recommends the following action be undertaken to investigate and remediate potential lead problems at the USARC.

- The facility should discontinue the storage of any and all materials within the catchment sand area, immediately.

- The facility should restrict all access to the catchment sand area, immediately.

- The practice of conducting field drills, such as the construction of battle models as observed at the Germantown USARC, should be discontinued, immediately.

- The routing of air via the air exchanger unit located in the rifle range should be verified. This unit should be disconnected if it connects with ductwork to other parts of the building. If so, further samples may be needed.

- The Germantown USARC should begin procurement of remedial services associated with the decontamination of the facility. Specific measures for decontamination are given in Section 6.

- The Germantown USARC should evaluate alternative interim storage room facilities.

- All equipment and material stored in the range should be decontaminated before removal.

6.0 RECOMMENDED REMEDIAL RESPONSES

Based on the data collected during our investigation, RT recommends the following remedial response be conducted at the Germantown USARC.

- Catchment sand from within the catchment area should be removed and disposed of as hazardous waste.

- The projectile deflection shield should be vacuumed and then removed and disposed of.

- The light deflector shields should be removed and decontaminated using the same procedure as for the projectile deflection shield.

- The lockers within the rifle range should be decontaminated utilizing vacuuming and then a trisodium phosphate rinse. This should be followed by a clean water rinse.

- The acoustical tile from the walls and ceiling and the batten strips which they are fastened on should be removed and disposed. All light fixtures and other appurtenances which are to remain shall be vacuumed.

- All concrete surfaces (floor, wall and ceiling) should be initially vacuumed, then pressure washed with trisodium phosphate and rinsed with clean water. All accumulating wash and rinse waters should be collected at the time of generation and disposed.

- The heating/ventilation air exchanger unit and exhaust fans and ducts should be cleaned using conventional duct cleaning procedures, or should be removed and replaced

with identical equipment.

- Follow-up wipe sampling should be conducted on all surfaces to ensure that concentrations of residual lead dust meet the acceptable levels.

- The catchment sand pit should be decontaminated using the same methods for all concrete and then should be filled with concrete to floor grade.

- All concrete surfaces should be painted as a final step.

CONTRACT NUMBER: DACA31-89-D-0061
DELIVERY ORDER NUMBERS: 0003, 0004, 0005

SAMPLING AND ANALYSIS TEST PLAN

FOR

USARC-RIFLE RANGES
GERMANTOWN, PHILADELPHIA, HORSHAM, NORTH PENN, BRISTOL, REESE, SCRANTON, MARLIN GARES, WILKES-BARRE

PREPARED BY:

GILLAN & HARTMANN, INC.

JOB NO. 91283

DATE: JANUARY 9, 1992

Gillan & Hartmann, Inc.

215-935-0101 • 302-654-5959 • 609-347-1593 • FAX 215-935-7520

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LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

The following Test Plan outlines the Sampling and Analysis protocol, procedures, personnel and schedule for the sampling events to be conducted in accordance with fulfilling the requirements of Contract Number DACA31-89-D-0061, Delivery Orders #0003, 0004, 0005. This Test Plan is developed based on the specifications provided in Section 3.2 and is intended to meet the requirements of: Federal Register, March 29, 1990 and June 29, 1990 update, Environmental Protection Agency; Toxicity Characteristic Leaching Procedure, Environmental Protection Agency; Resources Conservation and Recovery Act, and Pennsylvania Department of Environmental Resources Hazardous Waste Management Definitions.

This test Plan covers the following sites:

	USARC NAME	ADDDRESS
1.	Germantown USARC	5200 Wissahickon Ave. Philadelphia, PA
2.	Philadelphia Memorial USARC	2838-98 Woodhaven Rd. Philadelphia, PA
3.	Horsham Memorial USARC	936 Easton Road Horsham, PA
4.	North Penn USARC	Potshop & Berks Rd. Worcester, PA
5.	Bristol USARC	2501 Ford Road Bristol, PA
6.	James W. Reese USARC	500 W. 24th Street Chester, PA
7.	Scranton USARC	Pine St & Colfax Ave Scranton, PA
8.	SGT Marlin Gares USARC	Bldg, 19-1 FTIG Annville, PA
9.	Wilkes-Barre USARC	1001 Highway 315 Wilkes-Barre, PA

2.0 BACKGROUND NARRATIVE

The Department of the Army operates Army Reserve Centers throughout the United States which are used for, among other things, housing and training of Army Reserve Units during their active service period.

Under the current set-up, drill training is conducted throughout the year in periods called Unit Training Assemblies (UTA's). A UTA is a four hour training session which is conducted in drill sessions during a one weekend per month format at an off-site location such as Fort Indiantown Gap or Fort Dix. Under this system, four UTA's are conducted monthly and hence forty-eight are conducted annually.

Historically, however, training was not conducted in the one weekend per month format. Rather, drill sessions were conducted in one evening per week sessions in which training was performed at the individual facilities. Proficiency in marksmanship was required, as part of the UTA training and to that end, sub-caliber (.22) rifle ranges were an integral instrument for unit training.

From information given to RT Environmental Services ("RT") during site visits, comprehensive training including the use of the indoor rifle ranges was performed for a period of time between the 1950's and the post-Vietnam era.

Changes in the late 1960's in the training requirements of reserve units meant that the field drills (UTA's) were being conducted at a central location (Fort Indiantown Gap) and therefore the use of the rifle ranges at Reserve Centers became obsolete.

Currently, the Army is considering alternative uses for these rifle ranges and is interested in determining the environmental impact of their historic use, in creating a comprehensive remedial plan. Under the Delivery Order, the Contractor has been asked to devise, justify, schedule and conduct a sampling of the rifle ranges and related structures in assessing the potential for lead contamination at the site.

2.1 Rifle Range Layout

The design and layout of the rifle ranges is, for the most part, relatively consistent. The range is typically 110' from the firing line to the target, and made up of three or four 4'10" firing lanes, with 2'2" outside alleys. Behind the firing line is a 400 square foot area (20' x 20') where presumably reloading or instructional activities were conducted. Beyond that is a 300 square foot range storage room. Entrance and egress to the rifle range is typically from a side door which enters in the area

immediately behind the firing line. (See Figure 1.)

The rifle range target area uses a standard layout with a 8′ - 12′ sand pit the width of the range at the target area. The depth of the pit may vary, but has been determined in the field to be as deep as 10", with seven to eight inches of sand. At the rear of the pit is a large heavy gauge steel deflector plate which originates from the rear of the pit and slants forward at a 45° upward angle.

The targets are positioned immediately in front of this plate, and it functions to deflect the bullets downward. The base of this plate presumably is mounted directly within the pit; however, the top of the plate may or may not extend completely to the ceiling. As a result, an area of 800-1,000 ft^3 may exist behind the deflector shield.

The walls of the rifle ranges are in all cases cinder block, with a paint finish. In the area from the rear of the pit to a point approximately 20′ in front of the target, the block walls are exposed. From this point, a 1" thick coarse fibre acoustical tile, mounted on a 1 x 3 firring strip nailed to the wall serves as the interior finish. The start of this is trimmed with a return piece so that a gap does not exist along the section of the wall. These tiles generally are 2′ x 4′ in size, and for the most part intact. The tiles continue in the same configuration across the ceiling.

The ranges are typically lit using an incandescent spot light at the front of the range to illuminate the targets. Extending to the rear are rows of fluorescent lights 20′ apart and three wide. The lights are protected by a series of deflector shields which are anchored to the ceiling at the rear and extend downward at a 45° angle two feet from the ceiling. The floors of the rifle ranges are unpainted, smooth trowel finished concrete.

Currently, all the rifle ranges are being used for storage rooms.

EA Engineering, Science, and Technology

11019 McCormick Road
Hunt Valley, MD 21031
Telephone: 410-584-7000
Fax: 410-771-1625

28 September 1995

Mr. Harry Blecker
DPW, Ft Indiantown Gap
ATTN: AFZS-FIG-PW-E
Annville, PA 17003

Reference: Contract No. DACA31-94-D-0025, Environmental Compliance Assessment, Army Reserve (ECAAR), Follow-up Actions for the 79th ARCOM

Dear Mr. Blecker:

Please find enclosed the following:

- One copy of the Hazardous Waste Management Plan (HWMP) exemption letter for AMSA 23 and ASF 28 at Willow Grove NAS JRB

- One copy each of the Stormwater Pollution Prevention Plan (SPPP) exemption letters for the following facilities:

CPT Sabalis Memorial USARC
SGT Paul Beck AFRC
Wilson Kramer USARC
Bloomsburg USARC
Bristol Veterans USARC
Frank M. Parker USARC
James W. Reese USARC
Edgemont USARC
Germantown USARC
Adams County Memorial USARC
Horsham Memorial USARC
Lancaster USARC
Lewisburg USARC
Mifflin County USARC
Ray S. Musselman USARC
Philadelphia Memorial AFRC
Robert E. Roeder USARC
CSM S.P. Serrenti Memorial USARC
Centre County Memorial USARC
Lenkalis USARC
Wilkes-Barre USARC

Lycoming Memorial USARC
North Penn USARC

- One copy each of the Installation Spill Prevention, Control, and Countermeasures Plan (ISPCCP) exemption letters for the following facilities:

CPT Sabalis Memorial USARC
SGT Paul Beck AFRC
Wilson Kramer USARC
Bloomsburg USARC
Bristol Veterans USARC
Frank M. Parker USARC
James W. Reese USARC
Germantown USARC
Adams County Memorial USARC
Horsham Memorial USARC
Mifflin County USARC
Ray S. Musselman USARC
Robert E. Roeder USARC
CSM S.P. Serrenti Memorial USARC
Centre County Memorial USARC
Lenkalis USARC
Wilkes-Barre USARC
Aviation Support Facility #28
North Penn USARC

- A master disk copy containing all required plans in Word Perfect version 5.1 for all Pennsylvania facilities.

Please give Mr. Christopher Evans a call at the Corps of Engineers - Baltimore District, (410) 962-0157 if you have any questions. Thank you.

Sincerely,

Laura B. Yarbrough

Laura B. Yarbrough
Project Manager

cc: Christopher Evans, CENAB-EN-HM
F:\6078723\SUB24\FTIG.LET

CROSS-CONNECTION CONTROL SURVEY

FOR

99th REGIONAL SUPPORT COMMAND

SITE:

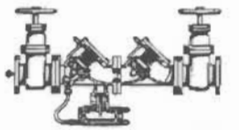
GERMANTOWN VETERANS USARC
5200 WISSAHICKON AVE.
PHILADELPHIA, PA. 19144

BY: NAVY PUBLIC WORKS CENTER WASHINGTON
1311 10 ST SE Suite 102
Washington Navy Yard DC 20374-5095

22 SEPTEMBER 2000

99th RSC

CROSS-CONNECTION CONTROL INVENTORY



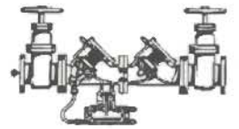
GERMANTOWN VETERANS USARC

5200 WISSAHICKON AVENUE
PHILADELPHIA, PA. 19144-4095

ROOM	PWC ID	TYPE	INSTALLED	SIZE	SYSTEM	DEGREE OF HZ	REMARKS
MECHANICAL EQUIPMENT ROOM	437	REDUCE PRESSURE PRINCIPLE	YES	3"	MAIN	HEALTH	REBUILD RP. RP NEEDS SUPPORT
MECHANICAL EQUIPMENT ROOM	438	REDUCE PRESSURE PRINCIPLE	YES	1"	HEAT MAKE UP	HEALTH	RP FUNCTIONS BUT FAILS FOR HEIGHT Y=7'. REBUILD RP FOR 5 YEAR CYCLE AND RELOCATE NO MORE THAN 4' OFF FLOOR.
MECHANICAL EQUIPMENT ROOM	439	REDUCE PRESSURE PRINCIPLE	NO	1-1/4"	WATER SOFTNER	HEALTH	
115 JANITORS CLOSET	440	HOSE CONNECTION VACUUM BREAKER	NO	3/4"	MOP SINK	HEALTH	
115 JANITORS CLOSET	441	HOSE CONNECTION VACUUM BREAKER	NO	3/4"	MOP SINK	HEALTH	
KITCHEN	442	DUAL CHECK	NO	1/2"	ICE MACHINE	NON HEALTH	
2 ND FLOOR JANITORS CLOSET	443	ATMOSPHERIC VACUUM BREAKER	NO	3/4"	MOP SINK	HEALTH	REPLACE SMALL FAUCET WITH NEW AVB TYPE.
EXTERIOR	444	HOSE CONNECTION VACUUM BREAKER FROST FREE	YES	3/4"	HOSE BIB, FROST FREE	HEALTH	

99th RSC

CROSS-CONNECTION CONTROL INVENTORY



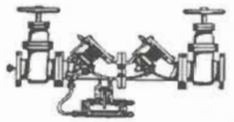
GERMANTOWN VETERANS USARC

5200 WISSAHICKON AVENUE
PHILADELPHIA, PA. 19144-4095

ROOM	PWC ID	TYPE	INSTALLED	SIZE	SYSTEM	DEGREE OF HZ	REMARKS
EXTERIOR	445	HOSE CONNECTION VACUUM BREAKER FROST FREE	YES	3/4"	HOSE BIB, FROST FREE	HEALTH	
MOTOR POOL EXTERIOR	446	HOSE CONNECTION VACUUM BREAKER FROST FREE	YES	3/4"	HOSE BIB, FROST FREE	HEALTH	
MECHANICAL EQUIPMENT ROOM	447	HOSE CONNECTION VACUUM BREAKER	YES	3/4"	HOSE BIB	HEALTH	ON MAIN
RESTROOMS	448	FLUSH VALVE VACUUM BREAKER	YES		TOILETS AND URINALS	HEALTH	APROXIMATELY 19 FVVF'S INSTALLED

99th RSC

TESTABLE BACKFLOW PREVENTER INVENTORY



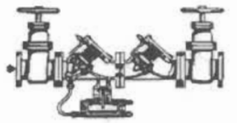
GERMANTOWN VETERANS USARC

5200 WISSAHICKON AVENUE
PHILADELPHIA, PA. 19144-4095

ROOM	TYPE	HAZARD	TEST FREQ	PWC ID	SIZE	INSTALLED	MAKE	MODEL	SERIAL #	DATE
MECHANICAL EQUIPMENT ROOM	REDUCE PRESSURE PRINCIPLE	HEALTH	SEMI-ANNUAL	437	3"	YES	WATTS	909	143473	8/15/00
		REBUILD RP. RP NEEDS SUPPORT								FAILED
MECHANICAL EQUIPMENT ROOM	REDUCE PRESSURE PRINCIPLE	HEALTH	SEMI-ANNUAL	438	1"	YES	WATTS	909	318459	8/15/00
		RP FUNCTIONS BUT FAILS FOR HEIGHT Y=7'. REBUILD RP FOR 5 YEAR CYCLE AND RELOCATE NO MORE THAN 4' OFF FLOOR.								FAILED
MECHANICAL EQUIPMENT ROOM	REDUCE PRESSURE PRINCIPLE	HEALTH	SEMI-ANNUAL	439	1-1/4"	NO				8/15/00

99th RSC

CROSS-CONNECTION CONTROL INVENTORY PHOTOS



GERMANTOWN VETERANS USARC

5200 WISSAHICKON AVENUE
PHILADELPHIA, PA. 19144-4095

ROOM: MECHANICAL EQUIPMENT ROOM
SYSTEM: MAIN
SIZE: 3"
HAZARD: HEALTH
TEST FREQ: SEMI-ANNUAL
STATUS: FAILED
PWC ID: 437
REMARKS: REBUILD RP. RP NEEDS SUPPORT

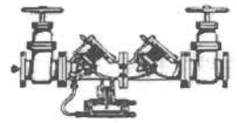
TYPE: REDUCE PRESSURE PRINCIPLE
INSTALLED: YES
MAKE: WATTS
MODEL: 909
SERIAL #: 143473
DATE: 8/15/00

ROOM: MECHANICAL EQUIPMENT ROOM
SYSTEM: HEAT MAKE UP
SIZE: 1"
HAZARD: HEALTH
TEST FREQ: SEMI-ANNUAL
STATUS: FAILED
PWC ID: 438
REMARKS: RP FUNCTIONS BUT FAILS FOR HEIGHT Y=7'. REBUILD RP FOR 5 YEAR CYCLE AND RELOCATE NO MORE THAN 4' OFF FLOOR.

TYPE: REDUCE PRESSURE PRINCIPLE
INSTALLED: YES
MAKE: WATTS
MODEL: 909
SERIAL #: 318459
DATE: 8/15/00

99th RSC

CROSS-CONNECTION CONTROL INVENTORY PHOTOS

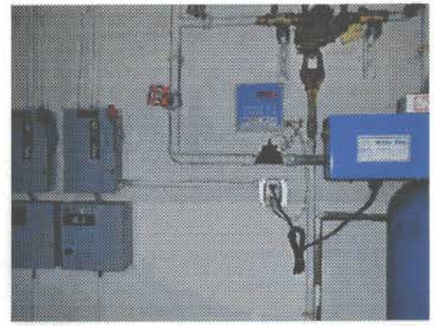


GERMANTOWN VETERANS USARC

5200 WISSAHICKON AVENUE
PHILADELPHIA, PA. 19144-4095

ROOM: MECHANICAL EQUIPMENT ROOM
SYSTEM: WATER SOFTNER
SIZE: 1-1/4"
HAZARD: HEALTH
TEST FREQ: SEMI-ANNUAL
STATUS:
PWC ID: 439
REMARKS:

TYPE: REDUCE PRESSURE PRINCIPLE
INSTALLED: NO
MAKE:
MODEL:
SERIAL #:
DATE: 8/15/00



US Army Corps
of Engineers
Baltimore District

79th Army Reserve Command
Cultural Resource Management Plan

Prepared for:	79th Army Reserve Command
Prepared under contract to:	U.S. Army Corps of Engineers, Baltimore District (Contract No. DACW31-89-D-0054) Delivery Order No. 32
Prepared by:	KFS Historic Preservation Group Kise Franks & Straw Inc. Philadelphia, Pennsylvania
In Association with:	Hunter Research, Inc. Trenton, New Jersey
	July 1995

IV. INVENTORY

A. Introduction

This chapter describes the process by which historic architectural resources and archeological site potential were identified and evaluated. Background research and site visits were conducted for each of the thirty-two facilities. The information derived from these tasks is presented on the facility data forms in Appendix C. Data entered on the forms include a research checklist of records examined, information on previous assessments, results of the current survey, and a summary description of the facility and its surroundings. The site visits were divided among three organizations: the Army Corps of Engineers, Baltimore District (ACOE), Hunter Research, Inc. (HRI), and Kise Franks & Straw (KFS).

B. Historic Architectural Resources

No historic architectural resources were identified at any of the thirty-two facilities. Facility construction dates range from 1951 to 1994. A large percentage of the facilities consist of two buildings, the reserve center and maintenance shop. Facility architecture is utilitarian, consisting of, for the most part, one and two-story rectangular brick and/or concrete block buildings with metal windows and built-up roofing. Architectural resources should be evaluated for the National Register when they attain fifty years of age.

Three of the facilities (Bristol, Edgemont, and Worcester) were established on the site of former Nike missile facilities. Most of the buildings and structures associated with the missile program were removed after the Nike program was terminated in the 1960s. In general, the only vestiges of the Nike tenancy at the facilities are underground storage silos, sewage treatment plants, and utility systems, such as sanitary sewer, storm sewer, electrical lines, water lines, and water well. In some instances, the storage silos have been converted to fire protection water storage or have been backfilled with building demolition debris. The large loss of buildings precludes these facilities from being considered significant as representatives of the Nike program. Nevertheless, the Pennsylvania SHPO only considers resources that are fifty years or older, thereby precluding resources related to the Cold War, such as the Nike missile program.[1]

Although there are no eligible or potentially eligible resources on the facilities, there are adjacent or surrounding resources, namely buildings and districts, that may fall within an undertaking's area of potential effects. Adjacent resources at Bellefonte, Edgemont, and Gettysburg were previously listed on the National Register of Historic Places. In the course of field survey for the preparation of this plan, potentially eligible resources were identified neighboring the Chester and Harrisburg facilities. Facility managers should be cognizant of these issues when planning an undertaking. The specific resources are the following:

Bellefonte: Bellefonte Armory, located east of the facility, is listed on the National Register of Historic Places (NRHP).

Chester: Bell Mansion, located northeast of the facility, appears potentially eligible for the NRHP.

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[1]U.S. Department of Defense, Legacy Cold War Project, *Coming in from the Cold; Military Heritage in the Cold War* (Washington, 1994), 59.

Edgemont: Ridley Creek State Park Historic District, located south of the facility, is listed on the NRHP.

Gettysburg: Facility is located in the Gettysburg Historic District, listed on the NRHP.

Harrisburg: Facility is located in a residential district that appears potentially eligible for the NRHP.

C. Archeological Site Potential

Background research at the Bureau for Historic Preservation (BHP) in Harrisburg and pedestrian reconnaissance surveys of the thirty-two facilities revealed that eight of the facilities appear to have archeological site potential. Seven of the facilities are considered to have low archeological potential: Ashley, Edgemont, Gettysburg, Schuylkill Haven, State College, West Hazleton, Williamsport. Greencastle is considered to have high archeological potential. All of the facilities except Schuylkill Haven are considered to have prehistoric archeological potential. Schuylkill Haven, Greencastle and Gettysburg are considered to have historic archeological potential.

Phase 1b testing should be undertaken at facilities considered to have archeological site potential. The Phase 1b survey constitutes the next step in the determination of eligibility process. The Phase 1b results will determine if the specific location appears eligible for inclusion in the National Register of Historic Places. Appendix E contains archeological procedures for reference if archeological resources are discovered at any of the facilities, including those considered to have no potential.

The following summaries provide a fuller description of the nature of archeological potential at the facilities. The facilities are arranged by study units and references to quadrangle maps refer to archeological maps on file at the BHP.

Pennsylvania Study Unit I-- Piedmont and Coastal Plain:

Bristol: No archeological sites have been identified in the vicinity of the facility. A Phase I archeological survey (G on the U.S.G.S. Beverly quadrangle map) has been undertaken, and no archeological sites were found.

Chester: Survey records maintained by the Bureau for Historic Preservation in Harrisburg indicate that an archeological site (36DE30) containing 19th and 20th century artifacts is located near the facility.

Edgemont: Archeological site survey records maintained by the Bureau for Historic Preservation in Harrisburg indicate that three prehistoric sites in Delaware County (36DE15, 16 and 17) and two undefined sites in Chester County (36CH120 and 276) lie in the vicinity of the facility. The Delaware County sites yielded lithics and ceramics, the latter indicative of Woodland occupation. An 18th-century farmstead is located to the north of the facility. The facility is considered to have low archeological potential.

Germantown: Two archeological sites -- the Gardette Site (36PH50) and the Atwater Kent Factory Site (36PH51) -- are located in the vicinity of the facility.

Gettysburg: No archeological sites are known in the immediate vicinity, but an area of medium potential for prehistoric occupation was identified near wetlands in the southwest corner of the facility. Since the facility occupies a portion of the site of the Battle of

Gettysburg, the presence of Civil War artifacts within the property boundaries seems likely. The facility is considered to have low archeological potential.

Horsham: No archeological sites have been identified in the vicinity of the facility. An 18th-century structure stands to the south.

Lancaster: Archeological site survey records indicate that numerous prehistoric sites may be found in the vicinity of the facility. The sites (36LA421-423, 36LA655-680) are open-air loci yielding lithic artifacts.

Marcus Hook: No archeological sites have been identified in the vicinity of the facility. Since the entire site was constructed on fill placed along the Delaware River bank after 1870, no archeological sites are present within this fill. It should be noted, however, that deep excavations may encounter old river bottom with the potential for prehistoric and historic maritime artifacts.

Norristown: No archeological sites have been identified in the vicinity of the facility.

Willow Grove: No archeological sites have been identified in the vicinity of the facility.

Philadelphia (Woodhaven): No archeological sites have been identified in the vicinity of the facility.

Worcester: No archeological sites have been identified in the vicinity of the facility.

York: No archeological sites have been identified in the vicinity of the facility.

Pennsylvania Study Unit II-- Ridge and Valley:

Ashley: No archeological sites have been identified within the immediate vicinity of the facility. The presence of a wetland to the west of the facility suggests that evidence of prehistoric occupation could be found, but grading and filling throughout most of the facility have probably removed most of that potential. The facility is considered to have low archeological potential.

Bellefonte: No archeological sites have been identified in the immediate vicinity of the facility.

Bethlehem: No archeological sites have been identified in the vicinity of the Bethlehem facility.

Bloomsburg: No archeological sites have been identified in the vicinity of the facility. An archeological survey (D on the U.S.G.S. Bloomsburg quadrangle map) has been undertaken, but the report which described that survey was not available for study at the Bureau for Historic Preservation in Harrisburg.

Chambersburg: No archeological sites have been located in the vicinity of the facility.

Greencastle: A review of the Pennsylvania Archeological Site Survey files in Harrisburg indicates that numerous prehistoric sites (36FR205-222) may be found in the general vicinity of the facility. These sites date from the Early Archaic to the Late Woodland periods and have yielded lithic projectile points and other tools, ceramics, pipe fragments, a shell bead, and possibly human bone. The occupants of these sites utilized the local rhyolite outcrops for lithic raw material almost exclusively.

The northern fenced portion of the facility appears to be completely disturbed, but the southern wooded portion contains rhyolite outcrops, and one shovel test excavation yielded a prehistoric rhyolite flake. A surface scatter of historic artifacts is also present in the southern portion. The facility is considered to have high archeological potential.

Harrisburg: No archeological sites have been located in the vicinity of the facility.

Lewisburg: The Pennsylvania SHPO has previously determined the Lewisburg facility contained no archeological potential and did not warrant archeological survey (see Appendix B).

Lewistown: No archeological sites have been located in the immediate vicinity of the facility.

New Cumberland: One prehistoric archeological site is located north of the facility on the Susquehanna River. There are no archeological sites in the general vicinity of the reserve center.

Reading: The Pennsylvania SHPO has previously determined the Reading facility contained no archeological potential and did not warrant archeological survey (see Appendix B).

Schuylkill Haven: The facility is located on or near the site of a late 19th-early 20th century almshouse. The site of a cemetery associated with the almshouse is reportedly immediately beyond the western boundary fence of the facility. No archeological sites are indicated in the vicinity of the facility. The facility is considered to have low archeological potential.

Scranton: A series of prehistoric rock shelters (36LW008) are located in the general vicinity of the facility. No specific temporal affiliations were indicated in the Pennsylvania Archeological Site Survey files.

State College: Three prehistoric sites (36CE281, 336 and 337) are located in the immediate vicinity of the facility. The sites, ranging in date from Early to Late Archaic, contain jasper flakes and chert projectile points. The proximity of these sites suggests evidence of prehistoric occupation may have existed within the boundaries of the facility, although construction associated with the buildings and parking areas have resulted in a certain degree of disturbance. The facility is considered to have low archeological potential.

West Hazleton: Pennsylvania Archeological Site Survey records in Harrisburg record that a prehistoric shell midden with associated pottery indicative of Woodland occupation (36LU175) is located near the facility. A historic site related to a 19th-20th century building (36LU126) is also located in the vicinity. The facility is considered to have low archeological potential.

Wilkes-Barre (Highway 315): No archeological sites have been recorded for the immediate vicinity of the facility.

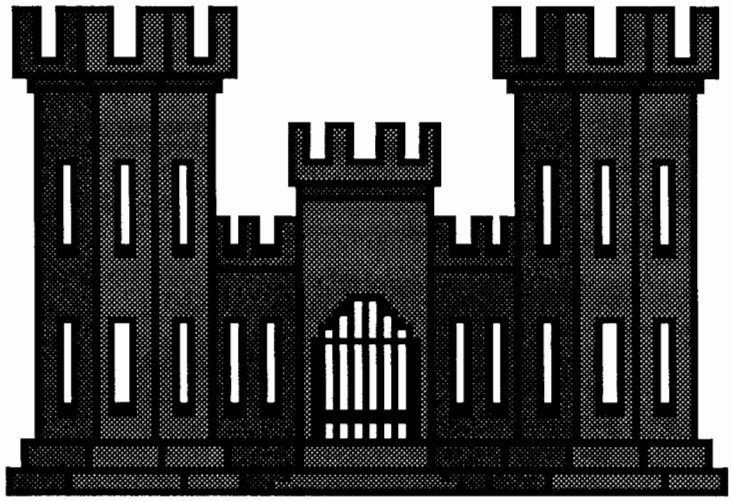
Wilkes-Barre (AMSA #32, 100 Stephens Road): No archeological sites have been recorded for the immediate vicinity of the facility.

Williamsport: No archeological sites have been reported for the vicinity of the facility. The proximity of Miller's Run Creek, which forms the northern and eastern boundary of the facility, suggests that evidence of prehistoric occupation may be found within the grounds of the facility. The facility is considered to have low archeological potential.

Pennsylvania Study Unit III-- Appalachian Plateau:

Lock Haven: The Pennsylvania SHPO has previously determined the Lock Haven facility contained no archeological potential and did not warrant archeological survey (see Appendix B).

DEPARTMENT OF THE ARMY
UNITED STATES ARMY FACILITY ENGINEER GROUP
416TH ENGINEER COMMAND
10 S.100 SOUTH FRONTAGE ROAD
DARIEN, IL 60561-1780



ENGINEERING AND ENVIRONMENTAL FACILITY ASSESSMENT

For

Germantown Veterans Memorial USAR Center

Germantown, Pennsylvania
Facility I.D. No. PA076

Date of Visit: 5-6 April 2000

PREPARED BY:

FACILITY ENGINEER GROUP (416th ENCOM)
FACILITY ENGINEER CENTER - NORTHEAST

FORT INDIANTOWN GAP
FACILITY ENGINEERING TEAM
Annville, Pennsylvania

06 April 2000

416th ENGINEER COMMAND
USAR FACILITY
ENGINEERING AND ENVIRONMENTAL
FACILITY ASSESSMENT

INSTALLATION NAME: GERMANTOWN VETERANS MEMORIAL USAR CENTER
INSTALLATION NUMBER: PA076 DATE: 5-6 APR 2000

TABLE OF CONTENTS

SECTION 1: EXECUTIVE SUMMARY

INSTALLATION NAME: GERMANTOWN VETERANS MEMORIAL USAR CENTER

INSTALLATION NUMBER: PA076 DATE: 45-6 APRIL 2000

1. The Ft. Indiantown Gap Facility Engineer Team (Team) conducted an Engineering and Environmental Facility Assessment (E2FA) for the Germantown Veterans Memorial USAR Center on 5-6 April 2000. The facility consists of a two-story brick faced main building (approximately 30,494 gross square feet) and a separate 5-bay Organizational Maintenance Shop (OMS) (approximately 6,042 gross square feet). The OMS has no office or administrative space. There is a fenced POV parking area and a separately fenced MEP area. The facility houses the 233rd Quartermaster Company, with assigned and authorized strengths of 174 and 194, respectively. The facility has 5 full-time AGR military and 1 civilian employee and 2 AGR Recruiters.

   The facility is located in an urban setting at 5200 Wissahickon Avenue in Germantown, PA adjacent to a VA administration facility. The facility was constructed in 1957 and has had several major facility component improvements in recent years, including electrical upgrade, chiller installation, boiler replacement, and window replacement. The main building heating system is dual fuel #2 fuel oil and natural gas, with gas as the primary fuel. Infrared gas heaters augment this heating system in the drill hall. The OMS is heated with gas-fired infrared heaters (2) and a single unit heater.

2. During the visit, two significant facility issues were noted, which warrant urgent action. LTC Uhrin, Regional Engineer for the 99th RSC was notified of these in a memo dated 11 APR 2000, a copy of which is contained in Enclosure C. The following summarizes these issues:

   a) Pavement Settling: In two (2) locations, the asphalt has failed, apparently due to sinkholes. In one location, in the POV parking lot, this problem occurred approximately one year ago and was repaired.

      The second location of failure is in front of the OMS building, where a section of asphalt about 12 feet long in a utility trench has dropped several feet. This area is located on the edge of a larger area of about 25 feet square, which has settled up to one foot. This should be a safety concern as the electrical feed to the OMS passes through the trench where the more significant settling has occurred. The larger safety concern is that the 2-inch natural gas feed to the OMS passes through the larger area of pavement settling. It should be noted that the gas industry has experienced explosions in buildings where gas lines have failed, and the gas has traveled along the trench into adjacent buildings.

      The likely cause of this pavement settling is related to 6-foot diameter sewer and storm sewer lines installed by the Philadelphia Water Department approximately 36 feet below grade in 1993/1994.

      Recommendation: It is recommended that the 99th RSC request that the Philadelphia Water Department and/or the City of Philadelphia take immediate appropriate action to repair the pavement settling at Germantown USAR Center and to investigate and correct

the root cause problem, which is likely associated with the city's sewer lines. This request should stress the safety issues associated with open sinkholes and the potential to impact electric and gas utility lines passing through the affected areas. All such work should be at no cost to the U.S. Government.

b) Roof Leaks: During the site visit, it was noted that roof leaks exist throughout the facility. These leaks have resulted in staining on the brick exterior and interior paint/wall damage. Additionally, the leaks appear to have caused some rotting of the wooden roof deck and rafters in at least two (2) locations in the drill hall.

Upon investigation, it was noted that the roof membrane is in excellent condition. The causes of the roof leaks appear to be from tears in the membrane directly above the roof edge flashing joints, which have lifted, thus tearing the membrane. Clogged or improperly draining gutters may have caused the lifting of the flashing. Additionally, a number of large holes (up to 2 inches in diameter) were found on the membrane. At one such hole location, the roof was "spongy" in an area of about 10 feet square, indicating that the insulation is saturated with water.

Recommendation: It is recommended that the roof replacement work order be changed to "roof repair", and executed ASAP, to avoid further deterioration of the structure. It is likely that this work could be completed for around $50K instead of $400K for replacement. However, if delayed, this work could cost $400K or more, if extensive structural repairs are required.

3. Environmental Compliance: Mr. Matt Andrews, of the U.S. Army Environmental Center observed and participated in the environmental compliance assessment. Mr. Andrews' objective was to better understand the Reserve ECAS process. The Environmental Compliance Assessment portion of the E2FA identified a total of 20 findings; 2 Class I, 13 Class III, 4 Regulatory Health/Safety, and 1 positive management finding. The Class I findings relate to a confirmed UST release and unmarked electric transformers. A copy of the findings along with recommended corrective actions is attached as Enclosure A. This enclosure is also intended to serve as the facility's quadrennial external environmental assessment report.

4. Facility Condition Survey: An evaluation of the overall condition of the facility was performed in accordance with USARC Surveyor's User Manual dated July 1997. A copy of the Facility Condition Survey is provided in Enclosure B, and a copy has been forwarded directly via e-mail to LTC Gary Jackson, USARC-DCSENG.

5. Real Property Maintenance: The main building and the OMS consist of CMU interior walls and brick veneer exterior walls with a concrete floor. With the exception of the parking lot sink hole and roof leak issues discussed in #2 above, the overall condition of the facility is very good and all areas observed were very clean and well maintained. During the site visit, the assessment team reviewed the RISER report, which contains previously submitted work orders. This RISER report has been annotated to reflect item validity and to adjust the estimated costs, resulting in a revised a total estimated cost of $257,000. Additionally, CST #1 provided a list of RPMA needs that were being reviewed for work order submission by CST #1. The FTIG team reviewed this list against current facilities needs and a marked up

copy of this listing is provided in Enclosure C. The total estimated amount of work reflected on this list is $14,850, most of which could be accomplished via Impac Card. No additional new RPMA work was identified during the assessment. All real property maintenance information is contained in Enclosure C.

6. Arms Vault Certification: The center's arms vault was inspected and re-certified IAW AR 190-11, which requires such action be conducted by appropriate engineer personnel every 5 years. The DA Form 4604-R should be posted in the arms vault and be reviewed during physical security surveys. The arms vault inspection checklist and DA Form 4604-R are contained in Enclosure D.

7. EMAAR/Space Utilization: Details relating to the utilization of space at the center are contained in Enclosure E.

8. Mr. Nick Taylor and Ms.Yvonne Deloatch were extremely helpful and cooperated in assisting the team with this visit. Their dedication and professionalism greatly simplified our team's ability to accomplish the mission.

DOUGLAS F. GARNER, PE
LTC, EN, USAR
Team Leader

SECTION 2: FACILITY IDENTIFICATION

INSTALLATION NAME: GERMANTOWN VETERANS MEMORIAL USAR CENTER

INSTALLATION NUMBER: PA076

STREET ADDRESS: 5200 Wissahickon Avenue
CITY/TOWN: Germantown (Philadelphia)
STATE: PA
ZIP CODE: 19144-4095
RSC/RSG: 99th RSC
FACILITY TYPE:

A. USARC:	X	B. AFRC:		C. OMS:	X	D. FLIGHT:	
E. DS/GS:		F. MED:		G. WET:		H. FLIGHT:	
I. ECS:		J. CTF:		K. OTHER:			

ASSESSMENT PERFORMED BY:
FACILITY ENGINEER TEAM INCLUDED:

LTC Doug Garner
MAJ John Holtzman
1LT Eric Burkholder
SSG Doug Killough

REFER TO FOR INFORMATION: LTC Doug Garner

Work: (607) 770-2696 Home: (607) 798-6650

PERSONNEL CONTACTED ON SITE:

NAME/GRADE	DUTY POSITION	PHONE NUMBER	E-MAIL
Mr. Nick Taylor	Facility Manager	(610) 584-0536	
Ms. Yvonne Deloatch	Facility Coordinator	(215) 848-9101	

ASSESSMENT CONDUCTED FROM: 5 APR 2000/1000 TO: 6 APR 2000/1600
DATE OF LAST ASSESSMENT: 16-18 SEP 1996

SECTION 3: FACILITY DATA
INSTALLATION NAME: GERMANTOWN VETERANS MEMORIAL USAR CENTER

INSTALLATION NUMBER: PA076 DATE: 5-6 APR 2000

NUMBER OF BUILDINGS ON SITE: 2
GROSS SQUARE FEET OF BUILDINGS: 34,317 GSF
SQUARE YARDS OF PAVED AREAS:
MEP: POV: ACCESS ROAD: 0
SIDEWALKS: TOTAL:

AREA OF GROUNDS:
IMPROVED: UNIMPROVED: TOTAL:
FLOOD PRONE AREA: YES __ NO _X_ WETLANDS: YES __ NO _X_

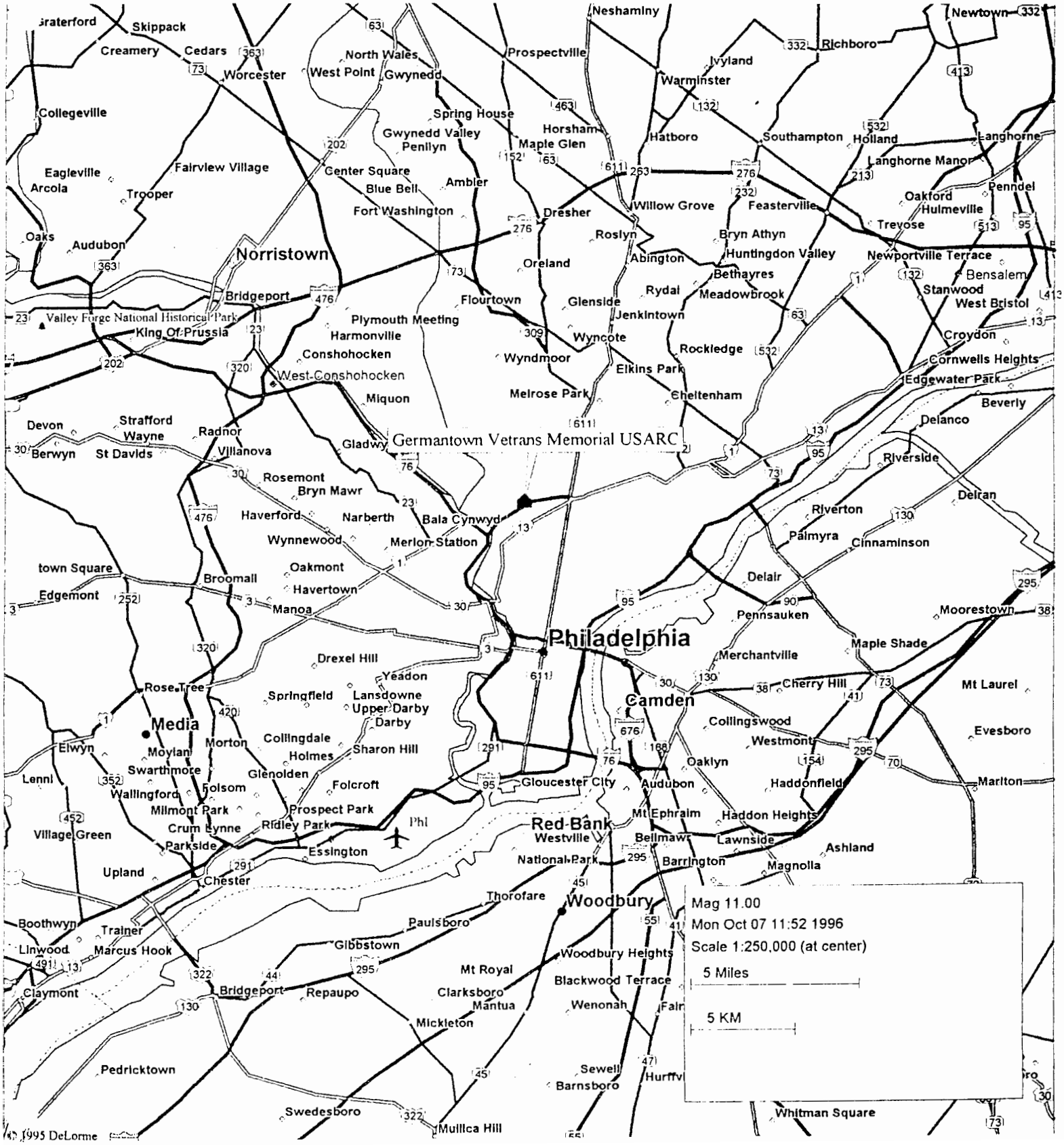
OWNERSHIP DATA:	ARMY	OTHER DOD	OTHER FED	LEASED	OWNER NAME (NON ARMY)
BLDGS:	X				
LAND:	X				

YEAR CONSTRUCTED: 1957
AFRC:
AMSA:
YEAR OF LAST MAJOR IMPROVEMENTS OR EXPANSIONS:
AFRC:
AMSA:
RECURRING NON-TRAINING ACTIVITIES:

SECTION 4: GRAPHICAL DATA

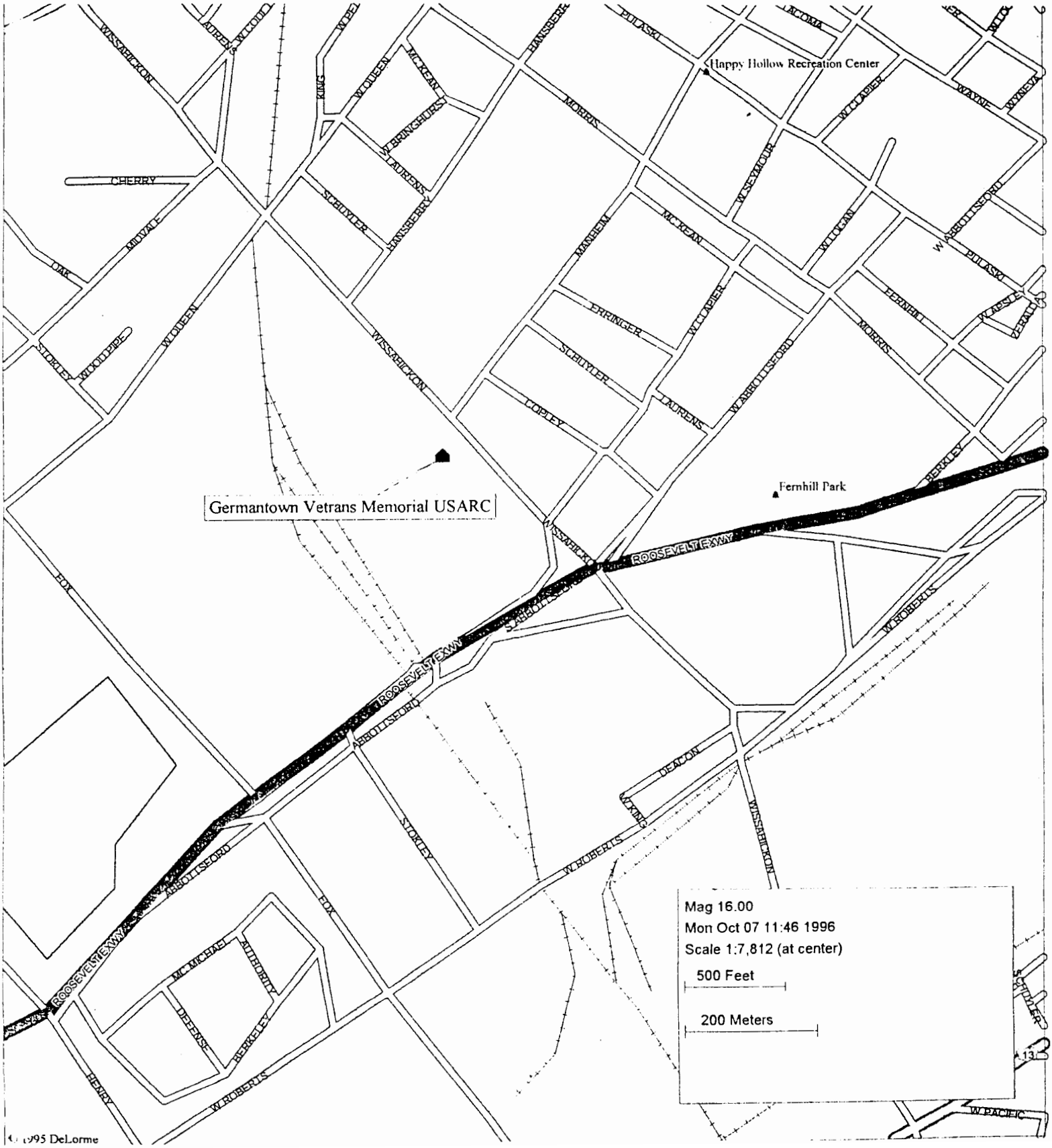
SECTION 4.B – LOCATION MAP

GERMANTOWN VETERANS MEMORIAL USARC

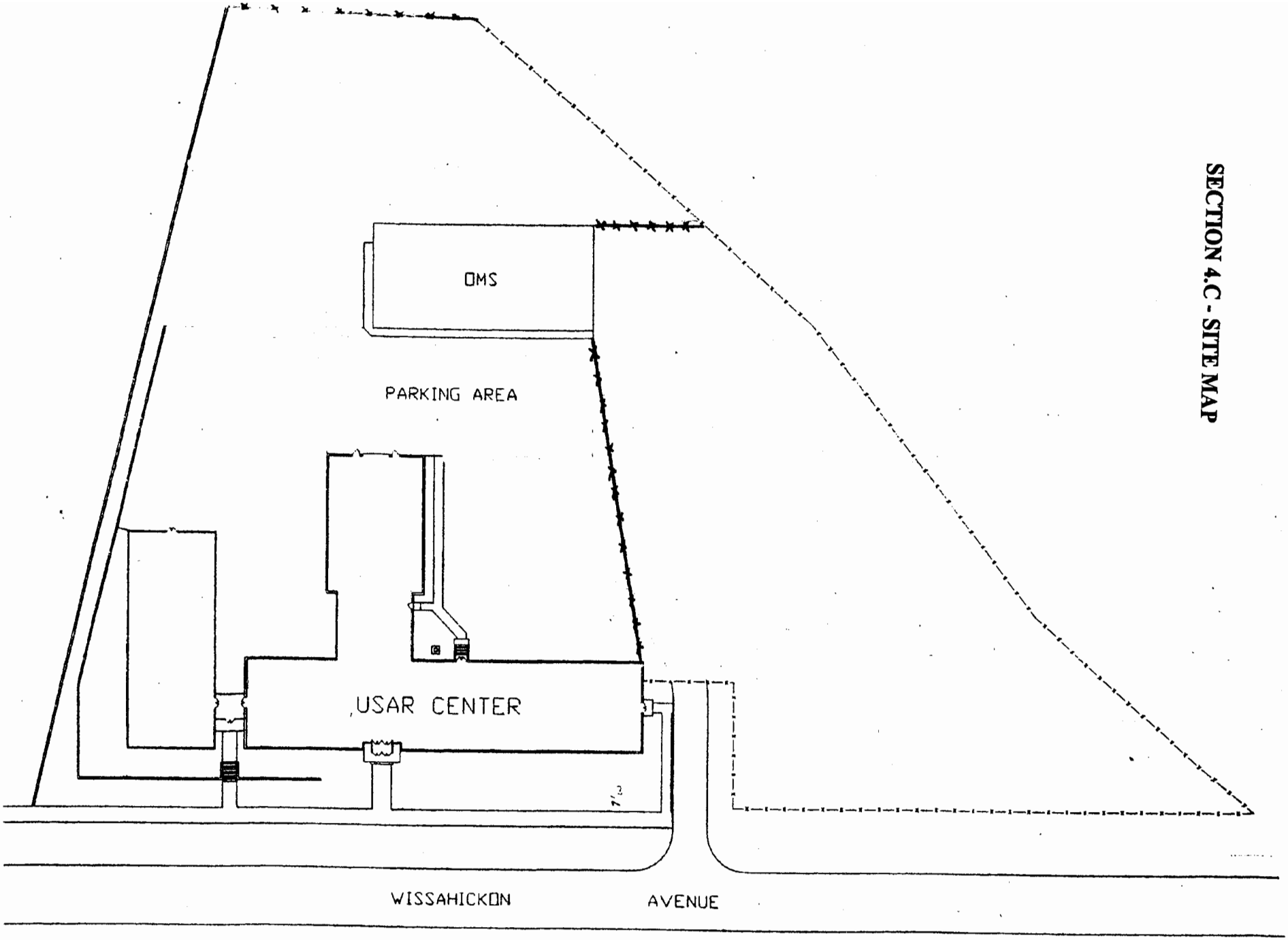


SECTION 4.B – LOCATION MAP

GERMANTOWN VETERANS MEMORIAL USARC

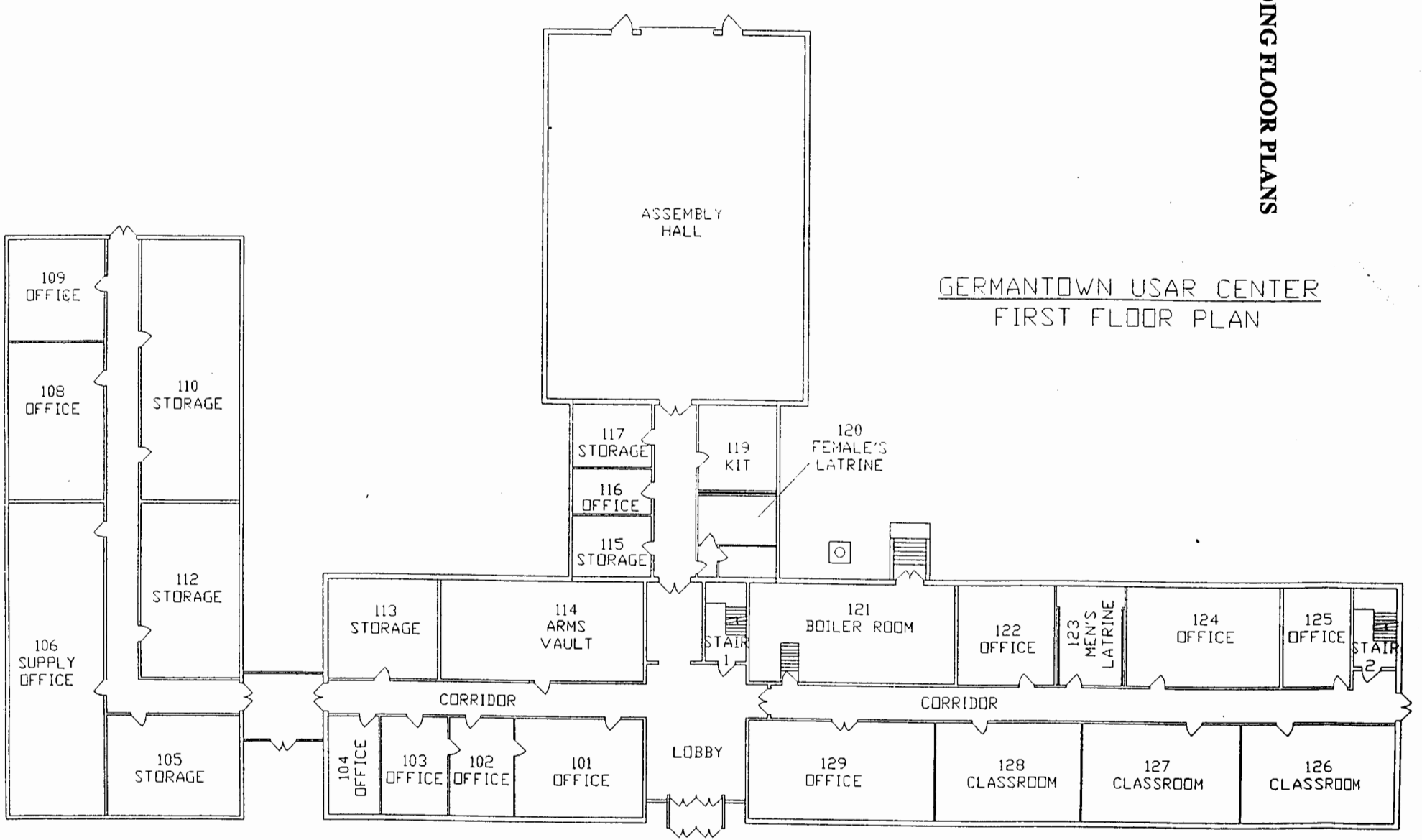


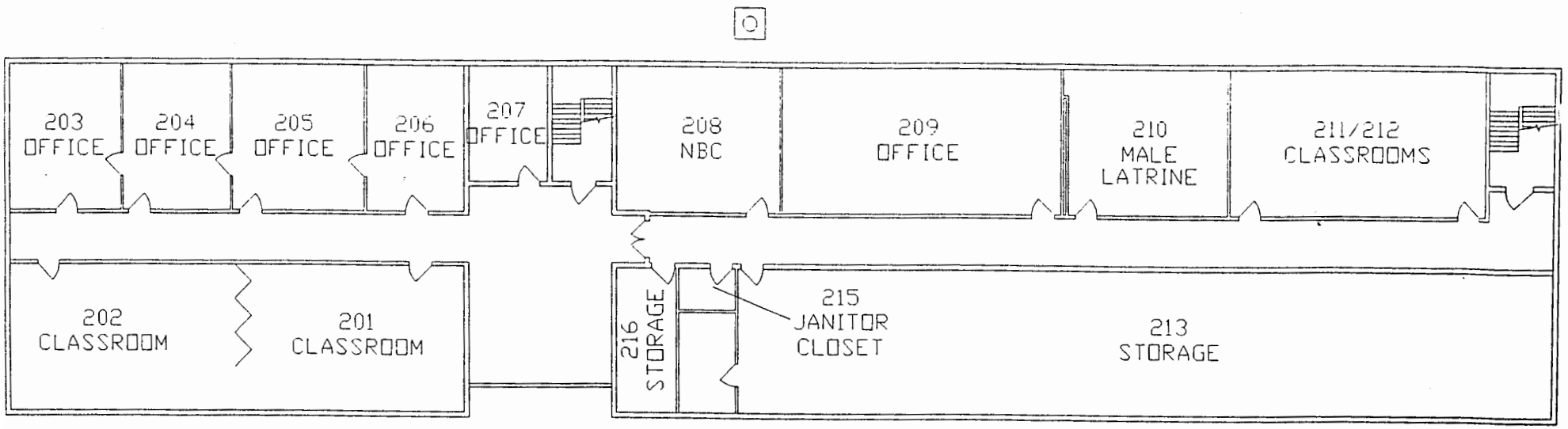
SECTION 4.C - SITE MAP



GERMANTOWN USAR CENTER
SITE PLAN

GERMANTOWN USAR CENTER
FIRST FLOOR PLAN





GERMANTOWN USAR CENTER
SECOND FLOOR PLAN

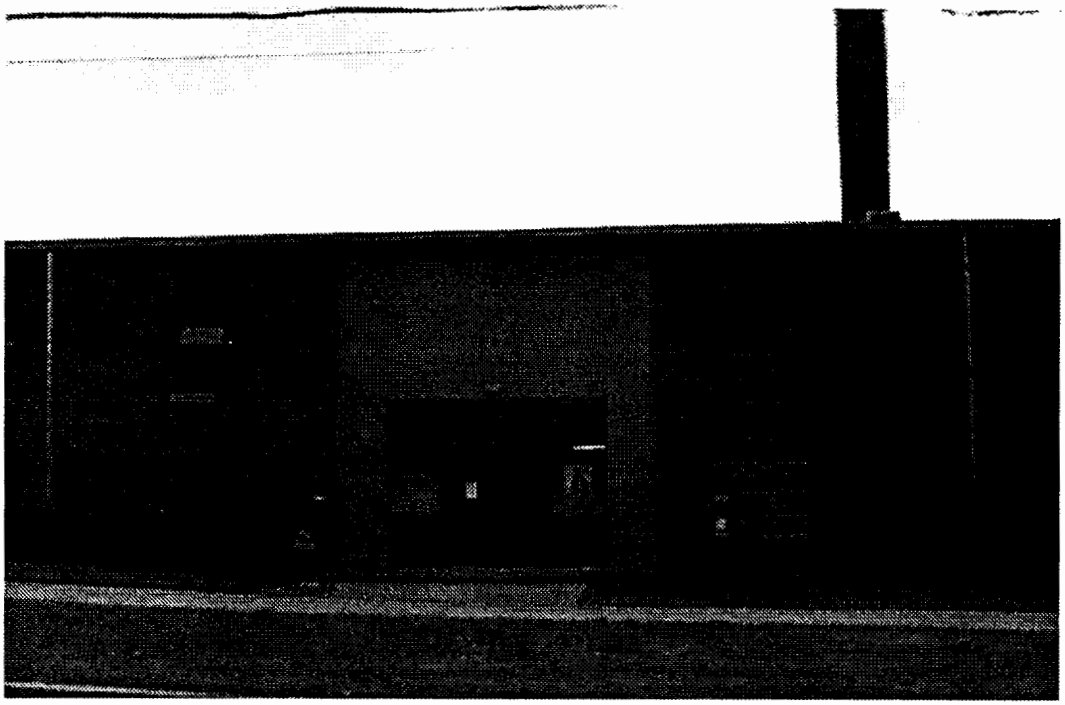


Photo 1: Front (West) of Germantown USARC

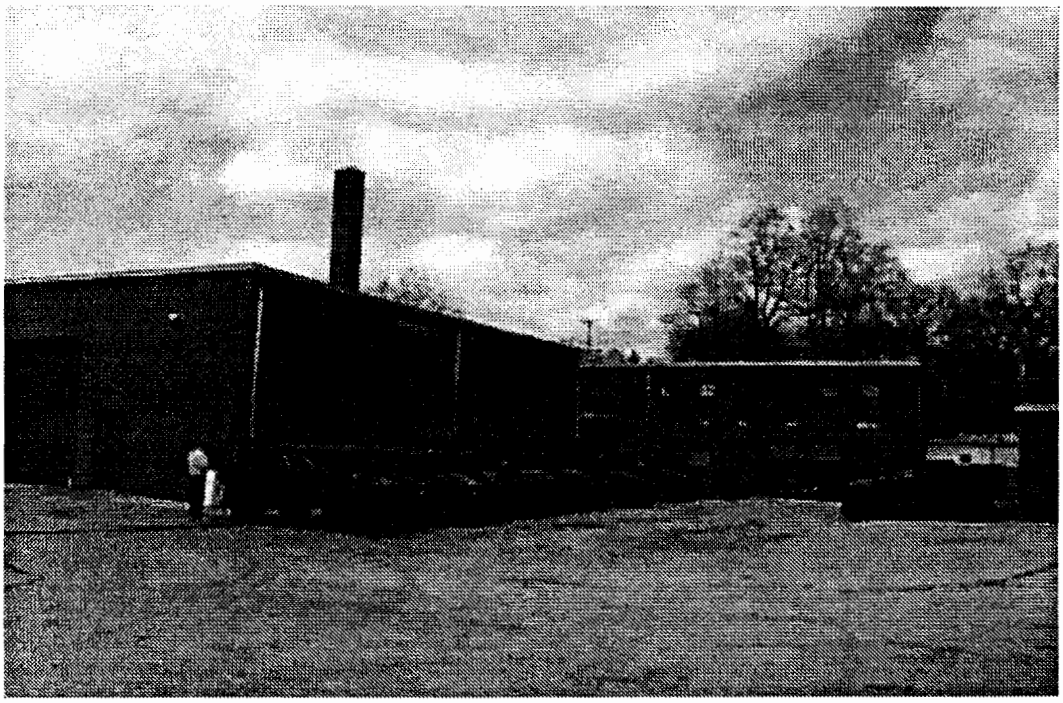


Photo 2: SW Corner of the Drill/Assembly Hall and USAR Center

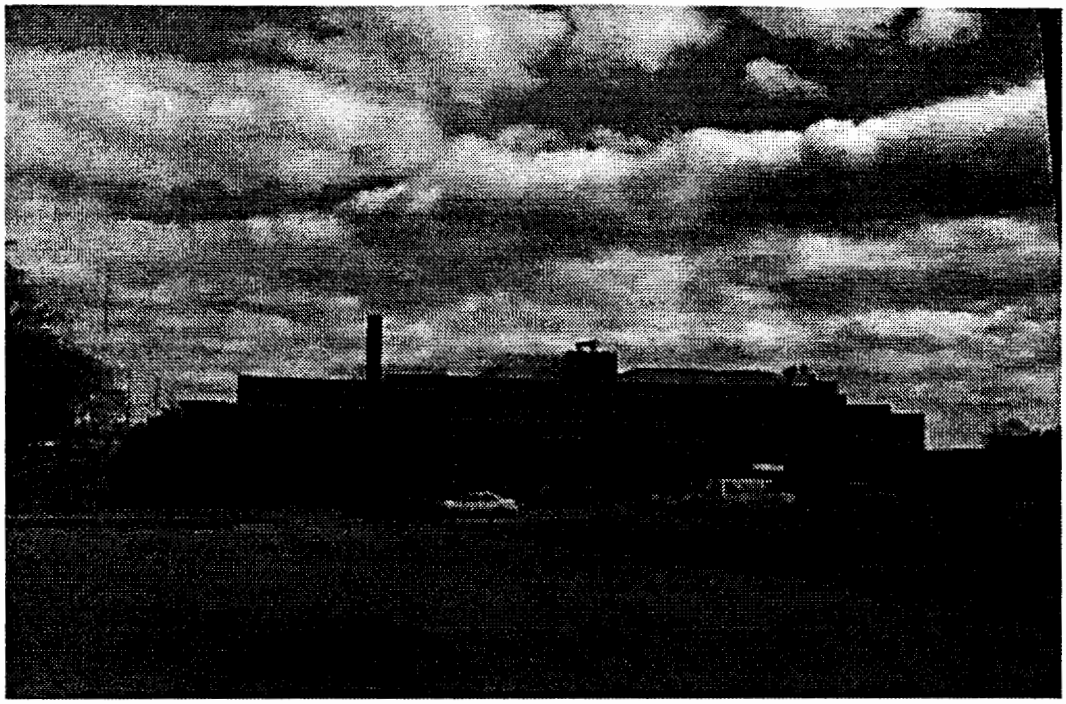


Photo 3: Parking Lot, USAR Center with attached drill hall, and OMS with VA Administration building in Rear. Facing South from POV parking lot.

Photo 4: UST Cover and Heating / Cooling System (rear of USAR Center)

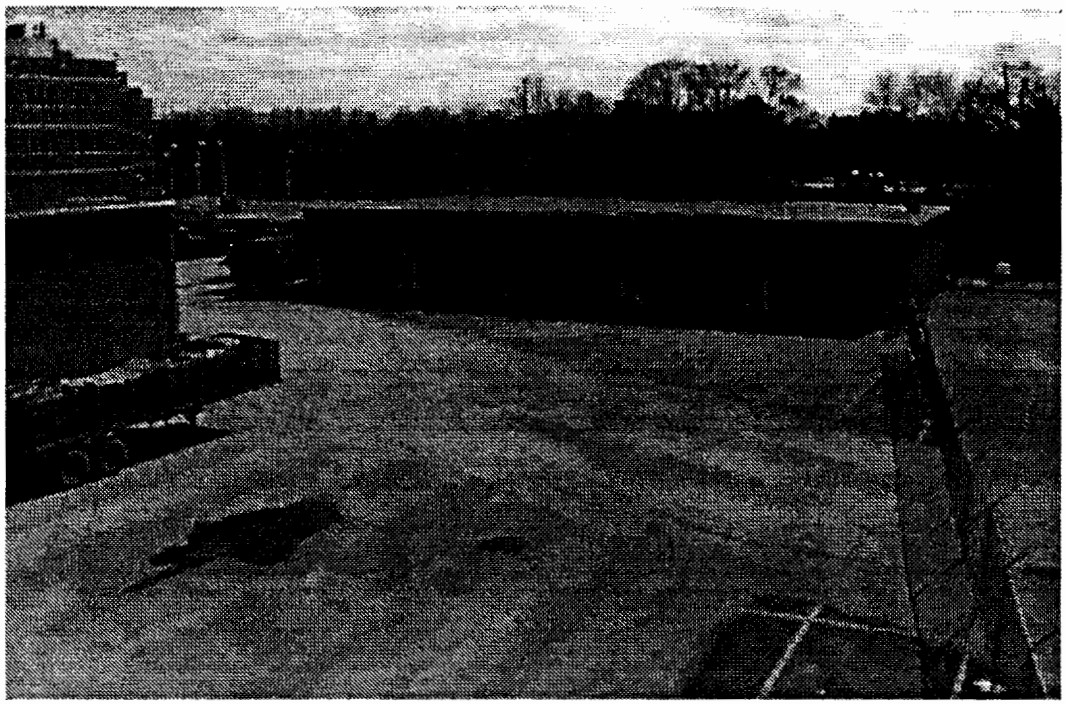


Photo 5: Top View facing West toward MEP and OMS.

Photo 6: Vegetation in close proximity to transformers.

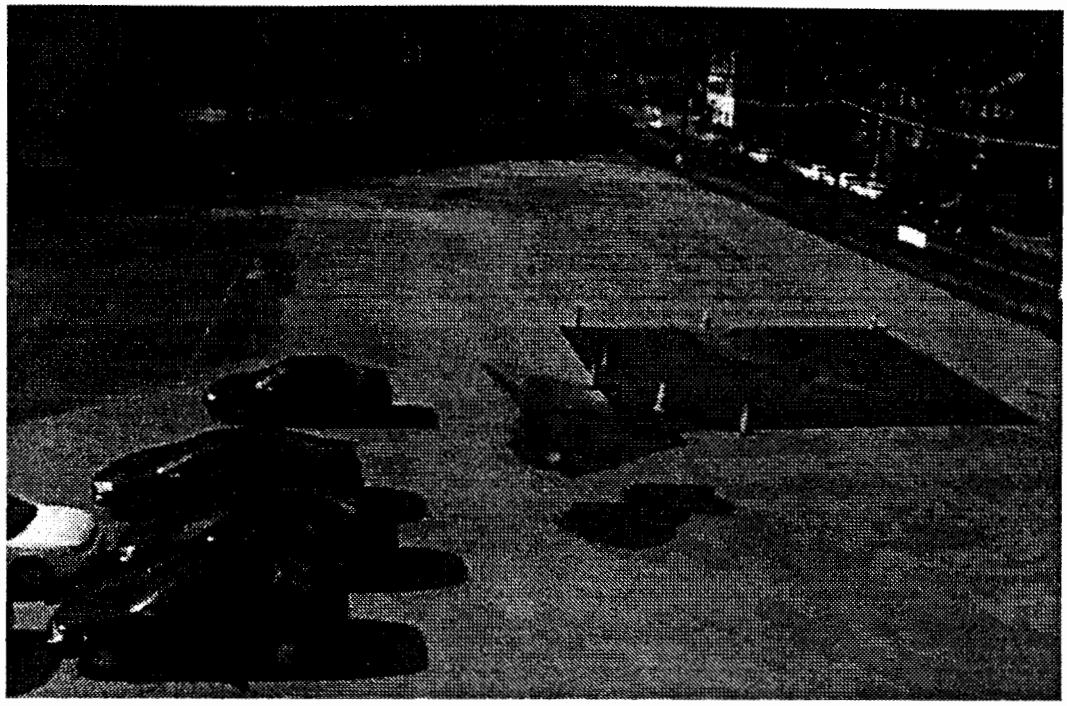


Photo7: Top View facing North (POV Parking Lot).
Note pitch of previous and current setting.

Photo 8: Sink Hole in MEP

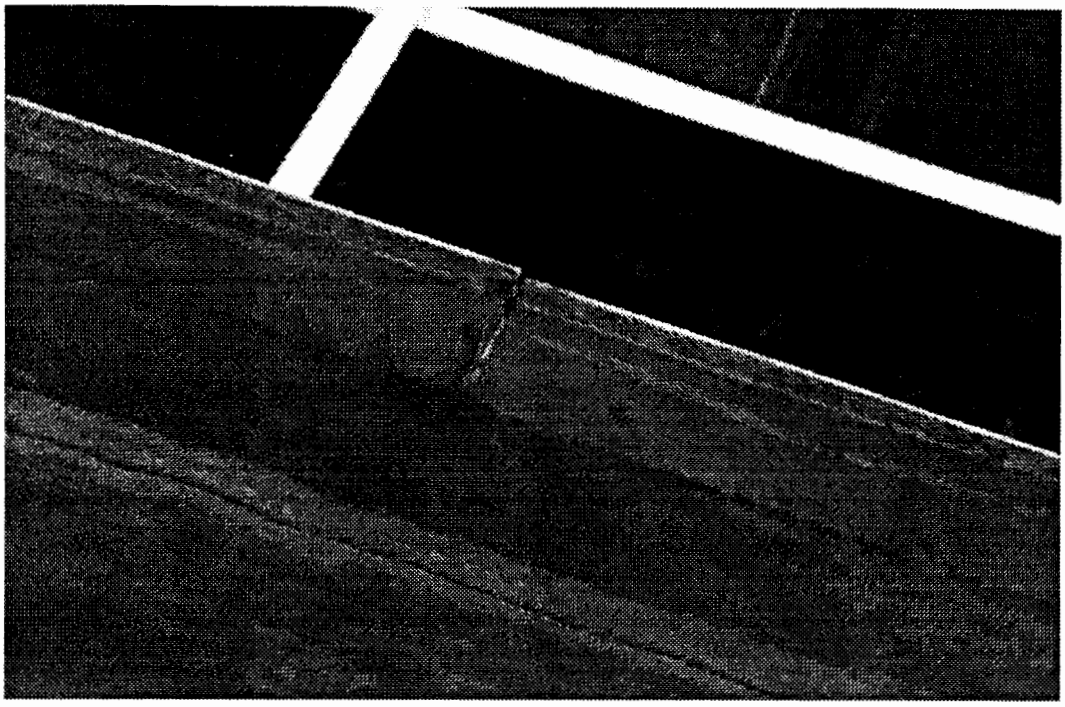


Photo 9: Roof tear on West side of USAR Center above entrance to drill hall.

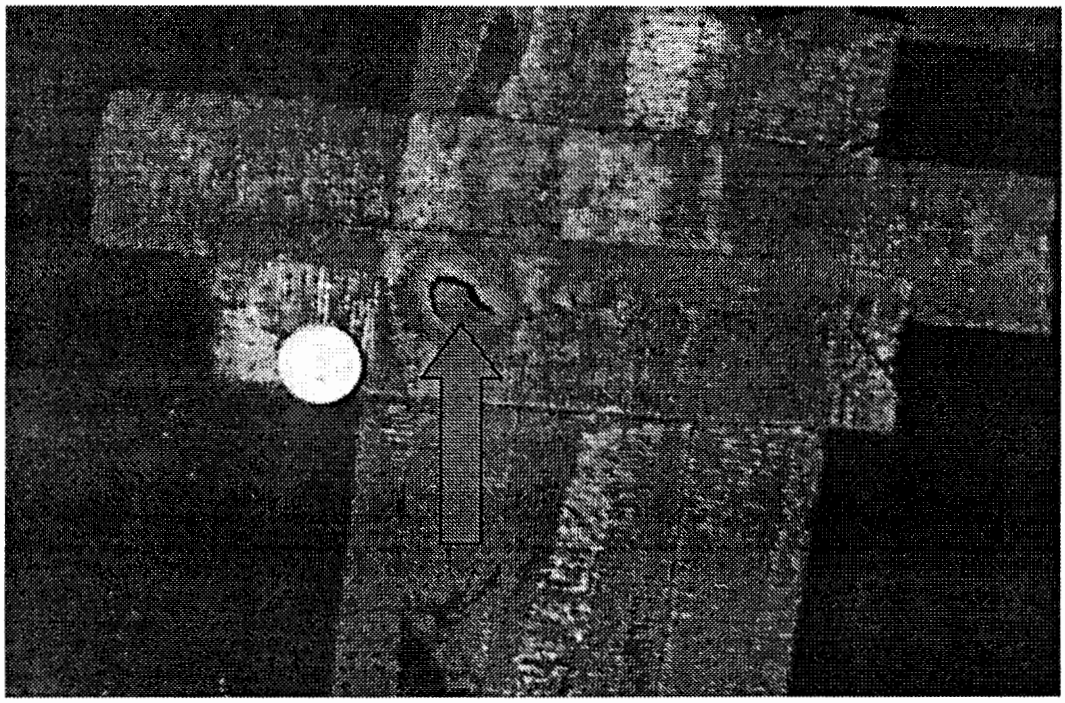


Photo 10: Roof hole in close proximity to vent pipe over drill hole.
(A quarter is used to show comparison of hole size)

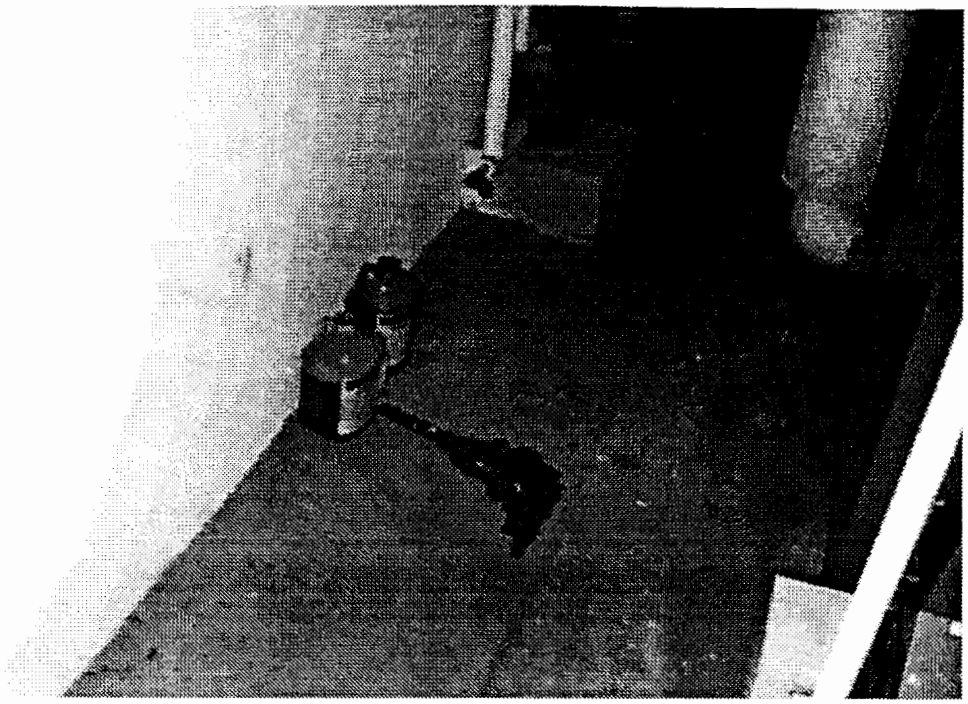


Photo 11: HAZMAT improperly stored in Boiler Room.

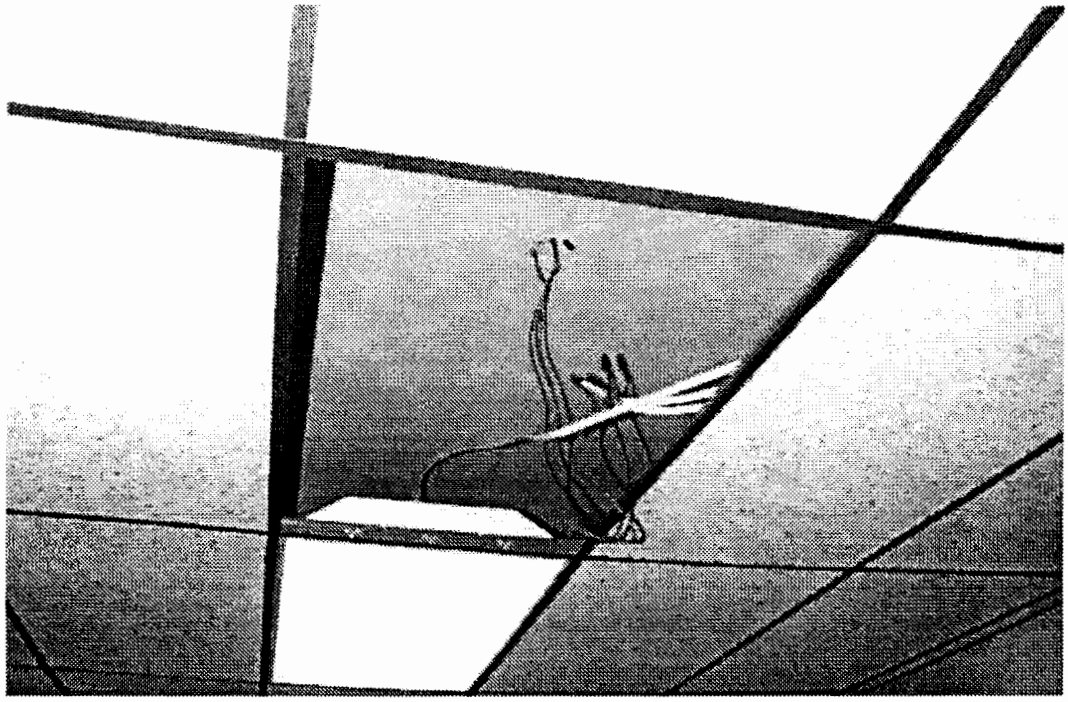


Photo 12: No junction box in conference room (wiring under drop ceiling).

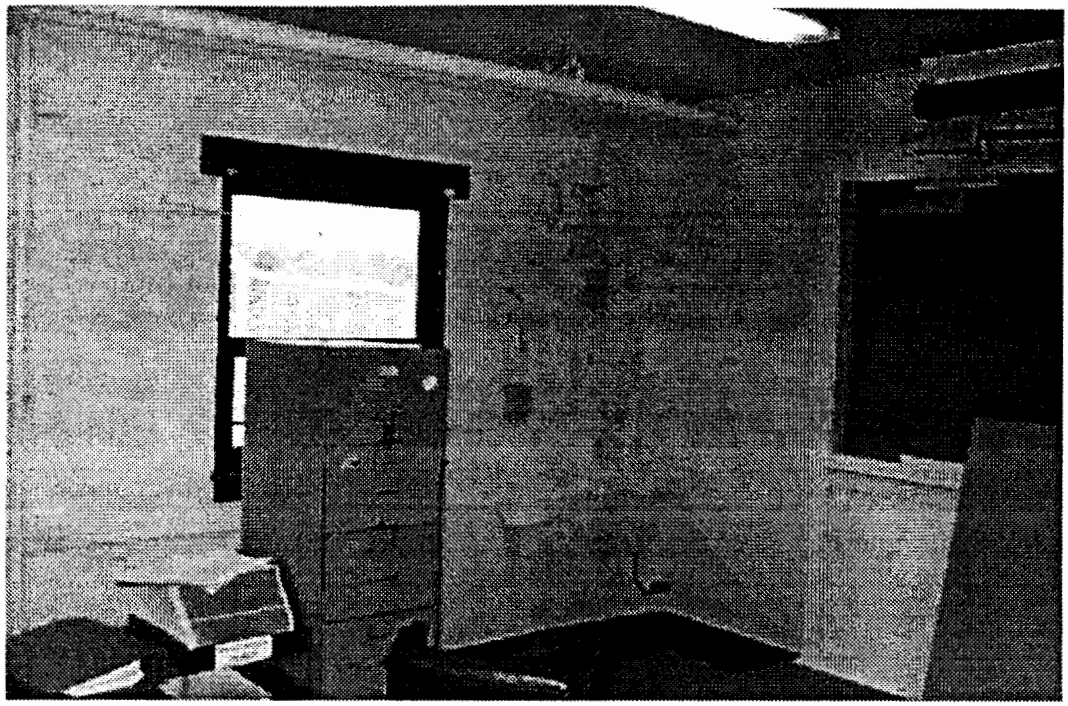


Photo 13: Peeling paint in room 107.

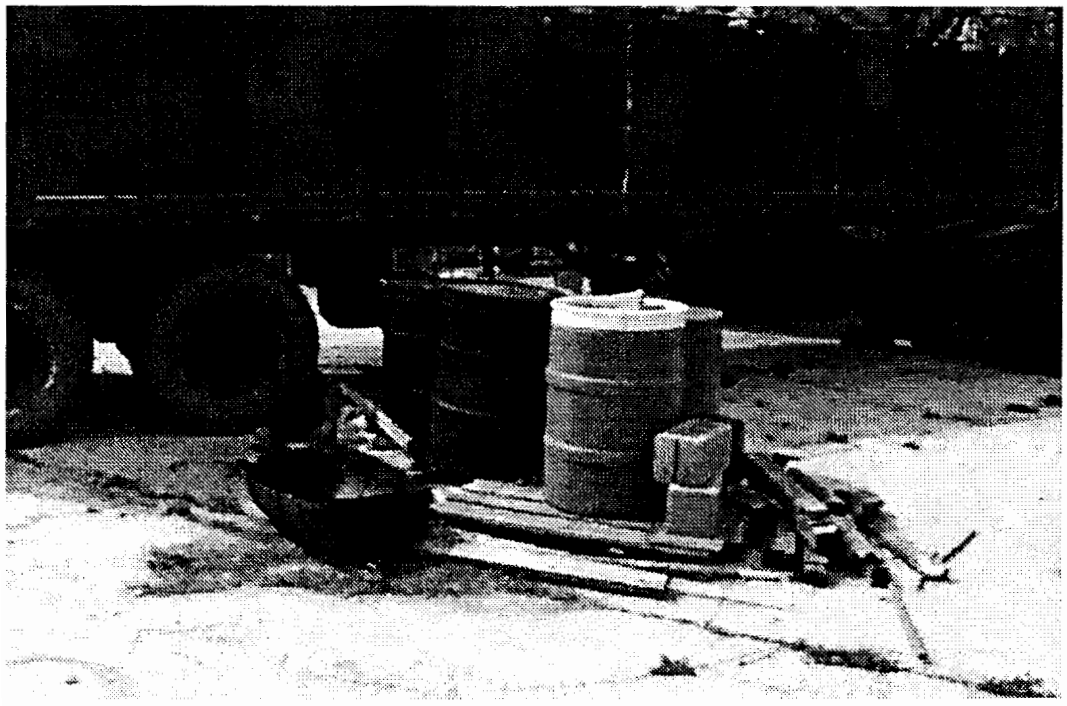


Photo 14: Unlabeled drums in the open (poor housekeeping).

Photo 15: Covered drain to the North of the OMS.
Exposed Magnesium batteries in background of photo (housekeeping).

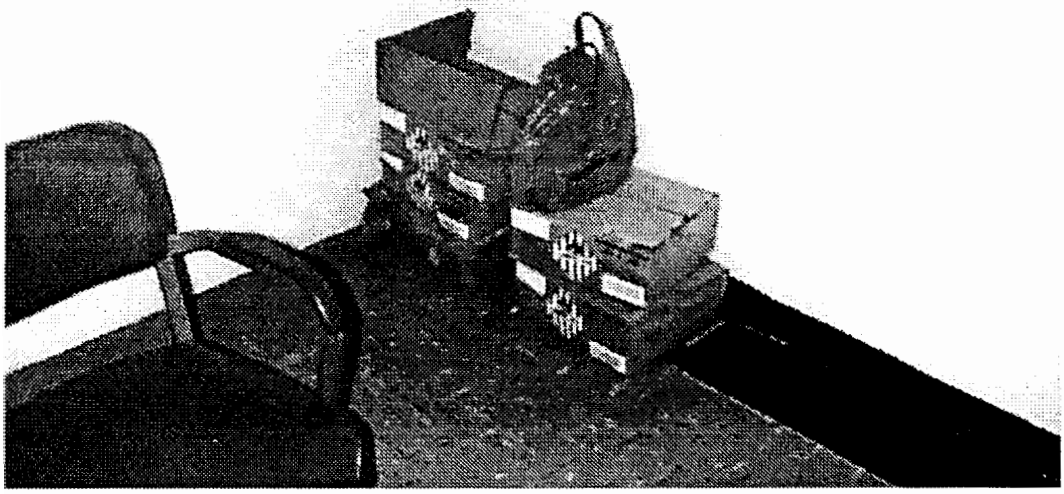


Photo 16: Improperly stored lithium batteries in room 124.

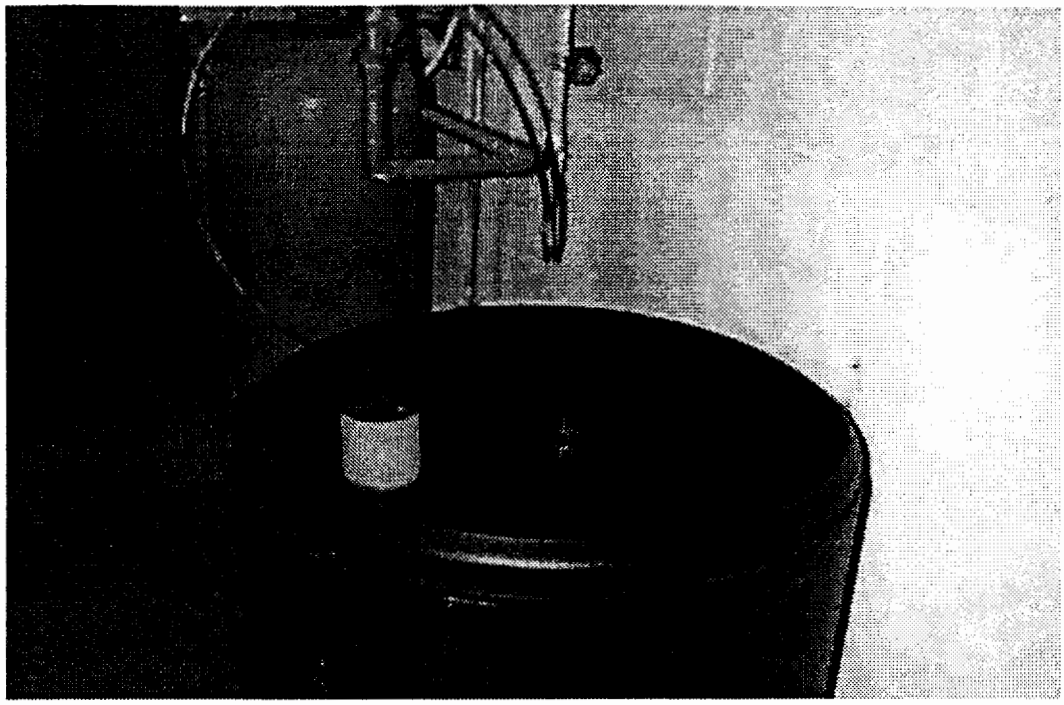


Photo 17: Water softener system: No salt for tank and service light 'on'.

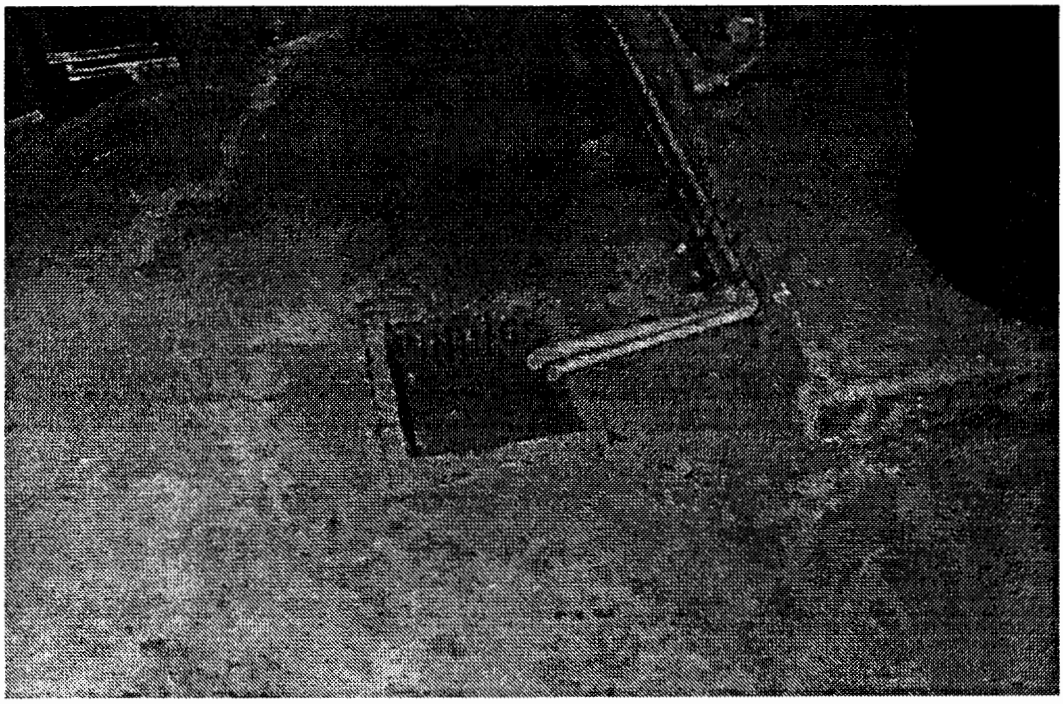


Photo 18: Floor drain in Boiler room.

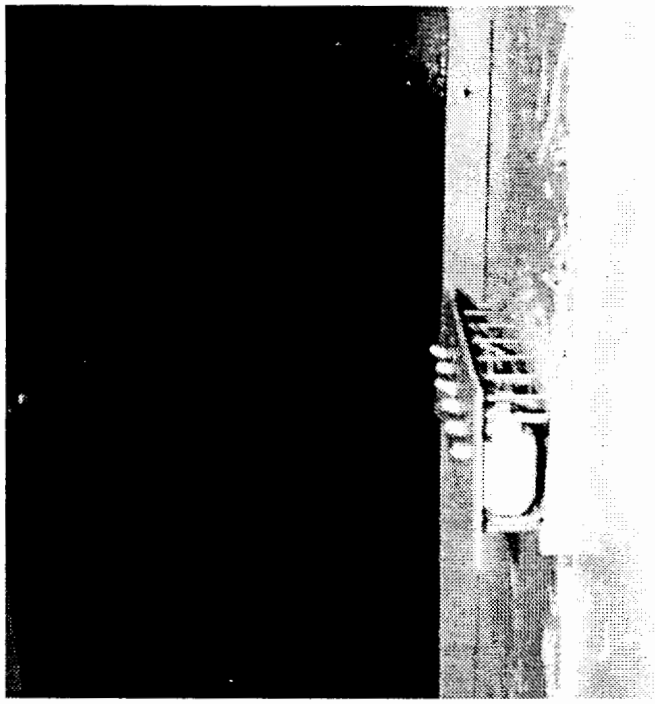


Photo 19: Room 213 (Old Rifle Range/Current locker room)
Exposed wiring on electrical switches / portion of acoustical wall remains (suspect asbestos)

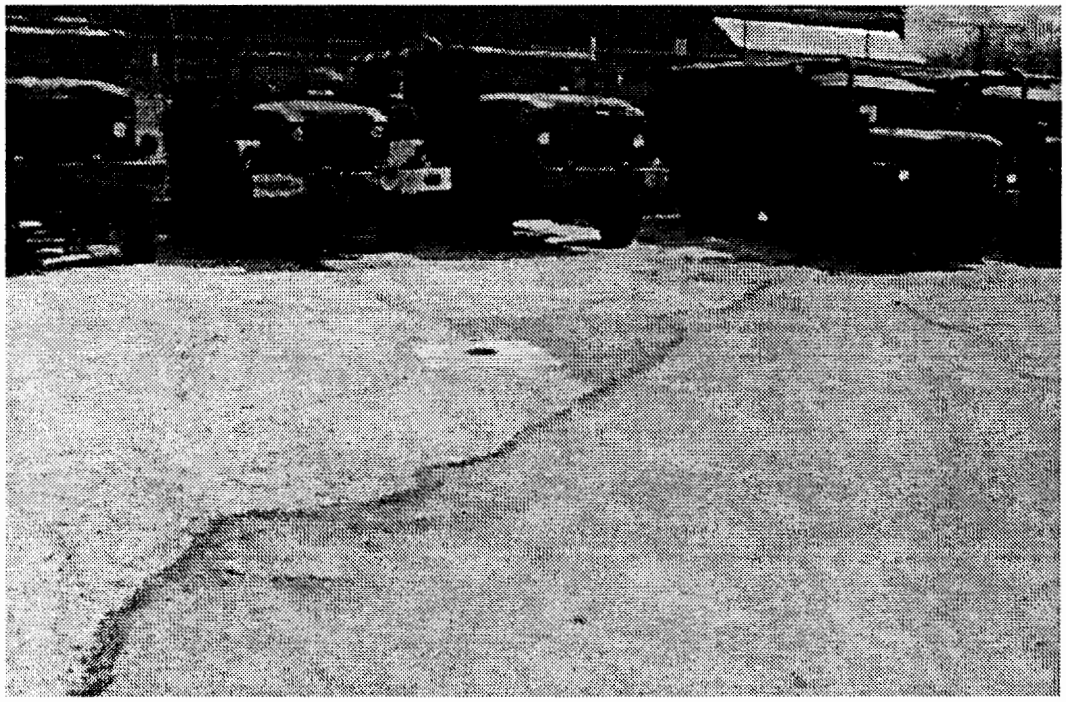
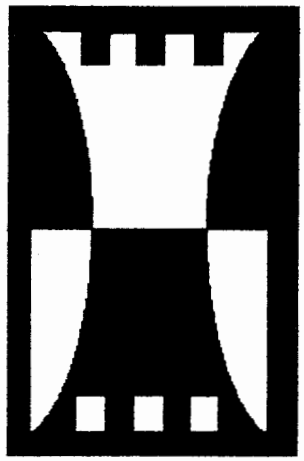


Photo 20: Ground Water Monitoring Well(s) throughout MEP.
Excessive pavement cracking in MEP.

ENCLOSURE A

DEPARTMENT OF THE ARMY
UNITED STATES ARMY FACILITY ENGINEER GROUP
416TH ENGINEER COMMAND
TDA AUGMENTATION
10 South 100 Frontage Road
Darien, IL 60561-1780



ENVIRONMENTAL COMPLIANCE ASSESSMENT

For

Germantown Veterans Memorial USAR Center

Germantown, Pennsylvania
Facility I.D. No. PA076

Date of Visit: 5-6 April 2000

PREPARED BY:

FACILITY ENGINEER GROUP (416th ENCOM)
FACILITY ENGINEER CENTER - NORTHEAST

FORT INDIANTOWN GAP
FACILITY ENGINEERING TEAM
Annville, Pennsylvania

416th ENGINEER COMMAND

ENCLOSURE A

USAR FACILITY
ENVIRONMENTAL COMPLIANCE ASSESSMENT

for the

GERMANTOWN
USAR CENTER

GERMANTOWN, PA

Prepared by the

416TH ENCOM FE TDA

FT. MEADE, MD: ESG-E

Fort Indiantown Gap FET

Performed on

5,6 APRIL 2000

ENCLOSURE A

416th ENGINEER COMMAND
USAR FACILITY
ENGINEERING AND ENVIRONMENTAL
FACILITY ASSESSMENT

ENVIRONMENTAL COMPLIANCE ASSESSMENT

INSTALLATION NAME: Germantown USAR Center

INSTALLATION NUMBER: PA076 DATE: 5,6 APRIL 2000

TABLE OF CONTENTS

SECTION 1: EXECUTIVE SUMMARY

INSTALLATION NAME: Germantown USAR Center

INSTALLATION NUMBER: PA076 DATE: 5,6 APRIL 2000

1. As part of the Engineering and Environmental Facility Assessment (E2FA) at the USAR facility, an environmental compliance assessment was conducted. The Germantown USAR Center consists of two buildings, the two story brick construction main center and a single story brick OMS.

2. The E2FA identified 2 Regulatory Class I, 4 Regulatory Health and Safety, 13 Class III Management, and 1 positive management findings.

3. Significant findings are summarized in the comments below.

- Interviews with facility personnel and a review of available facility documentation, indicate that two heating oil underground storage tanks (UST) were removed from the facility in December 1992. Subsurface petroleum impact to soils and groundwater was confirmed. A 1995 Baltimore Army Corps of Engineer work plan specifies the installation of a product recovery system in one of the groundwater monitoring wells already installed at the site. To date, this recovery system has not been installed. Free phased petroleum (heating oil) is floating on groundwater beneath the site. This is a violation of the Pennsylvania Clean Streams Law.
- Two ground-mounted electrical transformers suspected to contain PCBs were identified during the E2FA. The transformers were not marked in accordance with the Toxic Substances Control Act (TSCA).
- Asbestos containing materials have been historically documented at the facility. An asbestos survey was not available for review during the E2FA inspection. The FIG Team obtained a copy of the asbestos inspection for the facility and forwarded it to Mr. John Pontier, CST#2, on May 6, 2000 .
- Asbestos has been identified at the facility, however no Asbestos management plan was available for review.
- One 2500 gallon capacity UST storing heating oil as well as containers of POL products were identified during the E2FA inspection. A current SPCC plan was not available for review.
- Spill containment at the 2500 gallon heating oil UST was full of debris during the E2FA inspection. The UST fill cap protector did not fit properly, and there was no record of monthly checks of the UST interstitial monitoring device.

SECTION I: EXECUTIVE SUMMARY (Cont.)

4. The facility coordinator, Ms. Yvonne Deloatch, was extremely helpful during the E2FA process. Ms. Deloatch maintains a fairly extensive record of historical environmental activities relating to facility operations. Ms. Deloatch expressed appreciation for our audit of the facility and promised to assign high priority in resolving the environmental concerns.

Douglas F. Garner
LTC, EN, USAR
FIG FET, Team Leader

SECTION 2: FACILITY IDENTIFICATION

INSTALLATION NAME: Germantown USAR Center

INSTALLATION NUMBER: PA076 DATE: 5,6 April 2000

STREET ADDRESS: 5200 Wissahickon Avenue
CITY/TOWN: Philadelphia
STATE: Pennsylvania
ZIP CODE: 19144-4095

RSC/RSG: 99TH RSC, Oakdale, Pennsylvania

FACILITY TYPE:

A. USARC:	X	B. AFRC:		C. OMS:	X	D. FLIGHT:	
E. DS/GS:		F. MED:		G. WET:		H. FLIGHT:	
I. ECS:		J. CTF:		K. OTHER:			

ASSESSMENT PERFORMED BY: Fort Indiantown Gap FE TDA Team

FACILITY ENGINEERING TEAM INCLUDED:

LTC Douglas Garner MAJ John Holtzman

REFER TO FOR INFORMATION: MAJ John A. Holtzman
1210 Lyter Road
Dauphin, PA 17018
(717)232-0593, (717)232-1799 FAX
E-mail: Jholtzman@skellyloy.com

PERSONNEL CONTACTED ON SITE:

NAME/GRADE	DUTY POSITION	PHONE NUMBER
Ms. Yevonne Deloatch	Facility Coordinator	(215) 848-9100

ASSESSMENT CONDUCTED FROM: 05 April 00/1000 (DATE/TIME) TO: 06 April 00/1600 (DATE/TIME)

DATE OF LAST ASSESSMENT: 16-18 September 1996

SECTION 3: INSTALLATION/ASSESSMENT

INSTALLATION SCREEN

*FFID: PA-2104PA076
□
*Installation Name: GERMANTOWN VETERANS MEM USARC
□
Installation Category: R
□
MACOM: USARC

MUSARC:
□
BASOPS ARCOM: 99TH
Support Installation: FORT INDIANTOWN GAP
Facility / Activity Type: 1) RM 2) OM 3) 4) 5)

EPA Region: 3
Congressional District:
Address: 5200 Wissahickon Avenue

City: Philadelphia
State: PA
Country: USA
Zip Code: 19144-4095

ASSESSMENT SCREEN

*Fiscal Year: 2000 *Assessment Date (MM/DD/YYYY): 04/05/2000
*Assessment Type: E
*Manual Used: T

Manual Supplement Used: S

Local Manual (OCONUS: MACOM Specific Manual)
Date (MM/YYYY): /
Author:
Title:

State Manual (OCONUS: Country Specific Manual)
Date (MM/YYYY): /
Author:
State Postal Code or Country Code:

*Assessor Name: 416 FEC-NE, FTIG TEAM
Point of Contact: MAJOR JOHN A.HOLTZMAN

Address: BUILDING 4-96
FTIG
City: ANNVILLE
State: PA
Zip Code: 17003-5029
Phone: (717)861-2384

For Contract ECAS

Contract Number:
Delivery Order Number:
Contracting Office:

SECTION 4: SUMMARY OF FINDINGS

TABLE 1-1

SUMMARY OF FINDINGS

INSTALLATION: GERMANTOWN VETERANS MEM USARC Fiscal Year: 2000
FFID: PA-2104PA076

SECTION NO.	TITLE	REGULATORY I	REGULATORY II	REGULATORY HS	MANAGEMENT POS	MANAGEMENT III	MANAGEMENT HS	TOTAL
A	Air Emissions	0	0	0	0	0	0	0
C	Cultural Resources	0	0	0	0	1	0	1
HM	Hazardous Materials	0	0	2	0	0	0	2
HW	Hazardous Waste	0	0	0	0	1	0	1
NR	Natural Resource	0	0	0	0	0	0	0
O1	Environmental Impacts	0	0	0	0	0	0	0
O2	Environmental Noise	0	0	0	0	0	0	0
O3	IRP	0	0	0	0	0	0	0
O4	Pollution Prevention	0	0	0	0	0	0	0
O5	Program Management	0	0	0	0	0	0	0
PM	Pesticide	0	0	0	0	0	0	0
PO	POL	0	0	0	0	3	0	3
SO	Solid Waste	0	0	0	0	1	0	1
ST	Storage Tanks	1	0	0	0	3	0	4
T1	PCB	1	0	0	0	0	0	1
T2	Asbestos	0	0	0	1	1	0	2
T3	Radon	0	0	0	0	2	0	2
T4	Lead Based Paint	0	0	2	0	0	0	2
WA	Wastewater	0	0	0	0	1	0	1
WQ	Water Quality	0	0	0	0	0	0	0
	TOTALS	2	0	4	1	13	0	20

Data File Name Prefix: C:\ECAS\PA010
Date Summary Report Produced: 07/08/0

SECTION 5: FINDING SHEETS

□

C.5.1 #1 III FEDERAL FINDING Cultural Resources

FINDING ID: PA076-005
MANUAL QUESTION NUMBER: C-005-001
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: A CULTURAL/HISTORIC SURVEY WAS REQUESTED 25FEB93. THERE IS NO RECORD OF THIS SURVEY AT THE FACILITY.

CRITERIA: All Federal agencies are required to establish a program to locate, inventory, and nominate to the SOI all properties under the agency's ownership or control that appear to qualify for inclusion on the National Register of Historic Places (36 CFR 60.9).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): FACILITY MANAGER AND CST SEARCH FOR DOCUMENTATION AND FORWARD TO THE FACILITY COORDINATOR (COMMANDER).

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

HM.10.1 #1 HS FEDERAL FINDING Hazardous Materials

FINDING ID: PA076-013
MANUAL QUESTION NUMBER: HM-010-001
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: THE FACILITY COMMANDER NEEDS TO IDENTIFY PERSONNEL ON APPONTMENT ORDERS TO HANDLE ENVIRONMENTAL CONCERNS AT THE FACILITY. THESE INDIVIDUALS SHOULD ATTEND THE OSHA 40 HOUR HAZWOPER COURSE. THE IDENTIFIED INDIVIDUALS SHOULD PREPARE A SITE SPECIFIC WRITTEN HAZCOM PROGRAM.

CRITERIA: Installations/CW facilities are required to have a written hazard communication program that is designed to provide all employees with information about the hazardous chemicals to which they are exposed (29 CFR 1910.1200(b)(1) and 1910.1200(e)(1)) [February 1995].

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): APPOINT INDIVIDUALS ON ORDERS TO HANDLE ENVIRONMENTAL ISSUES.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

HM.35.9 #1 HS ARMY/DOD FINDING Hazardous Materials

FINDING ID: PA076-012
MANUAL QUESTION NUMBER: HM-035-009
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: CHARCOAL STARTING FLUIDS, PAINTS, WD-40, ETC. NOT STORED IN FLAMMABLE STORAGE CABINETS.

CRITERIA: Areas where flammable/combustibles are stored must meet certain fire protection standards (29 CFR 1910.106 (d)(7)) [April 1995].

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): CONSOLIDATE ALL FLAMMABLE LIQUIDS INTO FLAMMABLE STORAGE CABINETS.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

HW.1.3.R #1 III ARMY/DOD FINDING Hazardous Waste

FINDING ID: PA076-011
MANUAL QUESTION NUMBER: HW-001-003-R
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: A SITE SPECIFIC HAZARDOUS WASTE MANAGEMENT PLAN WAS NOT AVAILABLE FOR THE FACILITY.

CRITERIA: Each facility will have a written hazardous waste management plan (AR 200-1, para 6-4b).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): FACILITY COMMANDER APPOINT INDIVIDUAL/INDIVIDUALS ON ORDERS TO HANDLE FACILITY ENVIRONMENTAL ISSUES. COORDINATE WITH CST TO PUBLISH SITE-SPECIFIC HAZARDOUS WASTE MANAGEMENT PLAN.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

PO.1.2.R #1 III ARMY/DOD FINDING POL

FINDING ID: PA076-008
MANUAL QUESTION NUMBER: PO-001-002-R
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: OMS PARKING AREA
IFS FACILITY NUMBER:
FACILITY TYPE: OMS - ORGANIZATIONAL MAINTENANCE SHOP

FINDING DESCRIPTION: 5 GALLON CONTAINERS OF SUSPECT POL PRODUCTS WERE IDENTIFIED STORED OUTSIDE WITHOUT SECONDARY CONTAINMENT. THE CONTAINERS WERE NOT LABELED. A PLASTIC SECONDARY CONTAINMENT STRUCTURE WAS OBSERVED IN OMS PARKING AREA. THE CONTAINER WAS OPEN TO THE ELEMENTS. RAINWATER WAS ACCUMULATING IN THE CONTAINER AND WAS BECOMING IMPACTED WITH PETROLEUM PRODUCTS.

CRITERIA: Management and organization of paperwork, materials, and personnel should be done in a manner that prevents noncompliance and recurrence of noncompliance, precludes/minimizes regulatory enforcement actions (including warning letters etc.), promotes good public relations, and addresses systemic weaknesses in the overall operation of the program (MP).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): STORE ALL POL ON A SECONDARY CONTAINMENT PAD IN A COVERED AREA TO PREVENT PETROLEUM IMPACT OF RAINWATER.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
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4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
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_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

PO.2.1.A #1 III ARMY/DOD FINDING POL

FINDING ID: PA076-007
MANUAL QUESTION NUMBER: PO-002-001-A
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: OMS PARKING AREA
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: MILITARY VEHICLE PARKED IN MOTOR POOL WAS LEAKING DIFFERENTIAL FLUID ONTO THE PARKING LOT. NO DRIP PANS WERE OBSERVED BENEATH ANY VEHICLES.

CRITERIA: Installations should evaluate their operations/activities to identify and initiate opportunities for pollution prevention (MP) [July 1996].

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): IDENTIFY VEHICLES WITH FLUID LEAKS. PLACE DRIP PANS BENEATH LEAKING AREA. MONITOR PANS PERIODICALLY.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

PO.5.1.A #1 III ARMY/DOD FINDING POL

FINDING ID: PA076-009
MANUAL QUESTION NUMBER: PO-005-001-A
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: A 2500 GALLON HEATING OIL UST AS WELL AS CONTAINERS OF POL PRODUCTS POSE POTENTIAL RELEASE OF PETROLEUM TO THE ENVIRONMENT. A CURRENT SPCC PLAN WAS NOT AVAILABLE FOR REVIEW.

CRITERIA: The DOD requires SPCC Plans to be developed for a broader range of activities than the Code of Federal Regulations (DOD Directive 5030.41, para D; AR 200-1, para 8-4a).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): PREPARE A SPCC WITH 99TH RSC OR 416TH ENGINEER COMMAND IN-HOUSE STAFF, OR CONTRACT OUT TO A CIVILIAN ENGINEERING FIRM.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____

2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____

4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

SO.10.5 #1 III ARMY/DOD FINDING Solid Waste

FINDING ID: PA076-001
MANUAL QUESTION NUMBER: SO-010-005
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: THE FACILITY DOES NOT HAVE A RECYCLING PROGRAM. THE FACILITY MANAGER OR THE CST SHOULD COORDINATE WITH THE LOCAL MUNICIPALITY TO IDENTIFY RECYCLING OPTIONS. PREVIOUS INVESTIGATIONS INDICATE THAT THE CITY OF PHILADELPHIA WILL ACCEPT RECYCLABLES. NEWMAN PAPER WILL ACCEPT PAPER.

CRITERIA: All facilities are required to collect solid wastes or materials separated for recycling according to a certain schedule (40 CFR 243.203-1).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): FACILITY MANAGER OR CST COORDINATE WITH LOCAL MUNICIPALITY TO MAXIMIZE SOLID WASTE RECYCLING EFFORTS.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

ST.45.2 #1 I STATE FINDING Storage Tanks

FINDING ID: PA076-020
MANUAL QUESTION NUMBER: ST-045-002
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: RECORDS AT THE FACILITY INDICATE THAT ENVIRONMENTAL PRESERVATION ASSOCIATES, INC. (EPA) REMOVED TWO USTS (ONE 12000 GALLON HEATING OIL AT THE USARC AND ONE 1500 GALLON HEATING OIL AT THE OMS) IN DECEMBER 1992. RECORDS INDICATE PETROLEUM IMPACTED SOILS WERE ENCOUNTERED AT THE 1500 GALLON UST REMOVAL AT THE OMS. EPA PERFORMED A LIMITED SUBSURFACE INVESTIGATION AT THE OMS IN 1993. THE INVESTIGATION INCLUDED THE INSTALLATION OF 9 BORINGS. EPA RECOMMENDED ADDITIONAL EXCAVATION OF IDENTIFIED PETROLEUM IMPACTED SOILS. THERE IS NO DOCUMENTATION TO CONFIRM THAT THIS SOIL EXCAVATION WAS EVER COMPLETED. 3 GROUNDWATER MONITORING WELLS WERE INSTALLED. IN 1995 FREE PHASE PETROLEUM WAS IDENTIFIED ON GROUNDWATER IN ONE WELL AND A PETROLEUM ODOR WAS IDENTIFED IN ANOTHER. A JUNE 1995 BALTIMORE DISTRICT ACOE WORK PLAN INDICATES INSTALLATION OF A PRODUCT RECOVERY SYSTEM IN ONE WELL. THERE IS NO INDICATION THIS TASK WAS EVER COMPLETED.

CRITERIA: Installations/CW facilities with UST systems are required to contain and immediately clean up a spill or overfill and report it to the implementing agency within 24 h in specific situations (40 CFR 280.10(c), 280.30(b), and 280.53).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): CST REVIEW EXISTING FILES. CONTACT BALTIMORE ACOE NANCY FLAHERTY (CURRENT PROJECT MANAGER) AT (410)962-6656 TO IDENTIFY PROJECT STATUS. ALSO CONTACT TIMOTHY PECK (PROJECT GEOLOGIST AT EA ENGINEERING AND SCIENCE) AT (410)771-4950. A SYSTEM MUST BE INSTALLED TO RECOVER FREE PRODUCT RELEASED TO GROUNDWATER. THE PETROLEUM IMPACTED SOIL IDENTIFED IN THE 1993 EPA STUDY MUST BE TREATED OTHERWISE PETROLEUM WILL CONTINUE TO IMPACT ADJACENT GROUNDWATER.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED: _____
_____
2) CURRENT STATUS OF THE CA: _____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN: _____
_____
4) ESTIMATED COMPLETION DATE FOR CA: _____
5) REVIEWER'S REMARKS: _____
_____
_____
NAME/OFFICE/PHONE: _____ DATE: _____

ST.30.1.R #1 III ARMY/DOD FINDING Storage Tanks

FINDING ID: PA076-002
MANUAL QUESTION NUMBER: ST-030-001-R
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: HEATING OIL UST AT USARC
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: THE ECAR CONDUCTED IN MARCH, 1994, SUGGESTED THAT THE FACILITY COMMANDER MAINTAIN A LOG OF MONTHLY CHECKS OF THE UST INTERSTITIAL MONITORING DEVICE. THERE IS NO RECORD OF MONTHLY CHECKS AT THE FACILITY.

CRITERIA: USTs used for storing heating oil for consumptive use on the premises where stored are required to meet the requirements in 40 CFR 280 (AR 200-1, para 5-7).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): FACILITY COMMANDER APPOINT AN INDIVIDUAL ON ORDERS TO ACT AS THE FACILITY ENVIRONMENTAL COORDINATOR. MAINTAINA LOG BOOK WHICH RECORDS MONTHLY CHECKS OF THE INTERSTITIAL MONITORING DEVICE.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____

2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____

4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

ST.35.1 #1 III ARMY/DOD FINDING Storage Tanks

FINDING ID: PA076-019
MANUAL QUESTION NUMBER: ST-035-001
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: ONE 2500 GALLON CAPACITY UST STORING HEATING OIL IS LOCATED AT THE USARC. THE FILL SPILL CONTAINMENT IS FULL OF DEBRIS AND THE FILL CAP PROTECTOR COVER DOES NOT FIT PROPERLY.

CRITERIA: New or upgraded USTs are required to be fitted with spill and overfill prevention equipment (40 CFR 280.10(c), 280.20(c), and 280.21(d)).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): CST RESEARCH UST INSTALLATION CONTRACT FOR WARRANTY STIPULATIONS. CLEAN AND REPAIR UST FILL.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

ST.60.1 #1 III ARMY/DOD FINDING Storage Tanks

FINDING ID: PA-076-004
MANUAL QUESTION NUMBER: ST-060-001
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: A WORK ORDER WAS SUBMITTED 9JUN94 TO MONITOR (TIGHTNESS TEST) THE 2500 GALLON HEATING OIL UST AT THE USARC. THERE IS NO RECORD OF THIS TIGHTNESS TEST AT THE USARC.

CRITERIA: Installations/CW facilities with new and existing USTs are required to provide a method, or combination of methods of release detection (40 CFR 280.10(c), 280.10(d), and 280.40).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): FACILITY MANAGER AND CST CHECK FOR RECORDS. FORWARD COPY TO FACILITY COORDINATOR (COMMANDER) FOR FILING AT FACILITY.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

T1.1.2.R #1 I FEDERAL FINDING PCB

FINDING ID: PA076-006
MANUAL QUESTION NUMBER: T1-001-002-R
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: ONE IN-SERVICE GREEN ARMY OWNED GROUND MOUNTED TRANSFORMER AND ONE OUT-OF-SERVICE GRAY ARMY OWNED GROUND MOUNTED TRANSFORMER, LOCATED AT THE USARC ARE NOT LABELED. BOTH TRANSFORMERS ARE SUSPECTED TO CONTAIN PCBS.

CRITERIA: Management and organization of paperwork, materials, and personnel should be done in a manner that prevents noncompliance and recurrence of noncompliance, precludes/minimizes regulatory enforcement actions (including warning letters etc.), promotes good public relations, and addresses systemic weaknesses in the overall operation of the program (MP).

FINDING COMMENTS: TWO GROUND MOUNTED TRANSFORMERS SUSPECTED TO CONTAIN PCB DIELECTRIC FLUIDS. THE TRANSFORMERS ARE NOT LABELED.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): CST SHOULD RESEARCH INFORMATION CONTAINED ON EACH TRANSFORMER DATA PLATE (IF AVAILABLE). TRANSFORMER DIELECTRIC FLUID MAY REQUIRE SAMPLING AND LABORATORY ANALYSIS FOR PCBS. LABEL TRANSFORMERS AS REQUIRED. IF TRANSFORMERS CONTAIN PCB DIELECTRIC FLUIDS, COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND ARMY REQUIREMENTS/REGULATIONS.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

T2.1.4.R #1 III ARMY/DOD FINDING Asbestos

FINDING ID: PA076-017
MANUAL QUESTION NUMBER: T2-001-004-R
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: ASBESTOS CONTAINING MATERIALS EXIST IN THE USARC, THEREFORE AN ASBESTOS MANAGEMENT PLAN IS REQUIRED. NO COPY OF THIS PLAN WAS AVAILABLE AT THE USARC.

CRITERIA: Facilities are required to prepare, coordinate, and execute an Installation Asbestos Management Plan (AR 200-1, para 10-3).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): A PENNSYLVANIA DEPARTMENT OF LABOR AND INDUSTRY LICENSED ASBESTOS MANAGEMENT PLANNER SHOULD BE CONTRACTED (UNLESS ONE IS AVAILABLE IN HOUSE) TO PREPARE AN ASBESTOS MANAGEMENT PLAN FOR THE USARC AND OMS. THE MANAGEMENT PLANNER SHOULD REVIEW AVAILABLE ASBESTOS INSPECTION REPORTS, CODUCT A FACILITY WALKTHROUGH TO VERIFY THAT ALL SUSPECT ASBESTOS CONTAINING MATERIALS HAVE BEEN SAMPLED/TESTED, AND PREPARE A MANAGEMENT PLAN.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

T2.1.3.R #1 POSITIVE ARMY/DOD FINDING Asbestos

FINDING ID: PA076-016
MANUAL QUESTION NUMBER: T2-001-003-R
FINDING CATEGORY: POSITIVE
FINDING TYPE: Positive EXISTING NOV: NO
LOCATION: USARC AND OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: A COPY OF THE ASBESTOS INSPECTION REPORT (AS REQUIRED BY AR200-1) WAS NOT ON HAND AT THE FACILITY DURING THE E2FA INSPECTION. SUSPECT ASBESTOS CONTAINING MATERIALS WERE OBSERVED DURING THE E2FA FACILITY WALKTHROUGH. THE FIG TEAM OBTAINED A COPY OF THE ASBESTOS INSPECTION REPORT PREPARED BY BIOPHYSICS, INC., DACA 31-87-D-0016, IN 1987. ASBESTOS CONTAINING MATERIALS WERE IDENTIFIED. A COPY OF THIS REPORT WAS FORWARDED TO MR. JOHN PONTIER AT CST 2 ON 6MAY00.

CRITERIA: Facilities are required to conduct an asbestos survey (AR 200-1, para 10-2j and 10-3b(1) through 10-3b(3)).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): THE FIG TEAM FORWARDED A COPY OF THE ASBESTOS INSPECTION REPORT TO MR. JOHN PONTIER AT CST 2 ON 6MAY00.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

T3.1.3.R #1 III ARMY/DOD FINDING Radon

FINDING ID: PA076-003
MANUAL QUESTION NUMBER: T3-001-003-R
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: RADON SURVEY DOCUMENTATION WAS NOT AVAILABLE FOR REVIEW. RADON DETECTORS WERE TURNED INTO FTIG ENVIRONMENTAL OFFICE IN 1993-1994.

CRITERIA: All Reserve facilities are required to perform radon measurements according to a prescribed prioritized schedule in order to identify Reserve structures with radon levels above 4 pCi/L with emphasis on identifying Priority I structures with levels greater than 20 pCi/L (AR 200-1, para 11-2a(3) and 11-4).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): CST REVIEW RECORDS TO DETERMINE IF A RADON SURVEY HAS BEEN COMPLETED. FORWARD DOCUMENTATION TO THE FACILITY. IF A RADON SURVEY HAS NOT BEEN COMPLETED, CONTRACT FOR COMPLETION, REVIEW RESULTS AND INSTALL RADON MITIGATION SYSTEMS IF REQUIRED.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

T3.1.3.R #2 III ARMY/DOD FINDING Radon

FINDING ID: PA076-018
MANUAL QUESTION NUMBER: T3-001-003-R
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: RADON SURVEY DOCUMENTATION WAS NOT AVAILABLE FOR REVIEW.

CRITERIA: All Reserve facilities are required to perform radon measurements according to a prescribed prioritized schedule in order to identify Reserve structures with radon levels above 4 pCi/L with emphasis on identifying Priority I structures with levels greater than 20 pCi/L (AR 200-1, para 11-2a(3) and 11-4).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): CST REVIEW RECORDS TO DETERMINE IF A RADON SURVEY HAS BEEN COMPLETED. FORWARD DOCUMENTATION TO THE FACILITY. IF A RADON SURVEY HAS NOT BEEN COMPLETED, CONTRACT FOR COMPLETION, REVIEW RESULTS AND INSTALL RADON MITIGATION SYSTEMS IF REQUIRED.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

T4.20.2 #1 HS FEDERAL FINDING Lead Based Paint

FINDING ID: PA076-014
MANUAL QUESTION NUMBER: T4-020-002
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: USARC/OMS
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: THERE IS NO DOCUMENTATION TO CONFIRM THAT A LEAD BASED PAINT SURVEY HAS BEEN COMPLETED AT THE FACILITY.

CRITERIA: lEAD HAZARD SCREENS ARE REQUIRED TO BE DONE ACCORDING TO SPECIFIC METHODOLOGIES (40CFR745).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): CST REVIEW RECORDS TO DETERMINE IF A LEAD BASED PAINT SURVEY WAS PERFORMED AT THE FACILITY. CST FORWARD A COPY TO THE FACILITY COORDINATOR.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

T4.20.2 #2 HS FEDERAL FINDING Lead Based Paint

FINDING ID: PA076-015
MANUAL QUESTION NUMBER: T4-020-002
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: ROOM 213 USARC
IFS FACILITY NUMBER:
FACILITY TYPE: USARC(MB) - U.S. ARMY RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: ROOM 213 WAS FORMERLY A FIRING RANGE. THERE ARE NO RECORDS TO DOCUMENT THE PROPER CLOSURE (LEAD ABATEMENT) AT THE INDOOR RIFLE RANGE. RT ENVIRONMENTAL AND GILLAN & HARTMANN, INC. PREPARED A FIELD INVESTIGATION AND SAMPLING REPORT, APRIL 27, 1992. LEAD WAS IDENTIFIED. THE RANGE WAS USED IN THE 1950S AND 1960S.

CRITERIA: LBP ABATEMENT IS REQUIRED TO BE DONE ACCORDING TO SPECIFIC METHODOLOGIES (40CFR745).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): CST REVIEW FILES FOR DOCUMENTATION. REVIEW CLOSURE DOCUMENTATION TO VERIFY THAT SAFE LEVELS OF LEAD WERE ACHEIVED DURING THE ABATEMENT.

STATUS OF CORRECTION:

********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

WA.1.2.A #1 III ARMY/DOD FINDING Wastewater

FINDING ID: PA076-010
MANUAL QUESTION NUMBER: WA-001-002-A
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: OMS
IFS FACILITY NUMBER:
FACILITY TYPE: OMS - ORGANIZATIONAL MAINTENANCE SHOP

FINDING DESCRIPTION: AN OLD VEHICLE WASH RACK AND AN OBSERVATION PIT AT THE OMS WERE OBSERVED DURING THE SITE WALKOVER. BOTH STRUCTURES WERE FILLED WITH CONCRETE, HOWEVER NO CLOSURE DOCUMENTATION WAS AVAILABLE FOR REVIEW.

CRITERIA: Management and organization of paperwork, materials, and personnel should be done in a manner that prevents noncompliance and recurrence of noncompliance, precludes/minimizes regulatory enforcement actions (including warning letters etc.) promotes good public relations, and addresses systemic weaknesses in the overall operation of the program (MP).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): FACILITY MANAGER AND CST SEARCH FOR CLOSURE RECORDS. IF DOCUMENTS ARE NOT AVAILABLE, INVESTIGATE THE DISCHARE AREAS FOR BOTH STRUCTURES AND REMEDIATE IF REQUIRED.

STATUS OF CORRECTION:

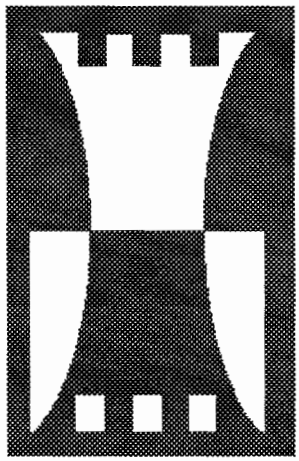
********** INSTALLATION'S RESPONSE: **********

1) CORRECTIVE ACTION (CA) SELECTED:_____
_____
_____
_____
2) CURRENT STATUS OF THE CA:_____
3) ARE ADDED DETAILS OR COST DATA NEEDED TO DESCRIBE THIS CA?: Y__ N__
EXPLAIN:_____
_____
_____
4) ESTIMATED COMPLETION DATE FOR CA:_____
5) REVIEWER'S REMARKS:_____
_____
_____
_____

NAME/OFFICE/PHONE:_____ DATE:_____

ENCLOSURE B

DEPARTMENT OF THE ARMY
UNITED STATES ARMY FACILITY ENGINEER GROUP
416TH ENGINEER COMMAND
TDA AUGMENTATION
10 South 100 Frontage Road
Darien, IL 60561-1780



FACILITY CONDITION SURVEY

For

Germantown Veterans Memorial USAR Center

Germantown, Pennsylvania
Facility I.D. No. PA076

Date of Visit: 5-6 April 2000

PREPARED BY:

FACILITY ENGINEER GROUP (416th ENCOM)
FACILITY ENGINEER CENTER - NORTHEAST

FORT INDIANTOWN GAP
FACILITY ENGINEERING TEAM
Annville, Pennsylvania

FACILITY CONDITION SURVEY
Germantown PA076

ENCLOSURE B

version 06-98

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	001	BUILD_TYP	TNG	YEAR BUILT	1957
PERM	X	SEMI-PERM		TEMP		REHAB		CONVERSION	
INSNO		BLDG_NUM		GSF	28,275	NSF		SITE	
ADD/ALT.								STORY HT	2

ROOF COMPONENT		Yr_Install	EC	VG	GC	AC	FC	PC
ROOF COVERING	(%)							
ELASTROMERIC (EPDM)	100	1990				x		
BUILT-UP (MULTI-PLY)								
BALLAST (GRAVEL/STONE) Y/N								
OTHER (DESCRIBE)								
METAL ROOFING	(%)							
CORRUGATED								
STANDING SEAM								
FLAT SEAM								
OTHER (DESCRIBE)								
SHINGLES & TILES	(%)							
ASPHALT SHINGLES								
CONCRETE TILES								
OTHER (DESCRIBE)								
ROOF EDGES	(LF)							
SHEET METAL								
COPPER								
ALUMINUM	1372	1990				x		
FLASHING	(LF)							
SHEET METAL								
COPPER								
ALUMINUM	1372	1990				x		
NEOPRENE (RUBBER)								
OTHER (DESCRIBE)								
ROOF DRAINS	(EA.)							
GUTTERS & DOWNSPOUTS								
ALUMINUM		1990			x			
STEEL GALVANIZED								
COPPER								
OTHER (DESCRIBE)								
ROOF INSULATION								
FIBERBOARD		1990						
FIBERGLASS								
OTHER (DESCRIBE) RIGID								
OVERALL CONDITION %	55.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

There are cracks and holes in the EPDM. The cracks are along the edges where the flashing has popped up due to inadequate support for the gutters causing leaks and water damage to the building interior and exterior. This water damage has progressed in the drill hall to the point where rot has started in several locations on the wooden roof deck and joists. Several large holes were discovered in the roof membrane, up to 2 inches in diameter. Immediate repair action is necessary to avoid continued building deterioration leading to major repair.

FACILITY CONDITION SURVEY
Germantown PA076

ENCLOSURE B

version 06-98

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	001	BUILD_TYP	TNG	YEAR BUILT	1957	

EXTERIOR (STRUCTURAL):		Yr_Install	EC	VG	GC	AC	FC	PC
FRAME STEEL								
CONCRETE BLOCK (CMU)	100	1957				x		
PRE-ENGINEERED								
OTHER								
EXTERIOR FINISH:	%							
BRICK VENEER	100	1957				x		
STUCCO (DRYVIT)								
WOOD								
METAL SIDING								
OTHER (DESCRIBE)								
FOUNDATION	%							
SLAB	100	1957			x			
CRAWL								
BASEMENT								
OTHER (DESCRIBE)								
OVERALL CONDITION %	50.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

There are areas of the exterior brick that need repointing.

There are cracks in the second floor block wall, on the south side next to rooms 202 and 203.

PAINTING EXTERIOR	%	Yr_Install	EC	VG	GC	AC	FC	PC
FASCIA & TRIM								
STUCCO								
WOOD								
CONCRETE								
GUTTERS & DOWNSPOUTS								
DRIP EDGE								
OTHER (DESCRIBE)								
OVERALL CONDITION %								

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

WINDOWS % or # OPENINGS		Yr_Install	EC	VG	GC	AC	FC	PC
ALUMINUM AWNING TYPE	100	1998	x					
ALUMINUM SINGLE HUNG								
ALUMINUM FIXED								
STEEL PROJECTED								
STEEL FIXED								
WOOD								
DOUBLE HUNG								
CASEMENT								
WEATHER-STRIPPING								
SCREENS								
OTHER (DESCRIBE)								
OTHER (DESCRIBE)								
OVERALL CONDITION %	5.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

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FAC_ID	PA076	FAC_INT	FEE	FA_NUM	001	BUILD_TYP	TNG	YEAR BUILT	1957	

SITE			Yr_Install	EC	VG	GC	AC	FC	PC
ASPHALT	SY	13,400	various					x	
CONCRETE	SY								
GRAVEL	SY								
LIGHTING	EA	12	1998		x				
FENCE/GATES	LF	1865	1998&1992			x			
SIDEWALKS	LF	368	1957			x			
CURB/GUTTER	LF	420	1957			x			
SEWER LINES									
WATER LINES									
DRAINAGE									
LANDSCAPING									
IRRIGATION									
WASH RACK/PLATFORM			1957				x		
GREASE RACK									
OTHER (DESCRIBE)									
OVERALL CONDITION %		45.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

The parking lot has a history of sink holes. The likely cause is a leak in the City of Philadelphia storm or sewer lines running under the parking lot. Asphalt should be inspected and have cracks filled and either an asphalt rejuvenator or a seal coat within 5 years to extend the useful life. The fencing adjacent to the VA Center has no barbed wire at the top.

HAZARDOUS STORAGE and UNDERGROUND TANKS

	GSF/GAL(	YR_BLT_RE	YES/NO
POL STORAGE			NO
HAZARDOUS WASTE STORAGE			NO
UNDERGRD STORAGE TANKS	2500	1993	YES
ABOVEGRD STORAGE TANKS			NO
STORAGE TANKS UPGRADED			N/A

SIGNS OF POOR COMPONENT CONDITIONS

ROOF: Leakage, missing shingles, or tiles, sagging or decaying roof structures, damaged trusses, plugged roof drains, vibration from mechanical equipment, damaged insulation, etc.

PAINTING: Peeling, cracking, etc.

SITE: Drainage problems, inadequate parking for MEP and/or POV. Large pot- holes or cracks in pavement. Limited site lighting, etc.

EXTERIOR: Peeling paint, cracked or loose mortar joints, oxidized sheet metal, frame lines out of plumb, loose siding, structural cracks, etc.

WINDOWS: Cracked, broken, required glazing, etc.

CONDITION RANKINGS

Excellent Condition (EC): All items that can normally be repaired or refinished, have recently been corrected or replaced such as a new roof, paint, furnace replacement or overhaul, etc. **Rating range: 0% to 15.9%.**

Very Good Condition (VG): All items well maintained, many having been repaired, overhauled or replaced when they show signs of wear and tear. **Rating range: 16% to 23.9%.**

Good Condition (GC): No obvious maintenance required, but neither is everything new. Appearance and utility are above the standard. **Rating range: 24% to 38.9%.**

Average Condition (AC): Some evidence of deferred maintenance and normal obsolescence with age in that a few minor repairs are needed. **Rating range 39% to 58.9%.**

Fair Condition (FC): Evidence of badly worn components. Much repair is needed. Many items need overhauling or replacement. **Rating range 59% to 75.9%.**

Poor Condition (PC): Evidence of components being worn out. Repair and overhaul is needed. Excessive deferred maintenance and abuse. Approaching abandonment, major reconstruction, or replacement. **Rating range: 76% to100%.**

FACILITY CONDITION SURVEY
Germantown PA076

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version 06-98

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	001	BUILD_TYP	TNG	YEAR BUILT	1957	

INTERIOR		Yr_Install	EC	VG	GC	AC	FC	PC
PARTITIONS	(%)							
BLOCK PARTITIONS	35	1957			x			
DRYWALL/GYPSUM	60	1957				x		
FOLDING PARTITIONS	5	1995		x				
OTHER (DESCRIBE)								
DOORS:	(%)							
ENTRANCE DOORS		1992			x			
ROLLING OVERHEAD		1990			x			
METAL DOORS (OFFICE)	50	1957			x			
WOOD DOORS (OFFICE)	50	1957			x			
OTHER (DESCRIBE)								
DOOR SETS/LOCKS		1957				x		
OTHER								
OVERALL CONDITION %	38.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

Several locks and door knobs are damaged or missing.

PAINTING & COVERING	%							
DRYWALL & CEILINGS	100	1996				x		
MASONRYWALLS	100	1996				x		
MILLWORK & TRIM								
OTHER (DESCRIBE)								
OVERALL CONDITION %	55.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

There are several rooms with water damage on the walls from roof leaks.

CEILING	%	Yr_Install	EC	VG	GC	AC	FC	PC
PLASTER CEILINGS								
DRYWALL CEILINGS	80	1957				x		
ACOUSTICAL CEILINGS								
SUSPENDED CEILINGS	20	1995				x		
OTHER (DESCRIBE)								
OVERALL CONDITION %	55.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

The drywall ceiling has holes in several places as well as water damage. The suspended ceiling is sagging in two places due to anchors that have pulled loose from the overhead slab.

FLOORING	%	Yr_Install	EC	VG	GC	AC	FC	PC
RESILIENT TILE FLOORING								
CONCRETE	10	1957			x			
ASBESTOS TILE	80	1957						x
CARPET/CARPET TILES	10	1995		x				
CERAMIC TILES								
OTHER HARDWOOD								
OVERALL CONDITION %	75.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

There are many tiles damaged or missing. In some places the floor is worn down to the wood subfloor. The floor is in need of major repair or replacement.

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FAC_ID	PA076	FAC_INT	FEE	FA_NUM	001	BUILD_TYP	TNG	YEAR BUILT	1957	

ELECTRICAL		Yr_Install	EC	VG	GC	AC	FC	PC
TRANSFORMERS (KVA)	150							
SINGLE PHASE AMP								
3-PHASE AMP	350 & 400	1993	X					
OUTLETS		1957				x		
PANELBOARDS		1957 & 1993	X					
CIRCUIT BREAKERS		1993	X					
FLUORESCENT FIXTURES		1980				x		
INCANDESCENT FIXTURES		1957				x		
HIGH INTENSITY DISCHARGE								
OTHER (DESCRIBE)								
OVERALL CONDITION %	35.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

Many of the light fixtures have been replaced. The electrical boxes have been left behind with exposed wires. Room 213 has a gap between the box and the plate exposing live wires. Room 213 has florescent light fixtures that are not secured to the ceiling.

CONVEYING SYSTEMS		Yr_Install	EC	VG	GC	AC	FC	PC
ELEVATOR								
STAIRS		1957				x		
OVERALL CONDITION %	50%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS: **Stair edging needs to be replaced.**

HEATING & COOLING		Yr_Install	EC	VG	GC	AC	FC	PC
BOILER FUEL #2 oil & N.Gas		1993		x				
BOILER MBH RATING								
BOILER TYPE								
HOT WATER & STEAM								
OTHER (DESCRIBE)								
HEATING SYSTEMS								
UNIT HEATERS-SUSPENDED		1993		x				
HEATING & VENTILATING UNIT								
FIN TUBE RADIATOR								
FURNACES- FORCED AIR								
FORCED HOT WATER								
OTHER (DESCRIBE) Gas infrared		1993				x		
COOLING SYSTEMS								
CHILLED WATER, AIR COOLED		1993	x					
CONDENSER								
ROOFTOP SINGLE ZONE UNITS								
ROOFTOP MULTI-ZONE								
SELF-CONTAINED, WATER								
SELF-CONTAINED, AIR COOL								
SPLIT SYS/AC CONDENSER								
WINDOW UNITS								
OTHER (DESCRIBE)								

BOILER MFG/ADDRESS:		H.B. Smith	Westfield, MA 01086				
SERIAL # SEE COMMENTS		**BTUH_HEAT**	**2x2,100,000**	**REFRIG_TYP**		**R-22**	
MODEL# SEE COMMENTS		**BTU_COOL**		**TONNAGE**		**60**	
OVERALL CONDITION %	10.0%						

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

Boiler #1 SN 019361197, Model CR1-GO-12 **Boiler #2 SN 019361198** **Model CR-GO-12**

A heat shield on the gas infrared heater is loose and hanging on the gas tube.

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PLUMBING	FUEL	Yr_Install	EC	VG	GC	AC	FC	PC
WATER HEATER **89 (GAL)**	Gas	1991				x		
RESTROOM & FIXTURES	#							
DRINKING FOUNTAIN	2	1990				x		
SHOWERS	6	1980			x			
LAVATORIES	9	1957				x		
URINALS	8	1980			x			
WATER CLOSETS	11	1957			x			
KITCHEN/FOOD SERVICE		1957				x		
HANDICAP ACCESSIBLE Y/N	NO							
PIPING &VALVES								
COPPER		1957		x				
CAST IRON PIPE								
STEEL PIPE								
PLASTIC PIPE								
FIRE PROTECTION								
STANDPIPE								
SPRINKLERS								
OTHER								
OVERALL CONDITION %	**45.0%**							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

One water fountain is inoperable. Some water faucets in the lavatories are inoperable.

GENERAL SITE PLAN INFORMATION & VALIDATION INFORMATION

PARKING (POV)	SY	8,200	(MEP)	5,200	KITCHEN	YES/NO	YES
SIDEWALKS	SY	245	LF	368	FIRING RANGE	YES/NO	YES
CURB/GUTTERS	LF	420			FIRING RANGE ACTIVE	YES/NO	NO
ACCESS ROADS	SY				FIRE RANGE CONVERTED	YES/NO	YES
DRAINAGE LINES	LF				VAULT	YES/NO	YES
WATER LINES	LF						
SEWER LINES	LF						
FENCING	LF	1865					
LIGHTING	EA	12					
IRRIGATION	LF						

GROSS SQ. FT.	28,275	VERIFIED FROM:		EMAAR		DATE	
STORIES	2			416TH E2FA	x	DATE	
ZIP CODE	19144			FIELD	x	DATE	
AS BUILT ON SITE		DATE		DA2877		DATE	
SITE PLAN		DATE		OTHER		DATE	

Team Number: FIG FET No. 1 & 2

Team Members LTC Garner, MAJ Holtzman, 1LT Burkholder, SSG Killough

Date of Survey: 5 - 6 Apr 00

ADDITIONAL COMMENTS:

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	001	BUILD_TYP	TNG	YEAR BUILT	1957	

FUNCTIONAL INDICATORS

1. DESIGN CHARACTERISTICS: Appealing or poor or antiquated style or design, traffic and noise levels, maintenance or serviceability, security, antiterrorism, evacuation, market acceptance or resistance, environmentally responsible or safe, eye appeal, symmetry, scale, orientation, interaction or appropriate blend of materials, glazing, durability, colors, etc., suitable for the occupancy, distinctive motif or special purpose use or architectural.

	EC	VG	GC	AC	FC	PC
Ratings				x		

2. PHYSICAL LAYOUT: Suitable room layout and orderly flow, overall room or bay size, net versus gross space, volume, column, beam or mechanical run obstructions, appropriate wall heights, lighting levels, natural light and ventilation, ingress-egress, traffic patterns and doors, adequate support facilities, work, storage, cabinet size and placement.

	EC	VG	GC	AC	FC	PC
Ratings		x				

3. MECHANICAL EQUIPMENT: Inadequate or excess number of poorly spaced or antiquated plumbing or electrical and lighting fixtures, HVAC, conveyance, appliances, PA systems and other equipment, service or power requirements, energy consumption or efficiency, actual versus rated capacity or performance, abnormal operating costs, proper leak detection or emission controls, pressure differentials, technological changes, (e.g. electric vs. standing pilot ignition, etc.), appropriate air quality and changes.

	EC	VG	GC	AC	FC	PC
Ratings		x				

4. SITE ASSESSMENT: Land use, size, shape, topography, access, easements or other encroachments, utilities, soil types, stability, drainage and percolation, water table and use, erosion, vegetation, flood plain, wetlands, coastal, brush, or fault areas, presence of hazardous contaminants.

	EC	VG	GC	AC	FC	PC
Ratings					x	

5. FIRE PROTECTION REQUIREMENTS: Proper rating, detection for life safety and security, signaling controls, communications, signs, standpipe, sprinklers, extinguishers, hydrants, vents, draft curtains, fans, pumps, door and smoke controls, standby power, emergency phones, appropriate exits, overhangs, stairways, roofing classification, safety or double glazing.

	EC	VG	GC	AC	FC	PC
Ratings				x		

6. HANDICAPPED REQUIREMENTS: ADA compliance, ramps, elevators, drinking fountains, restroom, etc.

	EC	VG	GC	AC	FC	PC
Ratings					x	

7. ENVIRONMENTAL CONDITIONS: Water, soil, radon, asbestos, UREA formaldehyde foam insulation, PCB's, CFC's, high-voltage lines, halon, heavy metals or lead contamination, run-off, emissions or sediment containment, septic tanks, demolition constraints, disposal or remediation. Evidence of leakage, absence of plants or animals, sick or stressed plants or animals, discolored soil or water, noxious odors, presence of discarded batteries, abandoned wells, sumps, tanks, barrels or other containers of paints, thinners, heating oil, petroleum or other hazardous chemical substances. Abandoned firing ranges, etc.

	EC	VG	GC	AC	FC	PC
Ratings					x	

8. WEATHER EXTREMES: Appropriate insulation levels, heat gain or loss, shading, energy equivalency trade-off, window treatments, glass strength, proper trusses, size, spacing, pitch and drainage for rain and snow loading, proper flashing and penetrations, proper connections for hurricane force winds, uplift exposure.

	EC	VG	GC	AC	FC	PC
Ratings		x				

9. EARTHQUAKES: Appropriate bracing, connections to structural shell or foundation, shear walls, overhang exposure, irregular shape, framing stress, torsion, distance from other structures.

	EC	VG	GC	AC	FC	PC
Ratings		x				

FACILITY CONDITION SURVEY
Germantown PA076

ENCLOSURE B

version 06-98

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	001	BUILD_TYP	TNG	YEAR BUILT	1957	

EXTERNAL INDICATORS

1. PHYSICAL FACTORS: Proximity of desirable or unattractive natural or artificial features or barriers, general neighborhood maturity, conformity, deterioration, rehabilitation or static character, known clean-up sites, nuisances, waste dumps, swamp, toxic industry, floodplain, drainage, water table, sinkholes, fault zones, soil types, landslides, etc., local ecosystem, endangered species, habitat areas.

	EC	VG	GC	AC	FC	PC
Ratings					x	

2. INFRASTRUCTURE: Highest and best use, quality, availability and source of utilities, public service, fire stations, street improvements, traffic patterns, public transportation and shipping facilities, parking, retail, recreation, etc.

	EC	VG	GC	AC	FC	PC
Ratings		x				

3. ECONOMIC: Supply-Demand imbalance, saturation or monopoly, competition or alternatives, industry or major plant relocation's, employment development and growth patterns, utility costs, labor and materials, vacancy and building rates, zoning, land use, air rights, etc.

	EC	VG	GC	AC	FC	PC
Ratings			x			

ADDITIONAL COMMENTS OR REMARKS:

There are several sink holes in the parking lot.

CONDITION RANKINGS

Excellent Condition (EC): All items that can normally be repaired or refinished, have recently been corrected or replaced such as a new roof, paint, furnace replacement or overhaul, etc. **Rating range: 0% to 15.9%.**

Very Good Condition (VG): All items well maintained, many having been repaired, overhauled or replaced when they show signs of wear and tear. **Rating range: 16% to 23.9%.**

Good Condition (GC): No obvious maintenance required, but neither is everything new. Appearance and utility are above the standard. **Rating range: 24% to 38.9%.**

Average Condition (AC): Some evidence of deferred maintenance and normal obsolescence with age in that a few minor repairs are needed. **Rating range 39% to 58.9%.**

Fair Condition (FC): Evidence of badly worn components. Much repair is needed. Many items need overhauling or replacement. **Rating range 59% to 75.9%.**

Poor Condition (PC): Evidence of components being worn out. Repair and overhaul is needed. Excessive deferred maintenance and abuse. Approaching abandonment, major reconstruction, or replacement. **Rating range: 76% to100%.**

SIGNS OF POOR COMPONENT CONDITIONS

HVAC: Inadequate or poorly spaced equipment. Antiquated systems, high operating costs, furnaces or boilers in poor repair, rusted ductwork, etc.

FLOORING: Cracks, sagging, worn or torn spots. Expansion joints separation, etc.

PAINTING: Peeling, cracking, etc.

CEILING: Missing tiles, water stained, cracked or broken, etc.

WINDOWS: Cracked, broken, required glazing, etc.

PLUMBING: Leaking faucets or pipe connections. Inadequate or antiquated plumbing fixtures.

INTERIOR: Cracks in drywall, plaster, or block. Open joints in millwork, missing or loose hardware, peeling paint, mildew, smoke or water stains, dampness, insect or rodent damage, etc.

ELECTRICAL: Defective wiring, broken, inadequate or poorly spaced, antiquated or tarnished lighting fixtures or service equipment.

FACILITY CONDITION SURVEY
Germantown PA076

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FAC_ID	PA076	FAC_INT	FEE	FA_NUM	002	BUILD_TYP	OMS	YEAR BUILT	1957
PERM	X	SEMI-PERM		TEMP		REHAB		CONVERSION	
INSNO		BLDG_NUM		GSF	6,042	NSF	6,042	SITE	
ADD/ALT.								STORY HT	1

ROOF COMPONENT		Yr_Install	EC	VG	GC	AC	FC	PC
ROOF COVERING	(%)							
ELASTROMERIC (EPDM)	100	1990		x				
BUILT-UP (MULTI-PLY)								
BALLAST (GRAVEL/STONE) Y/N								
OTHER (DESCRIBE)								
METAL ROOFING	(%)							
CORRUGATED								
STANDING SEAM								
FLAT SEAM								
OTHER (DESCRIBE)								
SHINGLES & TILES	(%)							
ASPHALT SHINGLES								
CONCRETE TILES								
OTHER (DESCRIBE)								
ROOF EDGES	(LF)							
SHEET METAL								
COPPER								
ALUMINUM	310	1990		x				
FLASHING	(LF)							
SHEET METAL								
COPPER								
ALUMINUM	310	1990		x				
NEOPRENE (RUBBER)								
OTHER (DESCRIBE)								
ROOF DRAINS	(EA.)							
GUTTERS & DOWNSPOUTS								
ALUMINUM		1990				x		
STEEL GALVANIZED								
COPPER								
OTHER (DESCRIBE)								
ROOF INSULATION								
FIBERBOARD		1990		x				
FIBERGLASS								
OTHER (DESCRIBE) RIGID								
OVERALL CONDITION %	30.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

The condition of the roof is based on observations made from the USARC. There is no leaking evident.

Two of the aluminum downspouts are crushed and in need of replacement. One downspout is disconnected.

FACILITY CONDITION SURVEY
Germantown PA076

ENCLOSURE B

version 06-98

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	002	BUILD_TYP	OMS	YEAR BUILT	1957	

EXTERIOR (STRUCTURAL):		Yr_Install	EC	VG	GC	AC	FC	PC
FRAME STEEL								
CONCRETE BLOCK (CMU)	100	1957				x		
PRE-ENGINEERED								
OTHER								
EXTERIOR FINISH:	%							
BRICK VENEER	100	1957				x		
STUCCO (DRYVIT)								
WOOD								
METAL SIDING								
OTHER (DESCRIBE)								
FOUNDATION	%							
SLAB	100	1957			x			
CRAWL								
BASEMENT								
OTHER (DESCRIBE)								
OVERALL CONDITION %	45.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

There are areas of the exterior brick that need repointing.

PAINTING EXTERIOR	%	Yr_Install	EC	VG	GC	AC	FC	PC
FASCIA & TRIM								
STUCCO								
WOOD								
CONCRETE								
GUTTERS & DOWNSPOUTS								
DRIP EDGE								
OTHER (DESCRIBE)								
OVERALL CONDITION %								

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

WINDOWS % or # OPENINGS		Yr_Install	EC	VG	GC	AC	FC	PC
ALUMINUM AWNING TYPE								
ALUMINUM SINGLE HUNG								
ALUMINUM FIXED	100	1998	x					
STEEL PROJECTED								
STEEL FIXED								
WOOD								
DOUBLE HUNG								
CASEMENT								
WEATHER-STRIPPING								
SCREENS								
OTHER (DESCRIBE)								
OTHER (DESCRIBE)								
OVERALL CONDITION %	5.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

FACILITY CONDITION SURVEY
Germantown PA076

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FAC_ID	PA076	FAC_INT		FEE		FA_NUM	002	BUILD_TYP	OMS	YEAR BUILT	1957	

SITE			Yr_Install	EC	VG	GC	AC	FC	PC
ASPHALT	SY		various						x
CONCRETE	SY		1957						x
GRAVEL	SY								
LIGHTING	EA		1998		x				
FENCE/GATES	LF		1998&1992			x			
SIDEWALKS	LF								
CURB/GUTTER	LF								
SEWER LINES									
WATER LINES									
DRAINAGE									
LANDSCAPING									
IRRIGATION									
WASH RACK/PLATFORM									
GREASE RACK									
OTHER (DESCRIBE)									
OVERALL CONDITION %		35.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

The parking lot has a history of sink holes. The likely cause is a leak in the City of Philadelphia storm or sewer lines running under the parking lot. Asphalt should be inspected and have cracks filled and either an asphalt rejuvenator or a seal coat within 5 years to extend the useful life. The fencing adjacent to the VA Center has no barbed wire at the top. A concrete pad SW of the OMS has deteriorated to the point where it is nearly gravel.

HAZARDOUS STORAGE and UNDERGROUND TANKS

	GSF/GAL(	YR_BLT_RE	YES/NO
POL STORAGE	20		YES
HAZARDOUS WASTE STORAGE			NO
UNDERGRD STORAGE TANKS			NO
ABOVEGRD STORAGE TANKS			NO
STORAGE TANKS UPGRADED			N/A

SIGNS OF POOR COMPONENT CONDITIONS

ROOF: Leakage, missing shingles, or tiles, sagging or decaying roof structures, damaged trusses, plugged roof drains, vibration from mechanical equipment, damaged insulation, etc.

PAINTING: Peeling, cracking, etc.

SITE: Drainage problems, inadequate parking for MEP and/or POV. Large pot- holes or cracks in pavement. Limited site lighting, etc.

EXTERIOR: Peeling paint, cracked or loose mortar joints, oxidized sheet metal, frame lines out of plumb, loose siding, structural cracks, etc.

WINDOWS: Cracked, broken, required glazing, etc.

CONDITION RANKINGS

Excellent Condition (EC): All items that can normally be repaired or refinished, have recently been corrected or replaced such as a new roof, paint, furnace replacement or overhaul, etc. **Rating range: 0% to 15.9%.**

Very Good Condition (VG): All items well maintained, many having been repaired, overhauled or replaced when they show signs of wear and tear. **Rating range: 16% to 23.9%.**

Good Condition (GC): No obvious maintenance required, but neither is everything new. Appearance and utility are above the standard. **Rating range: 24% to 38.9%.**

Average Condition (AC): Some evidence of deferred maintenance and normal obsolescence with age in that a few minor repairs are needed. **Rating range 39% to 58.9%.**

Fair Condition (FC): Evidence of badly worn components. Much repair is needed. Many items need overhauling or replacement. **Rating range 59% to 75.9%.**

Poor Condition (PC): Evidence of components being worn out. Repair and overhaul is needed. Excessive deferred maintenance and abuse. Approaching abandonment, major reconstruction, or replacement. **Rating range: 76% to100%.**

FACILITY CONDITION SURVEY
Germantown PA076

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FAC_ID	PA076	FAC_INT	FEE	FA_NUM	002	BUILD_TYP	OMS	YEAR BUILT	1957	

INTERIOR		Yr_Install	EC	VG	GC	AC	FC	PC
PARTITIONS	(%)							
BLOCK PARTITIONS								
DRYWALL/GYPSUM								
FOLDING PARTITIONS								
OTHER (DESCRIBE)								
DOORS:	(%)							
ENTRANCE DOORS								
ROLLING OVERHEAD		1990			x			
METAL DOORS OMS	100	1990			x			
WOOD DOORS (OFFICE)								
OTHER (DESCRIBE)								
DOOR SETS/LOCKS		1990		x				
OTHER								
OVERALL CONDITION %	25.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

There are four bay doors.

PAINTING & COVERING	%							
DRYWALL & CEILINGS								
MASONRYWALLS	100	1996			x			
MILLWORK & TRIM								
OTHER (DESCRIBE)								
OVERALL CONDITION %	25.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

CEILING	%	Yr_Install	EC	VG	GC	AC	FC	PC
PLASTER CEILINGS								
DRYWALL CEILINGS								
ACOUSTICAL CEILINGS								
SUSPENDED CEILINGS								
OTHER (DESCRIBE) wood beam	100	1957			x			
OVERALL CONDITION %	25.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

FLOORING	%	Yr_Install	EC	VG	GC	AC	FC	PC
RESILIENT TILE FLOORING								
CONCRETE	100	1957			x			
ASBESTOS TILE								
CARPET/CARPET TILES								
CERAMIC TILES								
OTHER HARDWOOD								
OVERALL CONDITION %	25.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

FACILITY CONDITION SURVEY
Germantown PA076

ENCLOSURE B

version 06-98

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	002	BUILD_TYP	OMS	YEAR BUILT	1957	

ELECTRICAL		Yr_Install	EC	VG	GC	AC	FC	PC
TRANSFORMERS (KVA)								
SINGLE PHASE AMP	70	1993		x				
3-PHASE AMP								
OUTLETS								
PANELBOARDS								
CIRCUIT BREAKERS								
FLUORESCENT FIXTURES								
INCANDESCENT FIXTURES		1993		x				
HIGH INTENSITY DISCHARGE								
OTHER (DESCRIBE)								
OVERALL CONDITION %	20.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

CONVEYING SYSTEMS		Yr_Install	EC	VG	GC	AC	FC	PC
ELEVATOR								
STAIRS								
OVERALL CONDITION %								

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

HEATING & COOLING		Yr_Install	EC	VG	GC	AC	FC	PC
BOILER FUEL								
BOILER MBH RATING								
BOILER TYPE								
HOT WATER & STEAM								
OTHER (DESCRIBE)								
HEATING SYSTEMS								
UNIT HEATERS-SUSPENDED		1993			x			
HEATING & VENTILATING UNIT								
FIN TUBE RADIATOR								
FURNACES- FORCED AIR								
FORCED HOT WATER								
OTHER (DESCRIBE) Gas radiant		1993			x			
COOLING SYSTEMS								
CHILLED WATER, AIR COOLED								
CONDENSER								
ROOFTOP SINGLE ZONE UNITS								
ROOFTOP MULTI-ZONE								
SELF-CONTAINED, WATER								
SELF-CONTAINED, AIR COOL								
SPLIT SYS/AC CONDENSER								
WINDOW UNITS								
OTHER (DESCRIBE)								
BOILER MFG/ADDRESS:								
SERIAL #		**BTUH_HEAT**			**REFRIG_TYP**			
MODEL#		**BTU_COOL**			**TONNAGE**			
OVERALL CONDITION %	25.0%							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

No cooling system for OMS.

FACILITY CONDITION SURVEY
Germantown PA076

ENCLOSURE B

version 06-98

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	002	BUILD_TYP	OMS	YEAR BUILT	1957	
PLUMBING			FUEL	Yr_Install	EC	VG	GC	AC	FC	PC
WATER HEATER										
RESTROOM & FIXTURES			#							
DRINKING FOUNTAIN										
SHOWERS	emergency		1	1990				x		
LAVATORIES										
URINALS										
WATER CLOSETS										
KITCHEN/FOOD SERVICE										
HANDICAP ACCESSIBLE Y/N			NO							
PIPING &VALVES										
COPPER				1990		X				
CAST IRON PIPE										
STEEL PIPE										
PLASTIC PIPE										
FIRE PROTECTION										
STANDPIPE										
SPRINKLERS										
OTHER										
OVERALL CONDITION %			**55.0%**							

ADDITIONAL COMMENTS OR SUGGESTED REPAIRS:

There are no restrooms in the OMS.

The shower is for chemical exposure to eyes or body.

GENERAL SITE PLAN INFORMATION & VALIDATION INFORMATION

PARKING (POV)	SY		(MEP)		KITCHEN	YES/NO	NO
SIDEWALKS	SY		LF		FIRING RANGE	YES/NO	NO
CURB/GUTTERS	LF				FIRING RANGE ACTIVE	YES/NO	NO
ACCESS ROADS	SY				FIRE RANGE CONVERTED	YES/NO	NO
DRAINAGE LINES	LF				VAULT	YES/NO	NO
WATER LINES	LF						
SEWER LINES	LF						
FENCING	LF	250					
LIGHTING	EA	6					
IRRIGATION	LF						

GROSS SQ. FT.	6,042	VERIFIED FROM:		EMAAR	x	DATE	1996
STORIES	1			416TH E2FA	x	DATE	
ZIP CODE	19144			FIELD	x	DATE	
AS BUILT ON SITE	Yes	DATE	1957	DA2877		DATE	
SITE PLAN	Yes	DATE	1957	OTHER		DATE	

Team Number: FIG FET No. 1 & 2

Team Members LTC Garner, MAJ Holtzman, 1LT Burkholder, SSG Killough

Date of Survey: 5 - 6 Apr 00

ADDITIONAL COMMENTS:

FACILITY CONDITION SURVEY
Germantown PA076

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version 06-98

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	002	BUILD_TYP	OMS	YEAR BUILT	1957	

FUNCTIONAL INDICATORS

1. DESIGN CHARACTERISTICS: Appealing or poor or antiquated style or design, traffic and noise levels, maintenance or serviceability, security, antiterrorism, evacuation, market acceptance or resistance, environmentally responsible or safe, eye appeal, symmetry, scale, orientation, interaction or appropriate blend of materials, glazing, durability, colors, etc., suitable for the occupancy, distinctive motif or special purpose use or architectural.

	EC	VG	GC	AC	FC	PC
Ratings			x			

2. PHYSICAL LAYOUT: Suitable room layout and orderly flow, overall room or bay size, net versus gross space, volume, column, beam or mechanical run obstructions, appropriate wall heights, lighting levels, natural light and ventilation, ingress-egress, traffic patterns and doors, adequate support facilities, work, storage, cabinet size and placement.

	EC	VG	GC	AC	FC	PC
Ratings		x				

3. MECHANICAL EQUIPMENT: Inadequate or excess number of poorly spaced or antiquated plumbing or electrical and lighting fixtures, HVAC, conveyance, appliances, PA systems and other equipment, service or power requirements, energy consumption or efficiency, actual versus rated capacity or performance, abnormal operating costs, proper leak detection or emission controls, pressure differentials, technological changes, (e.g. electric vs. standing pilot ignition, etc.), appropriate air quality and changes.

	EC	VG	GC	AC	FC	PC
Ratings		x				

4. SITE ASSESSMENT: Land use, size, shape, topography, access, easements or other encroachments, utilities, soil types, stability, drainage and percolation, water table and use, erosion, vegetation, flood plain, wetlands, coastal, brush, or fault areas, presence of hazardous contaminants.

	EC	VG	GC	AC	FC	PC
Ratings				x		

5. FIRE PROTECTION REQUIREMENTS: Proper rating, detection for life safety and security, signaling controls, communications, signs, standpipe, sprinklers, extinguishers, hydrants, vents, draft curtains, fans, pumps, door and smoke controls, standby power, emergency phones, appropriate exits, overhangs, stairways, roofing classification, safety or double glazing.

	EC	VG	GC	AC	FC	PC
Ratings				x		

6. HANDICAPPED REQUIREMENTS: ADA compliance, ramps, elevators, drinking fountains, restroom, etc.

	EC	VG	GC	AC	FC	PC
Ratings					x	

7. ENVIRONMENTAL CONDITIONS: Water, soil, radon, asbestos, UREA formaldehyde foam insulation, PCB's, CFC's, high-voltage lines, halon, heavy metals or lead contamination, run-off, emissions or sediment containment, septic tanks, demolition constraints, disposal or remediation. Evidence of leakage, absence of plants or animals, sick or stressed plants or animals, discolored soil or water, noxious odors, presence of discarded batteries, abandoned wells, sumps, tanks, barrels or other containers of paints, thinners, heating oil, petroleum or other hazardous chemical substances. Abandoned firing ranges, etc.

	EC	VG	GC	AC	FC	PC
Ratings					x	

8. WEATHER EXTREMES: Appropriate insulation levels, heat gain or loss, shading, energy equivalency trade-off, window treatments, glass strength, proper trusses, size, spacing, pitch and drainage for rain and snow loading, proper flashing and penetrations, proper connections for hurricane force winds, uplift exposure.

	EC	VG	GC	AC	FC	PC
Ratings		x				

9. EARTHQUAKES: Appropriate bracing, connections to structural shell or foundation, shear walls, overhang exposure, irregular shape, framing stress, torsion, distance from other structures.

	EC	VG	GC	AC	FC	PC
Ratings		x				

FACILITY CONDITION SURVEY
Germantown PA076

ENCLOSURE B

version 06-98

FAC_ID	PA076	FAC_INT	FEE	FA_NUM	002	BUILD_TYP	OMS	YEAR BUILT	1957	

EXTERNAL INDICATORS

1. PHYSICAL FACTORS: Proximity of desirable or unattractive natural or artificial features or barriers, general neighborhood maturity, conformity, deterioration, rehabilitation or static character, known clean-up sites, nuisances, waste dumps, swamp, toxic industry, floodplain, drainage, water table, sinkholes, fault zones, soil types, landslides, etc., local ecosystem, endangered species, habitat areas.

	EC	VG	GC	AC	FC	PC
Ratings				x		

2. INFRASTRUCTURE: Highest and best use, quality, availability and source of utilities, public service, fire stations, street improvements, traffic patterns, public transportation and shipping facilities, parking, retail, recreation, etc.

	EC	VG	GC	AC	FC	PC
Ratings			x			

3. ECONOMIC: Supply-Demand imbalance, saturation or monopoly, competition or alternatives, industry or major plant relocation's, employment development and growth patterns, utility costs, labor and materials, vacancy and building rates, zoning, land use, air rights, etc.

	EC	VG	GC	AC	FC	PC
Ratings			x			

ADDITIONAL COMMENTS OR REMARKS:

CONDITION RANKINGS

Excellent Condition (EC): All items that can normally be repaired or refinished, have recently been corrected or replaced such as a new roof, paint, furnace replacement or overhaul, etc. **Rating range: 0% to 15.9%.**

Very Good Condition (VG): All items well maintained, many having been repaired, overhauled or replaced when they show signs of wear and tear. **Rating range: 16% to 23.9%.**

Good Condition (GC): No obvious maintenance required, but neither is everything new. Appearance and utility are above the standard. **Rating range: 24% to 38.9%.**

Average Condition (AC): Some evidence of deferred maintenance and normal obsolescence with age in that a few minor repairs are needed. **Rating range 39% to 58.9%.**

Fair Condition (FC): Evidence of badly worn components. Much repair is needed. Many items need overhauling or replacement. **Rating range 59% to 75.9%.**

Poor Condition (PC): Evidence of components being worn out. Repair and overhaul is needed. Excessive deferred maintenance and abuse. Approaching abandonment, major reconstruction, or replacement. **Rating range: 76% to100%.**

SIGNS OF POOR COMPONENT CONDITIONS

HVAC: Inadequate or poorly spaced equipment. Antiquated systems, high operating costs, furnaces or boilers in poor repair, rusted ductwork, etc.

FLOORING: Cracks, sagging, worn or torn spots. Expansion joints separation, etc.

PAINTING: Peeling, cracking, etc.

CEILING: Missing tiles, water stained, cracked or broken, etc.

WINDOWS: Cracked, broken, required glazing, etc.

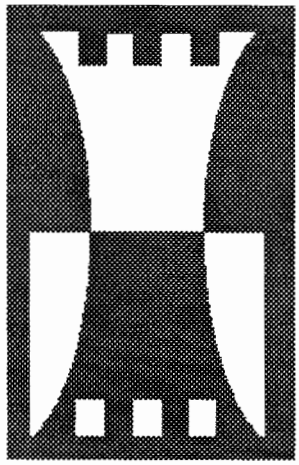
PLUMBING: Leaking faucets or pipe connections. Inadequate or antiquated plumbing fixtures.

INTERIOR: Cracks in drywall, plaster, or block. Open joints in millwork, missing or loose hardware, peeling paint, mildew, smoke or water stains, dampness, insect or rodent damage, etc.

ELECTRICAL: Defective wiring, broken, inadequate or poorly spaced, antiquated or tarnished lighting fixtures or service equipment.

ENCLOSURE C

DEPARTMENT OF THE ARMY
UNITED STATES ARMY FACILITY ENGINEER GROUP
416TH ENGINEER COMMAND
10 South 100 Frontage Road
Darien, IL 60561-1780



REAL PROPERTY MAINTENANCE ACTIVITIES

For

Germantown Veterans Memorial USAR Center

Germantown, Pennsylvania
Facility I.D. No. PA076

Date of Visit: 5-6 April 2000

PREPARED BY:

FACILITY ENGINEER GROUP (416th ENCOM)
FACILITY ENGINEER CENTER - NORTHEAST

FORT INDIANTOWN GAP
FACILITY ENGINEERING TEAM
Annville, Pennsylvania

ENCLOSURE C

416th ENGINEER COMMAND
USAR FACILITY
ENGINEERING AND ENVIRONMENTAL
FACILITY ASSESSMENT

RPMA WORK REQUIREMENTS

INSTALLATION NAME: Germantown Veterans Memorial USAR Center

INSTALLATION NUMBER: PA076 DATE: 5-6 April 2000

TABLE OF CONTENTS

SECTION 1: EXECUTIVE SUMMARY

INSTALLATION NAME: Germantown Veterans Memorial USAR Center

INSTALLATION NUMBER: PA076 DATE: 5-6 April 2000

1. The Ft. Indiantown Gap Facility Engineer Team (Team) conducted an Engineering and Environmental Facility Assessment (E2FA) for the Germantown Veterans Memorial USAR Center on 5-6 April 2000. The facility consists of a two-story brick faced main building (approximately 28,275 gross square feet) and a separate 5-bay Organizational Maintenance Shop (OMS) (approximately 6,042 gross square feet). The OMS has no office or administrative space. There is a fenced POV parking area and a separately fenced MEP area. The facility houses the 233rd Quartermaster Company, with assigned and authorized strengths of 174 and 194, respectively. The facility has 5 full-time AGR military and 1 civilian employee and 2 AGR Recruiters.

2. The facility is located in an urban setting at 5200 Wissahickon Avenue in Germantown, PA adjacent to a VA administration facility. The facility was constructed in 1957 and has had several major facility component improvements in recent years, including electrical upgrade, chiller installation, boiler replacement, and window replacement. The main building heating system is dual fuel #2 fuel oil and natural gas, with gas as the primary fuel. Radiant gas heaters augment this heating system in the drill hall. The OMS is heated with gas-fired infrared heaters (2) and a single unit heater.

3. During the visit, two significant facility issues were noted, which warrant urgent action. LTC Uhrin, Regional Engineer for the 99th RSC was notified of these in a memo dated 11 APR 2000, a copy of which is contained in Enclosure C. The following summarizes these issues:

   a. Pavement Settling: In two (2) locations, the asphalt has failed, apparently due to sinkholes. In one location, in the POV parking lot, this problem occurred approximately one year ago and was repaired.

      The second location of failure is in front of the OMS building, where a section of asphalt about 12 feet long in a utility trench has dropped several feet. This area is located on the edge of a larger area of about 25 feet square, which has settled up to one foot. This should be a safety concern as the electrical feed to the OMS passes through the trench where the more significant settling has occurred. The larger safety concern is that the 2-inch natural gas feed to the OMS passes through the larger area of pavement settling. It should be noted that the gas industry has experienced explosions in buildings where gas lines have failed, and the gas has traveled along the trench into adjacent buildings.

      The likely cause of this pavement settling is related to 6-foot diameter sewer and storm sewer lines installed by the Philadelphia Water Department approximately 36 feet below grade in 1993/1994.

      Recommendation: It is recommended that the 99th RSC request that the Philadelphia Water Department and/or the City of Philadelphia take immediate appropriate action to

repair the pavement settling at Germantown USAR Center and to investigate and correct the root cause problem, which is likely associated with the city's sewer lines. This request should stress the safety issues associated with open sinkholes and the potential to impact electric and gas utility lines passing through the affected areas. All such work should be at no cost to the U.S. Government.

b. Roof Leaks: During the site visit, it was noted that roof leaks exist throughout the facility. These leaks have resulted in staining on the brick exterior and interior paint/wall damage. Additionally, the leaks appear to have caused some rotting of the wooden roof deck and rafters in at least two (2) locations in the drill hall.

   Upon investigation, it was noted that the roof membrane is in excellent condition. The causes of the roof leaks appear to be from tears in the membrane directly above the roof edge flashing joints, which have lifted, thus tearing the membrane. Clogged or improperly draining gutters may have caused the lifting of the flashing. Additionally, a number of large holes (up to 2 inches in diameter) were found on the membrane. At one such hole location, the roof was "spongy" in an area of about 10 feet square, indicating that the insulation is saturated with water.

   Recommendation: It is recommended that the roof replacement work order be changed to "roof repair", and executed ASAP, to avoid further deterioration of the structure. It is likely that this work could be completed for around $50K instead of $400K for replacement. However, if delayed, this work could cost $400K or more, if extensive structural repairs are required.

4. The main building and the OMS consist of CMU interior walls and brick veneer exterior walls with a concrete floor. With the exception of the parking lot sink hole and roof leak issues, the overall condition of the facility is very good and all areas observed were very clean and well maintained. During the site visit, the assessment team reviewed the RISER report, which contains previously submitted work orders. This RISER report has been annotated to reflect item validity and to adjust the estimated cost, and is provided in Section 6 of this Enclosure. Additionally, CST #1 provided a list of RPMA needs that were being reviewed for work order submission by CST #1. The FTIG team reviewed this list against current facilities needs and a marked up copy of this listing is provided in Section 7 of this Enclosure. No additional new RPMA work was identified during the assessment.

DOUGLAS F. GARNER, PE
LTC, EN, USAR
Team Leader

SECTION 2: FACILITY IDENTIFICATION

INSTALLATION NAME: GERMANTOWN USAR CENTER

INSTALLATION NUMBER: PA076

STREET ADDRESS: 5200 Wissahickon Avenue
CITY/TOWN: Germantown (Philadelphia)
STATE: PA
ZIP CODE: 19144-4095
RSC/RSG: 99th RSC
FACILITY TYPE:

A. USARC:	X	B. AFRC:		C. OMS:		D. FLIGHT:	
E. DS/GS:		F. MED:		G. WET:		H. FLIGHT:	
I. ECS:		J. CTF:		K. OTHER: AMSA			

ASSESSMENT PERFORMED BY:
FACILITY ENGINEER TEAM INCLUDED:

LTC Doug Garner
MAJ John Holtzman
1LT Eric Burkholder
SSG Doug Killough

REFER TO FOR INFORMATION: LTC Doug Garner

Work: (607) 770-2696 Home: (607) 798-6650

PERSONNEL CONTACTED ON SITE:

NAME/GRADE	DUTY POSITION	PHONE NUMBER	E-MAIL
Mr. Nick Taylor	Facility Manager	(610) 584-0536	
Ms. Yvonne Deloatch	Facility Coordinator	(215) 848-9101	

ASSESSMENT CONDUCTED FROM: 5 APR 2000/1000 TO: 6 APR 2000/1600
DATE OF LAST ASSESSMENT: 16-18 SEP 1996

SECTION 3: COMPONENT INSPECTION SUMMARY

INSTALLATION NAME: Germantown Veterans Memorial USAR Center
INSTALLATION NUMBER: PA076

A Facility Condition Survey was conducted to assessment the current condition of the facility. The survey is used to develop a Long-Range Maintenance Plan. See Enclosure B.

A Component Inspection Summary is provided in the following table that summarizes the results of the Facility Condition Survey. The definition of the condition codes are as follows:

- C1 Item is generally in good condition and requires only routine maintenance and repair.
- C2 Item shows signs of partial failure of system components and needs maintenance, repair, or replacement.
- C3 Item shows signs of extensive or complete failure of system components or system and needs immediate maintenance, repair, or replacement.

ENCLOSURE C

Component Inspection Summary: PA076

Item No.	Facility Component	Cond Code	Date of Component Installation	Date of Last Maint/ Repair	Est'd Remain Life, years	Projected FY of Repair	Cost of Work Estimate	Work Order Number
1	Ceilings	C2	1957	1995	5			
2	Walls	C2	1957	1996	10			
3	Doors	C1	1957	1992	10			
4	Floors	C2	1957	1995	5			
5	Windows	C1	1998		25			
6	Stairs	C1	1957		25			
7	Latrines	C1	1957		10			
8	Kitchen	C2	1957					
9	Electrical	C1	1957	1993	10			
10	Plumbing	C1	1957	1980	5			
11	Heating Sys	C1	1993		15			
12	Cooling Sys	C1	1993		15			
13	Site/Grounds	C1	1957		20			
14	Bldg Exterior	C1	1957		10			
15	Roof	C2/3	1990		20			
16	Fencing	C1	1992		20			
17	Pavement	C3	1957	Various	2			
18	Security Sys	N/A	None					
19	Other	NA		NA				
Total Cost								

C1 Item is generally in good condition and requires only routine maintenance and repair.
C2 Item shows signs of partial failure of system components and needs maintenance, repair, or replacement.
C3 Item shows signs of extensive or complete failure of system components or system and needs immediate maintenance, repair, or replacement.

SECTION 4. SUMMARY OF UNCONSTRAINED WORK REQUIREMENTS

INSTALLATION NAME: Germantown Veterans Memorial USAR Center
INSTALLATION NUMBER: PA076 DATE: 5-6 April 00

	ESTIMATE COST
PREVIOUSLY IDENTIFIED MAINTENANCE AND REPAIR	**$257,000**
NEWLY IDENTIFIED MAINTENANCE AND REPAIR	**$14,850**
PREVIOUSLY IDENTIFIED MINOR CONSTRUCTION/ALTERATION	**0**
NEWLY IDENTIFIED MINOR CONSTRUCTION/ALTERATION	**0**
PREVIOUSLY IDENTIFIED OTHER ENGINEERING SERVICES	**0**
NEWLY IDENTIFIED OTHER ENGINEERING SERVICES	**0**
TOTAL UNCONSTRAINED RPMA REQUIREMENTS	**$271,850**

SECTION 5: RPMA DOCUMENTATION AND COST ESTIMATES

NO NEW RPMA WORK IDENTIFIED

SECTION 6: RISER REPORT (ANNOTATED)

WORK ORDER LIST REPORT

ANNOTATED BY 416th ENCOM 3 JUNE 2000

Sort Criteria: Command Priority, Work Order ID

Selection Criteria: Facility ID = PA076

Remarks	Work Order ID	Work Order Description	Command Priority	Date Received	FAC ID	Facility Name	Req Type	Fund Stat	Proj Stat	Estimate Comments	AMSCO	Est Cost	Est Total
CST #1 99TH RSC	PA0760EL0U	ELECTRIC	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F					0.00
	PA0760EL1U	ELECTRIC	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F					0.00
	PA0760GN0U	GAS	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F					0.00
	PA0760GN1U	GAS	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F					0.00
	PA0760SW0U	SEWAGE	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F					0.00
	PA0760SW1U	SEWAGE	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F					0.00
	PA0760WT0U	WATER	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F					0.00
	PA0760WT1U	WATER	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F					0.00
14	XS0000024P VALID	REPOINT BUILD	0	1994/10/05	PA076	GERMANTOWN VETERANS M	BMAR	U	12	EXTERIOR OF BUILDING	515978K2000	23,000.00	23,000.00
CST #1-4 99TH RSC	XS0000050S	GRASS	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		CUT GRASS	515978K3000	3,760.00	3,760
14	XS0000051S	GROUNDS MAINT. OY02	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		GROUNDS MAINT.	132R78V1000	3,760.00	3,760.00
CST #1 99TH RSC	XS0000058S	GRASS CONTRACT	0	1997/04/04	PA076	GERMANTOWN VETERANS M	ARR	F		CUT GRASS	515978K3000	3,400.00	3,400.00
	XS0000059S	GRASS CONTRACT	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		CUT GRASS	515978K3000	3,570.00	3,570.00
	XS0000060S	REFUSE	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		REFUSE	515979M2000	3,150.00	3,150.00
1	XS0000061S	REFUSE	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		REFUSE	131R79M1000	3,308.00	3,308.00
CST #1 99TH RSC	XS0000068S	REFUSE	0	1997/04/04	PA076	GERMANTOWN VETERANS M	ARR	F		TRASH	515979M2000	2,339.00	2,339.00
	XS0000069S	REFUSE	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		TRASH	515979M2000	3,119.74	3,119.74

WORK ORDER LIST REPORT

Sort Criteria: Command Priority, Work Order ID

Selection Criteria: Facility ID = PA076

Remarks	Work Order ID	Work Order Description	Command Priority	Date Received	FAC ID	Facility Name	Req Type	Fund Stat	Proj Stat	Estimate Comments	AMSCO	Est Cost	Est Total
CST #1- 4 99TH RSC	XS0000070S	CUSTODIAL	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		R-CUST	515979M4000	32,437.00	32,437.00
14	XS0000071S	CUSTODIAL NISH	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		CUSTODIAL	131R79M4000	33,323.00	33,323.00
	XS0000075P	INSTALL SMOKE DETECTORS VALID	0	1994/09/12	PA076	GERMANTOWN VETERANS M	OTR	U	12	INSTALL SMOKE DET.	515976L1000	4,000.00	4,000.00
CST #1 99TH RSC	XS0000078S	CUSTODIAL SVCS	0	1997/04/04	PA076	GERMANTOWN VETERANS M	ARR	F		R-CUST	515979M4000	32,057.00	32,057.00
	XS0000079S	CUSTODIAL SVCS	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		R-CUST	515979M4000	33,656.00	33,656.00
	XS0000080S	SNOW/SANDING IMPAC	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		SNOW IMPAC	515979M5000	375.00	375.00
	XS0000081S	SNOW/SANDING IMPAC	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		SNOW IMPAC	515979M5000	375.00	375.00
	XS0000088S	SNOW PLOWING SVC	0	1997/04/04	PA076	GERMANTOWN VETERANS M	ARR	F		APPROX 5007 SY	515979M5000	13,800.00	13,800.00
	XS0000089S	SNOW PLOWING SVC	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		SNOW/ICE REMOVAL	515979M5000	7,035.00	7,035.00
	XS0000090S	FIRE INSP	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		FIRE INSP	M1	200.00	200.00
14	XS0000091S	FIRE INSP	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		FIRE INSP	131R79P000	200.00	200.00
CST #1 99TH RSC	XS0000098S	FIRE INSP	0	1997/04/04	PA076	GERMANTOWN VETERANS M	ARR	F		FIRE INSP	M1	200.00	200.00
	XS0000099S	FIRE INSP	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		FIRE INSP	M1	200.00	200.00
1	XS0000101U	FUEL OIL	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		FUEL OIL	131R79J4000	1,000.00	1,000.00
14	XS0000104P	Upgrade EXTERIOR MEP LIGHTS ~~VALID~~ DELETE (DUPL.)	0	1994/10/05	PA076	GERMANTOWN VETERANS M	OTR	U	1	SECURITY	515976L0000	3,725.00	3,725.00
99TH RSC	XS0000107U	FUEL OIL	0	1996/10/18	PA076	GERMANTOWN VETERANS M	ARR	F	7	FUELOIL	515979J4000	0.00	0.00
	XS0000110U	FUEL OIL	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		F-FUEL OIL	515979J4000	850.00	850.00

WORK ORDER LIST REPORT

Sort Criteria: Command Priority, Work Order ID

Selection Criteria: Facility ID = PA076

Remarks	Work Order ID	Work Order Description	Command Priority	Date Received	FAC ID	Facility Name	Req Type	Fund Stat	Proj Stat	Estimate Comments	AMSCO	Est Cost	Est Total
14	XS0000126P	Replace Roof USARC/OMS VALID - URGENT NEED - REPAIR ONLY	0	1996/05/07	PA076	GERMANTOWN VETERANS M	BMAR	U	DO	REPAIR ROOF	515978K2000	~~450,000.00~~ 50,000	450,000.00
99TH RSC	XS0000160S	~~Roof and Gutter~~ Insp/cleaning DELETE	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		Insp/cln roof/gutter	515978K2000	~~1,000.00~~	1,000.00
14	XS0000161S	Roof and Gutter Insp/cleaning VALID	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		Insp/cln roof/gutter	132R78B1000	1,000.00	1,000.
	XS0000168S	~~Roof and Gutter~~ Insp/cleaning DELETE	0	1997/03/24	PA076	GERMANTOWN VETERANS M	ARR	U	KB	Insp/cln roof/gutter	515978K2000	~~1,000.00~~	1,000.00
99TH RSC	XS0000169S	~~Roof and Gutter~~ Insp/cleaning DELETE	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		Insp/cln roof/gutter	515978K2000	~~1,000.00~~	1,000.00
	XS0000170S	~~HVAC SERVICE AND~~ START UPS DELETE	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		HVAC service startup	515978K2000	~~2,300.00~~	2,300.00
14	XS0000171S	HVAC SERVICE AND STARTUP VALID	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		HVAC SVC/STARTUP	132R78B1000	2,300.00	2,300.00
	XS0000178S	~~HVAC SERVICE AND~~ START UPS DELETE	0	1997/04/03	PA076	GERMANTOWN VETERANS M	ARR	U	KB	HVAC service startup	515978K2000	~~2,300.00~~	2,300.00
99TH RSC	XS0000179S	~~HVAC SERVICE AND~~ START UPS DELETE	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		HVAC service startup	515978K2000	~~2,300.00~~	2,300.00
14	XS0000196P	REPAIR/REPLACE FLOOR TILE VALID	0	1996/05/03	PA076	GERMANTOWN VETERANS M	BMAR	S	DP	REPLACE FLOOR TILE	515978K2000	~~55,000.00~~ 15,000	55,000
	XS0000206P	REPAIR CEILING CRACKS RM 110 VALID	0	1996/05/03	PA076	GERMANTOWN VETERANS M	BMAR	U	1	REPAIR CEILING	515978K2000	3,000.00	3,000.00
	XS0000236P	REPAIR/REPAVE MOTOR POOL LOT VALID -- COULD BE FUNDED BY CITY OF PHILADELPHIA (RELATED TO SINKHOLES)	0	1996/05/03	PA076	GERMANTOWN VETERANS M	BMAR	U	1	REPAVE LOT	515978K2000	65,000.00	65,000
	XS0000266P	INSTALL DROP CEILING THROUGHOU DELETE	0	1996/05/03	PA076	GERMANTOWN VETERANS M	BMAR	S	DP	INSTALL DROP CEILING	515978K2000	~~50,000.00~~	50,000.00
	XS0000290P	IMPAC CARD	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		C-IMPAC CARD CHARGES	515978K2000	25,000.00	25,000.00
	XS0000290Z	Environmental IMPAC	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		C-ENVR IMPAC	51595615000	1,000.00	1,000.00
	XS0000291P	IMPAC CARD	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		C-IMPAC CARD CHARGES	515978K2000	25,000.00	25,000.00
	XS0000291Z	Environmental IMPAC	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		C-ENVR IMPAC	51595615000	1,000.00	1,000.00

Sort Criteria: Command Priority, Work Order ID

Selection Criteria: Facility ID = PA076

Remarks	Work Order ID	Work Order Description	Command Priority	Date Received	FAC ID	Facility Name	Req Type	Fund Stat	Proj Stat	Estimate Comments	AMSCO	Est Cost	Est Total
14	XS0000299P	IMPAC CARD	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		C-IMPAC CARD CHARGES	515978K2000	25,000.00	25,000.00
	XS0000299Z	Environmental IMPAC	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		IMPAC FY97ENVIRON	51595615000	1,000.00	1,000.00
CST #1 99TH RSC	XS0002010S	SERVICE FIRE EXTINQUISHERS	0	1999/05/07	PA076	GERMANTOWN VETERANS M	ARR	F		TEST	M1	199.00	199.00
	XS0002011S	FIRE EXT SVC	0	2000/02/10	PA076	GERMANTOWN VETERANS M	ARR	F		FIRE EXT TEST/INSP	131R79P000	199.00	199.00
	XS0002018S	SERVICE FIRE EXTINQUISHERS	0	1997/04/04	PA076	GERMANTOWN VETERANS M	ARR	F		TEST	M1	199.00	199.00
	XS0002019S	SERVICE FIRE EXTINQUISHERS	0	1998/02/06	PA076	GERMANTOWN VETERANS M	ARR	F		TEST	M1	199.00	199.00
14	XS0141369L	Construct Office & Latrine OMS DELETE	0	1999/03/23	PA076	GERMANTOWN VETERANS M	OTR	S	28	Construct Off. & lat	515976L1000	14,000.00	14,000.00
	XS0141709K	Repair/Replace Fence COMPLETED	0	1999/05/25	PA076	GERMANTOWN VETERANS M	BMAR	U	28	Replace Fence	132R78T2000	83,085.50	83,085.50
14	XS014TC09P	Site Survey	0	1999/05/03	PA076	GERMANTOWN VETERANS M	BMAR	U	1	Site Survey	132R78B1000	20,000.00	20,000.00
	XS014TC19P	Repair HVAC - UNIT (WALL) VENTILATORS - 6 ONLY	0	1999/05/03	PA076	GERMANTOWN VETERANS M	BMAR	U	1	Repair HVAC	132R78B2000	5,000 170,000.00	170,000
	XS014TC39P	Repair electrical Sys/ext lite INSTALL EXT. LIGHTS ONLY	0	1999/05/03	PA076	GERMANTOWN VETERANS M	BMAR	U	1	Repair electrical Sy	132R7853000	60,000.00 20,000	60,000.00
	XS014TC49P	Repair Bathrooms VALID	0	1999/05/03	PA076	GERMANTOWN VETERANS M	BMAR	U	1	Repair Bathrooms	132R78B1000	60,000.00	60,000.00
	XS014TC69P	Repair Utility Line to Prop DELETE	0	1999/05/03	PA076	GERMANTOWN VETERANS M	BMAR	U	1	Repair Utility Line	132R7853000	50,000.00	50,000.00
	XS0MF0220Z	GROUNDWATER MONITORING DELETE (DUPL)	0	1998/09/03	PA076	GERMANTOWN VETERANS M	OTR	U	PK	GROUNDWATER MONITORI	131R5650000	161,810.00	161,810.00
	XS0MF0228Z	GROUNDWATER MONITORING	0	1998/09/03	PA076	GERMANTOWN VETERANS M	OTR	U	PK	GROUNDWATER MONITORI	51595650000	33,548.00	33,548.00
99TH RSC	XS0MS0127Z	GERMANTOWN LTM	0	1997/04/07	PA076	GERMANTOWN VETERANS M	OTR	F	99	LONG TERM MONITORING	K1	10,000.00	10,000.00
	XS0MS0940Z	GROUNDWATER MONITORING VALID	0	2000/01/06	PA076	GERMANTOWN VETERANS M	OTR	U		GROUNDWATER MONITORI	131R5650000	161,810.00	161,810.00

WORK ORDER LIST REPORT

Sort Criteria: Command Priority, Work Order ID

Selection Criteria: Facility ID = PA076

Remarks	Work Order ID	Work Order Description	Command Priority	Date Received	FAC ID	Facility Name	Req Type	Fund Stat	Proj Stat	Estimate Comments	AMSCO	Est Cost	Est Total
14	XSARNET99P	Bldg infra-structure mod-ARNET COMPLETE	0	1999/04/01	PA076	GERMANTOWN VETERANS M	OTR	F	16	ARNET installation	132R76L1000	25,000.00	25,000.00
	XS014TC29P	~~Repair roof~~ DELETE (DUPL.)	72	1999/05/03	PA076	GERMANTOWN VETERANS M	BMAR	U	1	Repair roof	132R78B1000	400,000.00	400,000.00
	XS014TC59P	Repair Interior Lights (6 ROOMS ONLY)	78	1999/05/03	PA076	GERMANTOWN VETERANS M	BMAR	U	1	Repair Interior Ligh	132R78B1000	10,000 ~~80,000.00~~	80,000

TOTAL ESTIMATED COST: $2,257,089.24
TOTAL WORK ORDERS:

TOTAL * RPMA WORK ORDERS = $257,000

*EXCLUDES SERVICE ORDERS AND ENVIRONMENTAL ITEMS

JAN 99

CST #1 NEW WORK LISTING
(SOURCE: CPT DIAZ)

AREA	FACID	Buildin	Work Description	Work order Number	CITY	EST. COST
4	PA076	MB	One of the doors at drill hall needs replace ~~Weatherstrip~~ doors, New hardware Id		Germantown	200^I
4	PA076	MB	ceiling and lighting project DELETE - See RISER	XS0000266P	Germantown	0
4	PA076	MB	floor tile project ~~VALID~~ DELETE - See RISER	XS0000196P	Germantown	0
4	PA076	MB	molding in breezeway needs repair VALID - IMPAC CARD		Germantown	200^I
4	PA076	MB	upgrade emergency exit lighting VALID	XS014TC59P	Germantown	
4	PA076	MB	security lighting needs upgrade VALID	XS014TC59P	Germantown	
4	PA076	MB	~~replace all~~ interior doors - REPAIR/ADJUST - SOME NEW HARDWARE		Germantown	3,000
4	PA076	MB	need to do project to cover walls with gypsum DELETE		Germantown	0
4	PA076	MB	replace devider in 1stfloor classroom DELETE		Germantown	0
4	PA076	MB	parking re-mill, resurface, reseal, and restripe DELETE - See RISER	XS0000236P	Germantown	0
4	PA076	MB	Repair sink hole in parking lot DELETE - SEE RISER	XS0000236P	Germantown	0
4	PA076	MB	Replace gutters and roof DELETE - SEE RISER	XS0000126P	Germantown	0
4	PA076	MB	remove growth from around fence and tighten COMPLETED		Germantown	0
4	PA076	MB	POV parking lights inop/ need to add more DELETE SEE RISER	XS0000104P	Germantown	0
4	PA076	MB	sign VALID		Germantown	2,500
4	PA076	MB	tuckpoint, pressure wash and seal brick DELETE - SEE RISER		Germantown	0
4	PA076	MB	repair steps in front of building (1 CHIPPED STEP)		Germantown	200^I
4	PA076	MB	paint railings in front of building VALID		Germantown	500^I
4	PA076	MB	standing water on breezeway roof DELETE - SEE RISER	XS0000126P	Germantown	0
4	PA076	MB	fence near VA needs repair COMPLETED	XS0141709P	Germantown	0
4	PA076	MB	Repair concrete at side door entrance VALID		Germantown	500^I
4	PA076	MB	need lock hardware in comode stalls 2nd floor DELETE - SEE RISER	XS014TC49P	Germantown	0
4	PA076	MB	repaint or tile shower stall floors DELETE - SEE RISER	XS014TC49P	Germantown	0
4	PA076	MB	Need to regrout crack between floor and wall 2nd floor lat.	XS014TC49P VALID	Germantown	
4	PA076	MB	exhaust fan 2nd floor latrine inop DELETE - SEE RISER		Germantown	0
4	PA076	MB	remove old soap dispensers DELETE - SEE RISER	XS014TC49P	Germantown	0
4	PA076	MB	upgrade sinks DELETE - SEE RISER	XS014TC49P	Germantown	0
4	PA076	MB	old rifle range needs renovation NEED SCOPE DEFINED		Germantown	?
4	PA076	MB	wooden shelving in janitors closet rotted VALID		Germantown	100^I
4	PA076	MB	replace skid tile on stairs VALID - 4 EA		Germantown	400^I
4	PA076	MB	ceiling displays water filtration from roof DELETE - SEE RISER	XS014TC29P	Germantown	0
4	PA076	MB	Need exhaust fan in female latrine DELETE - SEE RISER	XS014TC49P	Germantown	0
4	PA076	MB	remove chalk board room 106,107,and 108 DELETE		Germantown	0
4	PA076	MB	install day gate in vault VALID		Germantown	750^I
4	PA076	MB	caging in vault need to be upgraded DELETE		Germantown	0
4	PA076	MB	improve supply caging REMOVE - REDEPLOY		Germantown	1000^I

SECTION 7: CST #1 - GENERATED WORK ORDER LIST (ANNOTATED)

ENCLOSURE C

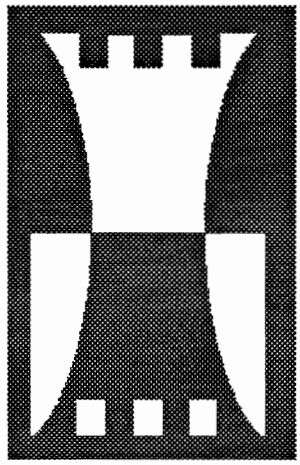
I = POSSIBLE IMPAC CARD

						EST. COST
4	PA076	MB	Convert 1st floor female latrine to HC unisex DELETE - RISER	XS014TC49P	Germantown	0
4	PA076	MB	Convert 1st floor male latrine to female DELETE - RISER	XS014TC49P	Germantown	0
4	PA076	OMS	need to install office and latrine at OMS DELETE	XS0141369L	Germantown	0
4	PA076	OMS	need to replace gutters at OMS DELETE - SEE RISER		Germantown	0
4	PA076	OMS	Reposition support beam at OMS DELETE		Germantown	0
4	PA076	OMS	Upgrade lighting at OMS VALID	XS014TC59P	Germantown	5,000
4	PA076	OMS	Install emergency eyewash and shower at OMS DELETE		Germantown	0
4	PA076	OMS	Exterior lighting needs repair DELETE - SEE RISER	XS0000104P	Germantown	0
4	PA076	OMS	remill resurface, seal and stripe MEP DELETE - SEE RISER	XS0000236P	Germantown	0
4	PA076	OMS	paint HAZMAT training shed at MEP VALID		Germantown	500

TOTAL NEW RPMA = $14,850

ENCLOSURE D

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY FACILITY ENGINEER GROUP (FEG)
10 S 100 South Frontage Road
Darien, IL 60561-1780



ARMS VAULT FACILITY STRUCTURAL CERTIFICATION

For

Germantown Veterans Memorial USAR Center

Germantown, Pennsylvania
Facility I.D. No. PA076

Date of Visit: 5-6 April 2000

PREPARED BY:

U.S. ARMY FACILITY ENGINEER GROUP (FEG)
FACILITY ENGINEER CENTER – NORTHEAST

FORT INDIANTOWN GAP
FACILITY ENGINEER TEAM
Annville, Pennsylvania

ENCLOSURE D

SECTION 1: FACILITY IDENTIFICATION

INSTALLATION NAME: GERMANTOWN VETERANS MEMORIAL USAR CENTER

IDENTIFICATION NUMBER: PA076

STREET ADDRESS: 5200 Wissahickon Avenue
Philadelphia, Pennsylvania 19144-4095

RSC/RSG: 99TH; Oakdale, Pennsylvania

FACILITY TYPE:

A. USARC:	X	B. AFRC:	___	C. OMS:	X	D. FLIGHT:	___
E. DS/GS:	___	F. MED:	___	G. WET:	___	H. FLIGHT:	___
I. ECS:	___	J. CTF:	___	K. OTHER:	___	*(description)*	

ASSESSMENT PERFORMED BY: Ft. Indiantown Gap FET

FACILITY ENGINEERING TEAM INCLUDED:

LTC Doug Garner	MAJ John Holtzman
1LT Eric Burkholder	SSG Doug Killough

REFERENCE FOR INFORMATION: LTC Doug Garner
c/o Lockheed Martin Control Systems
600 Main Street, Room 109
Johnson City, NY 13790
Work: (607) 770-2696

PERSONNEL CONTACTED ON SITE:

NAME/GRADE	DUTY POSITION	PHONE NUMBER	E-MAIL
Mr. Nick Taylor	Facility Manager	(610) 584-0536	
Ms. Yvonne Deloatch	Facility Coordinator	(215) 848-9101	

ASSESSMENT CONDUCTED FROM: 5 APR 2000/1000 TO: 6 APR 2000/1600

DATE OF LAST ASSESSMENT: 24 Feb 1998

ENCLOSURE D

DEPARTMENT OF THE ARMY
416TH ENGINEER COMMAND
FACILITY ENGINEER CENTER - NORTHEAST
FORT INDIANTOWN GAP TEAM
FORT MEADE, MARYLAND 20755-5116

AFRC-ENIL-FE-E 3 June 2000

MEMORANDUM FOR: Ms. Yvonne Deloatch
Germantown Veterans Memorial USAR Center
5200 Wissahickon Avenue
Philadelphia, PA 19144-4095

SUBJECT: Arms Vault Security Construction Statement: Germantown USAR Center

1. Enclosed for your information and use are two copies of DA Form 4604-R (Security Construction Statement) for the Arms Vault (Room 126) which is required to be posted inside the vault to document that the facility is in compliance with AR 190-11 dated 12 February 1998.

2. One of the copies should be kept in the unit administrator's permanent files in the U.S. Army Reserve Center. The other copy should be mounted to either the interior wall of the arms vault or the interior vault door surface.

3. The DA Form 4604-R shall be reviewed during physical security surveys and inspections and revalidated by engineer personnel every five years as per paragraph 2-2d of AR 190-11.

4. Point of contact for this action is LTC Garner, telephone: (607) 770-2696.

Encl

DOUGLAS F. GARNER
LTC, EN, USAR
Team Leader

CF: Director, Facility Engineer Center - NE, Building 8543,
ATTN: AFRC-ENIL-FE-E, Fort Meade, MD, 20755-5116
99th RSC Provost Marshal's Office, 5 Lobaugh Street, Oakdale, PA 15071

SECURITY CONSTRUCTION STATEMENT

For use of this form, see AR 190-11; the proponent agency is ODCSOPS

INSTRUCTIONS

This form will be prepared in three copies. The original will be maintained permanently in the files of the individual signing the form. The first copy will be maintained in the using unit/organizational files. The second copy will be filed permanently in the arms/ammunition storage facility. All entries except item 7 will be typed written.

1. THE CONSTRUCTION OF THIS FACILITY CONFORMS TO THE CRITERIA OF AR 190-11 WHICH IS IN EFFECT ON THIS DATE EXCEPT AS INDICATED HEREON

IAW Paragraph 2.2.d of AR 190-11 dated 12 February 1998, the undersigned conducted a visual revalidation inspection of the arms vault. The arms vault of this facility appears to meet the construction standards for Category II storage of arms, ammunition, and explosives.

The IDS of this facility meets the acceptable standards as outlined in Paragraph 3.6.a of AR 190-11, dated 12 February 1998.

Structural drawings were not available for review at the facility.

Equipment to determine concealed reinforcement size and spacing has not been provided to this unit conducting the inspection.

2. ROOM AND BUILDING NUMBER, STREET AND INSTALLATION ADDRESS

Germantown US Army Reserve Center
5200 Wissahickon Avenue
Philadelphia, PA 19144-4095

3. THIS APPLIES TO

a. ☒ AN EXISTING STRUCTURE
b. ☐ CONSTRUCTION OF NEW FACILITY
c. ☐ MODIFICATION OF EXISTING FACILITY *(Explain)*

4. NAME OF OFFICIAL SIGNING IN ITEM 7 BELOW	GRADE	6. ADDRESS OF OFFICIAL
Douglas F. Garner, PE	LTC, EN, USAR	Building 04-96 Ft. Indiantown Gap Annville, PA 17003
5. ORGANIZATION FIG Team ESG-East 416th ENCOM		

7. SIGNATURE	DATE SIGNED
DF Garner	3 JUNE 2000

DA FORM 4604-R, 1 MAR 77

SECURITY CONSTRUCTION STATEMENT

For use of this form, see AR 190-11; the proponent agency is DOCSOPS

INSTRUCTIONS

This form will be prepared in three copies. The original will be maintained permanently in the files of the individual signing the form. The first copy will be maintained permanently in the using unit/organizational files. The second copy will be filed permanently in the arms/ammunition storage facility. All entries except item 7 will be typewritten.

1. THE CONSTRUCTION OF THIS FACILITY CONFORMS TO THE CRITERIA OF AR 190-11 WHICH IS IN EFFECT ON THIS DATE EXCEPT AS INDICATED HEREON

The Arms Vault of this facility meets construction standards for storage of Category II and IV weapons, as per AR 190-11 para 2-2 d dtd 30 Sep 93.

The IDS of this facility meets acceptable standards as outlined in para 3-6 a, AR 190-11 dtd 30 Sep 93.

2. ROOM AND BUILDING NUMBER, STREET AND INSTALLATION ADDRESS

Germantown US Army Reserve Center
5200 Wissahickon Avenue
Philadelphia, PA 19144-4095

3. THIS APPLIES TO

a. X AN EXISTING STRUCTURE
b. ___ CONSTRUCTION OF NEW FACILITY
c. ___ MODIFICATION OF EXISTING FACILITY *(Explain)*

4. NAME OF OFFICIAL SIGNING IN ITEM 7 BELOW — GRADE
JOHN P CHASARIK LTC, EN USAR (Ret)

6. ADDRESS OF OFFICIAL
5 Lobaugh Street
Oakdale, PA 15071 5001

5. ORGANIZATION
99th Reserve Support Command

7. SIGNATURE
John P Chasarik

DATE SIGNED
24 FEB 98

DA FORM 4604-R, 1 MAR 77

ENCLOSURE D

ARMS VAULT CERTIFICATION CHECK LIST
Existing Construction (Not National Guard)

FACILITY: GERMANTOWN VETERANS MEMORIAL USAR CENTER
5200 Wissahickon Avenue
Philadelphia, Pennsylvania 19144-4095

POINT OF CONTACT: SGT Mack
Phone Number: (215) 848-9100

A. FLOORS	YES	NO
1. ** 6-inch concrete slab on grade reinforced with 6-inch by 6-inch 4.0/4.0 WWF minimum or the equivalent reinforcing steel bars.	X*	____
2. ** 6-inch minimum thickness concrete slab reinforced with # 4 bars or larger forming a grid pattern that does not exceed 96 square inches (where the floor forms the ceiling of an underlying room or area).	____	____
3. **6-inch minimum thickness reinforced concrete slab (either WWF or rebar, no minimum size reinforcement or minimum spacing of reinforcement specified).**		____

*** NOTE: This unit has not been provided the equipment to determine concealed reinforcement size and spacing. Structural plans indicating the reinforcement design were not available either onsite or from the CST.**

B. WALLS*		
1. ** 8-inch thick reinforced concrete with # 4 bars at 9 inches on center in each direction (vertical & horizontal).	____	____
2. ** 8-inch thick concrete masonry with # 4 bars threaded through concrete masonry unit cavities (no spacing specified). Cells of concrete masonry unit cavities are filled with mortar or concrete. Horizontal joint reinforcement is provided at each course.	____	____
3. **8-inch thick reinforced solid brick wall; or**	X*	____
4. **8-inch thick reinforced concrete masonry with cells of concrete masonry unit cavities filled with concrete (no minimum size reinforcing or spacing specified); or**	____	____
5. **The walls are constructed of 12-inch thick non-reinforced solid brick masonry.**	____	____

*** NOTE: This unit has not been provided the equipment to determine concealed reinforcement size and spacing. Structural plans indicating the reinforcement design were not available either onsite or from the CST.**

Note: Another incomplete specification is provided for a masonry block wall, but is unusable as written in the AR. Walls that do not meet any of the above criteria must be reinforced using one of the 7 methods specified in Appendix G-2.b.

C. CEILING	YES	NO
1. ** 6-inch minimum thickness concrete slab reinforced with # 4 bars or larger forming a grid pattern that does not exceed 96 square inches.	X*	____

Note: Items shown in **Bold** typeface are minimum mandatory standards. If the YES column entry can not be checked or one of the better standards is not met, the vault is not in compliance with AR 190-11 dated 12 February 1998, and can not be certified for the storage of Category II and III arms and ammunition.

** Indicates new facility construction criteria which is better than existing structure criteria.

2. **6-inch minimum thickness reinforced concrete (no minimum size or minimum spacing of reinforcement specified).**	___	____
3. Concrete Pan Joists: Thinnest portion of the joist not less than 6-inches and the clear space between joists does not exceed 20-inches.	____	____

*** NOTE: This unit has not been provided the equipment to determine concealed reinforcement size and spacing. Structural plans indicating the ceiling thickness and reinforcement design were not available either onsite or from the CST.**

D. DOORS		
1. GSA approved Class 5 steel door (Fed. Spec. AA-D-600B) with a built in 3 position, dial type, changeable combination lock used in lieu of the door described below (not required).	X	____
2. Day Gate provided (not required).	___	____
3. Pass through window provided within Day Gate (not required).	____	____
4. ** Door is 1-3/4 inch thick solid core wood or laminated wood with 12-gauge metal plate securely attached to the outside face.	____	____
5. ** Door is 1-3/4 inch thick hollow, metal industrial type construction with minimum 14-gauge skin plate thickness, internally reinforced vertically with continuous steel stiffeners spaced 6-inches maximum on center.	X*	____
6. Two doors provided to arms vault. One door as described in E4 or E5 above. (Double door protection is not required).	____	____
7. **Door is 1-3/4 inch thick solid core wood with wood block cores; or**	____	____
8. **Door is 1-3/4 inch thick hollow type construction with minimum 16-gauge skin plate thickness.**	____	____

*** NOTE: Individual unit room within Arms Vault.**

E. DOORS AND HARDWARE	YES	NO
1. ** Door bucks, frames and keepers are rigidly anchored and provided with antispread space filler reinforced to prevent disengagement of the lock bolt by prying or jacking the doorframe.	X	____
2. ** Frames and locks for interior and exterior doors are so designed and installed as to prevent sufficient removal of the frame facing or the built in locking mechanism to allow disengagement of the lock bolt from the outside when the door is closed and locked.	X	____
3. ** Door hinges are fixed pin security type. Exposed hinge pins will be pinned, spot welded or otherwise secured to prevent removal, and Hinge-mounting screws are not exposed to the outside of the arms vault (except for Class 5 steel vault door hinges).	X	____
4. Doorframes will be a minimum of 16-gauge steel; and	X	____
5. Door hinges shall not be exposed to the outside of the arms storage area and hinge pins shall be secured to prevent removal; and	X	____
6. Doors shall be secured with authorized padlocks [KEYS].	___	____

Note: Items shown in **Bold** typeface are minimum mandatory standards. If the YES column entry can not be checked or one of the better standards is not met, the vault is not in compliance with AR 190-11 dated 12 February 1998, and can not be certified for the storage of Category II and III arms and ammunition.

** Indicates new facility construction criteria which is better than existing structure criteria.

F. WINDOWS AND OTHER OPENINGS		
1. No openings existing in walls or ceilings.	X	____
2. ** **All openings greater than 96 square inches are protected by rod-and-bar grid as required in Appendix G-1.e.**	___	____

G. ARMS ROOM ANCHOR RINGS		
1. Anchor rings provided in arms room floor or walls to secure arms racks.	X	____

H. INTRUSION DETECTION SYSTEM (IDS)		
1. **Intrusion detection system provided for vaults as required in AR 190-11, to include two types of sensors, one of which must be a volumetric sensor; and**	X	____
2. **Alarms at local law enforcement/contract security alarm monitoring station.**	X	____

H. INTRUSION DETECTION SYSTEM (IDS) Cont	YES	NO
3. **Is there a sign (constructed in accordance with Appendix F, AR 190-11) announcing the presence of the IDS prominently displayed at eye level on the exterior of each interior wall that contains an entrance to the vault; and**	X	___
4. **The vault is designated and posted as a restricted area in accordance with AR 190-13.**	X	___
I. SECURITY LIGHTING		
1. **Entrance door to arms vault is illuminated by lighting, or, when the vault is located within another room, the entrance door to the room is illuminated.**	X	___
J. MECHANICAL		
1. Electrical Humidifier provided for vault humidifier control.	___	X
2. 3-inch floor drain provided for dehumidifier.	X	___
K. DA FORM 4604-R SECURITY CONSTRUCTION STATEMENT		
1. DA FORM 4604-R posted on an interior surface of the vault as required by AR190-11, Section 2.2.d.	X	___
2. DA FORM 4604-R reviewed and revalidated by Engineer personnel within the last 5 years as required by AR190-11, Section 2.2.d.	X	___
L. SUMMARY		
1. This facility meets Class II storage requirements for weapons.	X	___

Note: Items shown in **Bold** typeface are minimum mandatory standards. If the YES column entry can not be checked or one of the better standards is not met, the vault is not in compliance with AR 190-11 dated 12 February 1998, and can not be certified for the storage of Category II and III arms and ammunition.

** Indicates new facility construction criteria which is better than existing structure criteria.

M. WAIVERS, UNUSUAL REQUIREMENTS AND ADDITIONAL FEATURES

N. CERTIFICATION OF COMPLIANCE WITH CRITERIA SET FORTH IN AR 190-11

This facility meets the minimum structural criteria specified in Appendix G-2 of AR 109-11 dated 12 February 1998 for existing facilities located either on or off a military installation, and therefore meets the minimum structural standards for the storage of Category II and Category III arms. In addition, the storage of small quantities of Category II and Category III ammunition may be authorized by the commander to be stored in the vault with the weapons in accordance with the provisions of Section 5-8c.(1)(a) of AR 190-11.

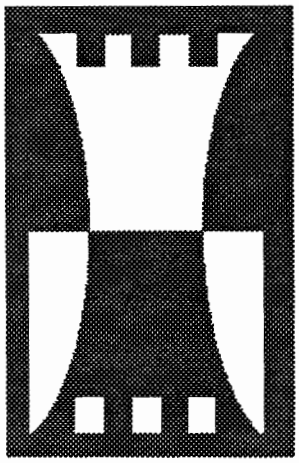
DF Garner

DOUGLAS F. GARNER
LTC, EN, USAR
Team Leader, U.S. Army FEG

Date: 3 June 2000

ENCLOSURE E

DEPARTMENT OF THE ARMY
UNITED STATES ARMY FACILITY ENGINEER GROUP
416TH ENGINEER COMMAND
10 South 100 Frontage Road
Darien, IL 60561-1780



SPACE UTILIZATION

For

Germantown Veterans Memorial USAR Center

Germantown, Pennsylvania
Facility I.D. No. PA076

Date of Visit: 5-6 April 2000

PREPARED BY:

FACILITY ENGINEER GROUP (416th ENCOM)
FACILITY ENGINEER CENTER - NORTHEAST

FORT INDIANTOWN GAP
FACILITY ENGINEERING TEAM
Annville, Pennsylvania

ENCLOSURE E

SECTION 1: FACILITY IDENTIFICATION

INSTALLATION NAME: GERMANTOWN VETERANS MEMORIAL USAR CENTER
INSTALLATION NUMBER: PA076
STREET ADDRESS: 5200 Wissahickon Avenue
CITY/TOWN: Germantown (Philadelphia)
STATE: PA
ZIP CODE: 19144-4095
RSC/RSG: 99th RSC
FACILITY TYPE:

A. USARC:	_X_	B. AFRC:	___	C. OMS:	_X_	D. FLIGHT:	___
E. DS/GS:	___	F. MED:	___	G. WET:	___	H. FLIGHT:	___
I. ECS:	___	J. CTF:	___	K. OTHER:			

ASSESSMENT PERFORMED BY:
FACILITY ENGINEER TEAM INCLUDED:

LTC Doug Garner
MAJ John Holtzman
1LT Eric Burkholder
SSG Doug Killough

REFER TO FOR INFORMATION: LTC Doug Garner
309 Fordham Road
Vestal, NY 13850
Work: (607) 770-2696
Home: (607) 798-6650

PERSONNEL CONTACTED ON SITE:

NAME/GRADE	DUTY POSITION	PHONE NUMBER	E-MAIL
Mr. Nick Taylor	Facility Manager	(610) 584-0536	
Ms. Yvonne Deloatch	Facility Coordinator	(215) 848-9101	

ASSESSMENT CONDUCTED FROM: 5 APR 2000/1000 TO: 6 APR 2000/1600
DATE OF LAST ASSESSMENT: 16-18 SEP 1996

GERMANTOWN MEMORIAL USARC - REAL PROPERTY/SQUARE FOOTAGE SUMMARY
FACILITY DATA - PA076
TRAINING CENTER BUILDING

Room No.	Room Name	Room Dimensions						Room Area (nsf)	Room Volume (cf)	HVAC Code *1.	Use Code *2.	User	Remarks
		Length (ft)		Width (ft)		Height (ft)							
First Floor													
	Lobby	20	20.0	28	28.0	11	11.0	560	6,160	HA	IA6		
	Corridor	232	232.0	7	7.0	9	9.0	1,624	14,616	HA	---		
	Stairs #1	16	16.0	8	8.0	21	21.0	128	2,688	H	---		
101	Office	26	26.0	20	20.0	9	9.0	520	4,680	HA	IA1	233RD QM	
102	Office	13	13.0	20	20.0	9	9.0	260	2,340	HA	IA1	233RD QM	
103	Office	13	13.0	20	20.0	9	9.0	260	2,340	HA	IA2	233RD QM	
104	Office	11	11.0	20	20.0	9	9.0	220	1,980	HA	IA2	233RD QM	
105	Storage	26	26.0	20	20.0	9	9.0	520	4,680	HA	IF1	233RD QM	
106	Supply Office	60	60.0	21	21.0	9	9.0	1,260	11,340	HA	IF3	233RD QM	
108	Office	30	30.0	21	21.0	9	9.0	630	5,670	HA	IA2	233RD QM	
109	Office	20	20.0	21	21.0	9	9.0	420	3,780	HA	IA2	233RD QM	
110	Storage	50	50.0	21	21.0	9	9.0	1,050	9,450	HA	IF1	233RD QM	
112	Storage	33	33.0	21	21.0	9	9.0	693	6,237	HA	IF1	233RD QM	
113	Office	22	22.0	20	20.0	9	9.0	440	3,960	HA	IA2	233RD QM	
114	Arms Vault	40	40.0	20	20.0	9	9.0	800	7,200	HA	ID1	233RD QM	
115	Storage	11	11.0	15	15.0	9	9.0	165	1,485	HA	IF1	233RD QM	
116	Office	12	12.0	15	15.0	9	9.0	180	1,620	HA	IA2	233RD QM	
117	Storage	12	12.0	15	15.0	9	9.0	180	1,620	HA	IF2	233RD QM	
118	Assembly Hall	70	70.0	52	52.0	21	21.0	3,640	76,440	H	IB1	233RD QM	
119	Kitchen	15	15.0	16	16.0	9	9.0	240	2,160	HA	IC	233RD QM	
120	Female Latrine	15	15.0	15	15.0	9	9.0	225	2,025	HA	IH2	233RD QM	
121	Office	20	20.0	30	30.0	14	14.0	600	8,400	HA	IH7	233RD QM	
122	Office	20	20.0	19	19.0	9	9.0	380	3,420	HA	IA2	233RD QM	
123	Male Latrine	20	20.0	13	13.0	9	9.0	260	2,340	HA	IH1	233RD QM	
124	Office	20	20.0	30	30.0	9	9.0	600	5,400	HA	IA2	233RD QM	
125	Office	20	20.0	14	14.0	9	9.0	280	2,520	HA	IA2	233RD QM	
126	Classroom	20	20.0	31	31.0	8	8.0	620	4,960	HA	IE1	233RD QM	
127	Classroom	20	20.0	31	31.0	8	8.0	620	4,960	HA	IE1	233RD QM	
128	Classroom	20	20.0	29	29.0	8	8.0	580	4,640	HA	IE1	233RD QM	
129	Office	20	20.0	37	37.0	8	8.0	740	5,920	HA	IA4	RECRUITER	
	Stairs #2	20	20.0	9	9.0	21	21.0	180	3,780	H			
Second Floor													
	Lobby	20	20.0	18	18.0	9	9.0	360	3,240	HA	IA6		
	Corridor	232	232.0	7	7.0	9	9.0	1,624	14,616	HA			
201	Classroom	20	20.0	31	31.0	9	9.0	620	5,580	HA	IE1	233RD QM	
202	Classroom	20	20.0	31	31.0	9	9.0	620	5,580	HA	IE1	233RD QM	
203	Office	20	20.0	16	16.0	9	9.0	320	2,880	HA	IA2	233RD QM	
204	Office	20	20.0	15	15.0	9	9.0	300	2,700	HA	IA2	233RD QM	
205	Office	20	20.0	18	18.0	9	9.0	360	3,240	HA	IA2	233RD QM	
206	Office	20	20.0	13	13.0	9	9.0	260	2,340	HA	IA2	233RD QM	

NOTES:
Note 1: See HVAC Code Legend
Note 2: See EMAAR Facility Data Use Code Legend

Assessment Conducted:
05-06 APR 00

GERMANTOWN MEMORIAL USARC - REAL PROPERTY/SQUARE FOOTAGE SUMMARY
FACILITY DATA - PA076
TRAINING CENTER BUILDING

Room No.	Room Name	Room Dimensions						Room Area (nsf)	Room Volume (cf)	HVAC Code *1.	Use Code *2.	User	Remarks
		Length (ft)		Width (ft)		Height (ft)							
207	Office	16	16.0	11	11.0	9	9.0	176	1,584	HA	IA2	233RD QM	
208	NBC Room	20	20.0	22	22.0	9	9.0	440	3,960	HA	IF1	233RD QM	
209	Office	20	20.0	38	38.0	9	9.0	760	6,840	HA	IA2	233RD QM	
210	Male Latrine	20	20.0	23	23.0	9	9.0	460	4,140	HA	IH1	233RD QM	
211/212	Classroom	20	20.0	35	35.0	9	9.0	700	6,300	HA	IE1	233RD QM	
213	Storage	20	20.0	110	110.0	9	9.0	2,200	19,800	HA	IF1	233RD QM	
215	Janitor Closet	5	5.0	8	8.0	9	9.0	40	360	U	IF4	233RD QM	
216	Storage	20	20.0	8	8.0	9	9.0	160	1,440	HA	IF1	233RD QM	
Total Main Bldg. Net Area (NSF)								24,719					
Circulation Net Area (Actual)								3,556					
Structure (Actual)								2,219					
Total Main Bldg. Gross Area (GSF)								30,494					

OMS

Room No.	Room Name	Room Dimensions						Room Area (nsf)	Room Volume (cf)	HVAC Code *1.	Use Code *2.	User	Remarks
		Length (ft)		Width (ft)		Height (ft)							
	Maint. Garage	114	114.0	53	53.0	15	15.0	6,042	90,630	H	IIA	233RD QM	
Total Center Net Area (NSF)								6,042					
Circulation Net Area (Actual)								0					
Structure (Actual)								0					
Total Center Gross Area (GSF)								6,042					

USAR CENTER

Total Center Net Area (NSF)								30,761					
Circulation Net Area (Actual)								3,556					
Structure (Actual)								2,219					
Total Center Gross Area (GSF)								36,536					

NOTES:
Note 1: See HVAC Code Legend
Note 2: See EMAAR Facility Data Use Code Legend

Assessment Conducted:
05-06 APR 00

LEGENDS

EMAAR FACILITY DATA USE CODE LEGEND

FROM DA FORM 5034-R, JAN 94 REFERENCE AR 140-483

I. TRAINING BUILDING	II. MAINTENANCE SHOPS
A. ADMINISTRATIVE AREAS	A. ORGANIZATIONAL MAINTENANCE
(1) FULL TIME	(1) SHOP OFFICE
(2) UNIT EXCLUSIVE	(2) UNISEX TOILET
(3) UNIT COMMON	(3) TOOL & PARTS ROOM
(4) RETENTION	(4) STORAGE ROOM
(5) ADMINISTRATIVE SUPPORT	(5) BATTERY ROOM
(a) GENERAL	(6) FLAMMABLE STORAGE
(b) RCAS	(7) CONTROLLED WASTE STORAGE
(6) LOBBY	(8)
B. ASSEMBLY AREA	(9)
(1) ASSEMBLY AREAS	B. AREA MAINTENANCE SUPPORT
(2) CHAIR AND TABLE STORAGE	(1) SHOP OFFICE
C. KITCHEN - STD DESIGN	(2) MEN'S TOILET
D. WEAPONS AREA	(3) WOMEN'S TOILET
(1) VAULT	(4) LOCKER ROOM
(2) ARMORER	(5) CLASSROOM/BREAK AREA
E. EDUCATIONAL AREAS	(6) TOOL ROOM
(1) CLASSROOMS	(7) SUPPLY ROOM
(2) LIBRARY READING ROOM	(8) BATTERY ROOM
(3) LIBRARY STORAGE	(9) COMMO/ELECTRONICS SHOP
(4) LEARNING CENTER	(10) INSTRUMENT REPAIR
(5) TRAINING AIDS STORAGE	(11) SMALL ARMS REPAIR
(6) COMSEC TRAINING	(12) SMALL ARMS VAULT
(7) COMSEC STORAGE	(13) FLAMMABLE STORAGE
(8) USARF INSTRUCTOR ROOM	(14) CONTROLLED WASTE STORAGE
(9) USARF PUBLICATIONS STORAGE	(15)
F. STORAGE AREAS	(16)
(1) UNIT/INDIVIDUAL	(17)
(2) STAGING AREA	C. JOINT MAINT AREAS (OMS/AMSA)
(3) SUPPLY OFFICE	(1) WORK BAYS
(4) JANITORIAL STORAGE	(2) MECHANICAL/CUSTODIAL
(5) FLAMMABLE STORAGE	(3)
(6) CONTROLLED WASTE	
(7) FACILITY MAINTENANCE	**III. UNHEATED STORAGE**
G. SPECIAL TRAINING AREAS	A. UNIT/INDIVIDUAL STORAGE
(1) RIFLE RANGE	B. STAGING AREA
(2) PHOTO LAB	
(3) BAND ROOM	**IV. SUPPORTING FACILITIES**
(4) MEDICAL SECTION	A. PRIVATELY-OWNED VEHICLE
(5) PHYSICAL EXAM WING	(1) PARKING - CENTER (SY)
(6) SCIF	(2) PARKING - AMSA (SY)
(7) SOIL TESTING LAB	B. MILITARY EQUIPMENT PARK
(8) G.O. CONFERENCE	(1) OMS (SY)
(9) DRAFTING ROOM	(2) AMSA (SY)
(10) PHYSICAL READINESS	C. WASH PLATFORMS
(11) WWNCCS	(1) OMS (EA)
(12) AMSA ELECTRONICS SHOP	(2) AMSA (EA)
H. SUPPORT AREA	D. COVERED STORAGE (SF)
(1) MEN'S TOILETS & SHOWERS	E. MEP FENCING (LF)
(2) WOMEN'S TOILETS & SHOWERS	F. MEP LIGHTING (EA)
(3) UNISEX HANDICAP TOILET	G. ACCESS ROADS (SY)
(4) LOCKER ROOM	
(5) VENDING ALCOVE	**HVAC CODE LEGEND**
(6) BREAK AREA	
(7) MECHANICAL	H: Room Heated Only
(8) ELECTRICAL	A: Room Air-Conditioned Only
(9) TELEPHONE	HA: Room Heated & Air-Conditioned
	U: Room is Unconditioned

FACILITY DATA SUMMARY GERMANTOWN MEMORIAL USARC			DATE: 06 APR 00 FACILITY: PA076 LOCATION: Philadelphia,PA
	Existing Area (nsf)	Area Subtotals (nsf)	Total (nsf)
I. TRAINING BUILDING			24719
A. ADMINISTRATIVE AREAS		8026	
(1) FULL TIME	780		
(2) UNIT EXCLUSIVE	5,586		
(3) UNIT COMMON			
(4) RETENTION	740		
(5) ADMINISTRATIVE SUPPORT			
(a) GENERAL			
(b) RCAS			
(6) LOBBY	920		
B. ASSEMBLY AREA		3,640	
(1) ASSEMBLY AREAS	3,640		
(2) CHAIR AND TABLE STORAGE			
C. KITCHEN - STD DESIGN	240	240	
D. WEAPONS AREA		800	
(1) VAULT	800		
(2) ARMORER			
E. EDUCATIONAL AREAS		3,760	
(1) CLASSROOMS	3,760		
(2) LIBRARY READING ROOM			
(3) LIBRARY STORAGE			
(4) LEARNING CENTER			
(5) TRAINING AIDS STORAGE			
(6) COMSEC TRAINING			
(7) COMSEC STORAGE			
(8) USARF INSTRUCTOR CLASSROOM			
(9) USARF PUBLICATIONS STORAGE			
F. STORAGE AREAS		6,708	
(1) UNIT/INDIVIDUAL EQUIPMENT	5,228		
(2) STAGING AREA	180		
(3) SUPPLY OFFICE	1,260		
(4) JANITORIAL STORAGE	40		
(5) FLAMMABLE STORAGE			
(6) CONTROLLED WASTE STORAGE			
(7) FACILITY MAINTENANCE			
G. SPECIAL TRAINING AREAS		0	
(1) RIFLE RANGE			
(2) PHOTO LAB			
(3) BAND ROOM			
(4) MEDICAL SECTION AREA			
(5) PHYSICAL EXAM WING			
(6) SCIF			
(7) SOILS TESTING LAB			
(8) G.O. CONFERENCE ROOM			
(9) DRAFTING ROOM			
(10) PHYSICAL READINESS AREA			
(11) AGCCS			

FACILITY DATA SUMMARY GERMANTOWN MEMORIAL USARC			DATE: 06 APR 00 FACILITY: PA076 LOCATION: Philadelphia,PA
	Existing Area (nsf)	Area Subtotals (nsf)	Total (nsf)
(12) AMSA ELECTRONICS SHOP			
(13)			
	Existing Area (nsf)	Area Subtotals (nsf)	Total (nsf)
H. SUPPORT AREA		1,545	
(1) MEN'S TOILETS & SHOWERS	720		
(2) WOMEN'S TOILETS & SHOWERS	225		
(3) UNISEX HANDICAP TOILET			
(4) LOCKER ROOM			
(5) VENDING ALCOVE			
(6) BREAK AREA			
(7) MECHANICAL/CUSTODIAL	600		
(8) ELECTRICAL			
(9) TELEPHONE			
TOTAL CENTER NET TRAINING AREA			24,719
CIRCULATION ALLOWANCE (ACTUAL)			3,556
STRUCTURAL ALLOWANCE			2,219
TOTAL CENTER NET TRAINING AREA			30,494
OUTGRANTED AREA			
TOTAL CENTER GROSS AREA			30,494
II. MAINTENANCE SHOPS (AMSA, BMA, OMS)			6,042
A. MAINTENANCE SHOP (BMA/OMS)		6,042	
(1) SHOP OFFICE			
(2) UNISEX TOILET			
(3) TOOL & PARTS ROOM			
(4) STORAGE ROOM			
(5) BATTERY ROOM			
(6) FLAMMABLE STORAGE			
(7) CONTROLLED WASTE STORAGE			
(8) HAZARDOUS MATERIAL STRG.			
(9)	6,042		
B. AREA MAINTENANCE SUPPORT		0	
(1) SHOP OFFICE			
(2) MEN'S TOILET			
(3) WOMEN'S TOILET			
(4) LOCKER ROOM			
(5) CLASSROOM/BREAK AREA			
(6) TOOL ROOM			
(7) SUPPLY ROOM			
(8) BATTERY ROOM			
(9) COMMO/ELECTRONICS SHOP			
(10) INSTRUMENT REPAIR			
(11) SMALL ARMS REPAIR			
(12) SMALL ARMS VAULT			
(13) FLAMMABLE STORAGE			
(14) CONTROLLED WASTE STORAGE			
(15)			

FACILITY DATA SUMMARY GERMANTOWN MEMORIAL USARC			DATE: 06 APR 00 FACILITY: PA076 LOCATION: Philadelphia,PA
	Existing Area (nsf)	Area Subtotals (nsf)	Total (nsf)
C. JOINT MAINT AREAS (AMSA/BMA/OMS)		0	
(1) WORK BAYS			
(2) MECHANICAL/CUSTODIAL			
(3)			
TOTAL SHOP NET AREA			6,042
STRUCTURAL ALLOWANCE			
TOTAL SHOP GROSS AREA			6,042
OUTGRANTED AREA			
TOTAL SHOP AVAILABLE GROSS AREA			6,042
	Existing Area (nsf)	Area Subtotals (nsf)	Total (nsf)
III. EQUIPMENT STORAGE		0	0
UNHEATED STORAGE			
(1) UNIT/INDIVIDUAL STORAGE			
(2) STAGING AREA			
TOTAL UNHEATED STORAGE NET AREA			
STRUCTURAL ALLOWANCE			
TOTAL UNHEATED STORAGE GROSS AREA			
OUTGRANTED AREA			
TOTAL UNHEATED STORAGE AVAIL. GROSS AREA			
IV. SUPPORTING FACILITIES			
A. PRIVATELY-OWNED VEHICLE		0	0
(1) PARKING - CENTER (SY)			
(2) PARKING - AMSA/BMA/OMS (SY)			
B. MILITARY EQUIPMENT PARK		0	0
(1) AMSA (SY)			
(2) BMA (SY)			
(3) OMS (SY)			
C. WASH PLATFORMS		0	0
(1) AMSA (EA)			
(2) BMA (EA)			
(3) OMS (EA)		0	
D. COVERED STORAGE (SF)		0	0
E. MEP FENCING (LF)		0	0
F. MEP LIGHTING (EA)		0	0
G. ACCESS ROADS (SY)		0	0

REMARKS:

1. Above paragraph numbers correspond with paragraph numbers contained on DA Form 5034-R (Project Documentation Space Allowance Worksheet).
2. Refer to GERMANTOWN MEMORIAL USARC Real Property/Square Footage Summary, PA076.
3. Areas, both net square feet (NSF) & gross square feet (GSF), were derived from random sample measurements & drawings.

S: 16 JUNE 1994

AFRC-IBPA-DBC (200-1) 16 May 1994

MEMORANDUM FOR Commander, 1-315 Germantown Veterans Memorial U.S.Army Reserve Center, 5200 Wissahickon Avenue, Philadelphia,Pa 19144-4095

SUBJECT: Response to Environmental Compliance Assessment Report

1. Respond to the report on the Environmental Compliance Assessment conducted at your U.S.Army Reserve Center.

2. For each remaining citation, report the corrective actions which have been taken to remedy the violation. Include photocopies of the appropriate documents which verify that the actions have been taken. Enclosed are copies of actions taken by the Brigade Engineer and a breakdown of findings to assist you.

3. The point of contact at this headquarters is MAJ J. Michael Hobson, (215) 957-8608/8607.

FOR THE COMMANDER:

Encl
as

THOMAS E. GARNETT
COL, AR
Deputy Brigade Commander

Department of the Army
Headquarters, 157th Separate Infantry Brigade (Mechanized)
Horsham Corporate Center
400 Horsham Road
Horsham, Pennsylvania 19044-2189

AFRC-IBPA-EN 16 MAY 1994

MEMORANDUM FOR COMMANDER, 1-315TH GERMANTOWN VETERANS MEMORIAL U.S.ARMY RESERVE CENTER, ATTN: CPT KOSE, 5200 WISSAHICKON AVENUE, PHILADELPHIA, PA, 19144-4095

SUBJECT: Environmental Compliance Assessment Army Reserve (ECAAR) Report

1. References:

A. Memorandum AFRC-IBPA-EN (200), 8 September 1993, Subject: Environmental Compliance Assessment Army Reserve (ECAAR) - Germantown Veterans Memorial USARC.

B. Memorandum AFRC-IBPA-315-XO, 19 April 1994, Subject: Response to Environmental Compliance Assessment Report.

2. To assist you in developing the final corrective action plan for your facility, I have enclosed a breakdown in addition to your responses which should be used as guidance for completing actions.

3. Point of contact this headquarters is the undersigned, (215) 957-8607/8608.

Encl
as

J MICHAEL HOBSON
MAJ, EN
Brigade Engineer

CF:
LTC Ryan, Bde XO

DEPARTMENT OF THE ARMY
Germantown Veteran's Memorial USARC
5200 Wissahickon Avenue
Philadelphia, PA 19144-4095

AFRC-IBPA-315-XO 19 April 1994

MEMORANDUM FOR Commander, 157th Separate Infantry Brigade, ATTN: AFRC-IBPA-EN, 400 Horsham Road, Horsham, PA 19044-2189

SUBJECT: Response to Environmental Compliance Assessment Report

1. Corrective actions are as follows; supporting documentation is attached:

4-18.1	All solid waste awaiting disposition has been classified and picked up by DRMO.
4-24.1	Accumulation start date is now being annotated. This installation, however, does not generate 100 kgs of hazardous waste.
4-28.1	All solid waste has been emptied from the subject vehicle.
4-37.1	Weekly and monthly inspections of the facility are now being conducted and documented.
5-4.1	Thirty (30) waste cans have been requisitioned to separate waste for re-cycling.
8-4.1	Testing of these transformers has been completed. Lab report indicates that no PCBs were found (Encl 1).
1-2.1	All required DoD Directives, ARs or State Regulations are now on hand or on requisition.
2-2.1	Same as above.
2-15.1	A work order has been submitted for construction of a spill containment berm in the POL shed (Encl 2). The paint storage container is temporary and will be removed.
3-2.1	Applicable DoD Directives, ARs and State Regulations are now on order.
4-2.1	The required Hazardous Waste Management Guide for Commanders is on file in the Motor Pool Office.
4-6.1	The The Hazardous Waste Management Plan is in effect and and in writing.

AFRC-IBPA-315-XO
SUBJECT: Response to Environmental Compliance Assessment Report

5-2.1	All required regulations and directives have been received or are on order.
6-2.1	The new underground 2,500 gal. storage tank falls under the minimum requiring documentation (10,000 gals.).
6-4.1	No oil or anti-freeze is changed at this facility. POL on hand is only added when necessary.
6-7.1	The tank is "dipped" each week to determine consumption. A work order has been submitted to have the tank tested annually.
6-27.1	A copy of the installation certificate is on file in the motor pool.
7-2.1	All applicable regulations have been requested.
8-2.1	A copy of the DoD Toxic Waste Identification and Disposal publication is on file in the motor pool office.
9-2.1	This facility does not store or handle insecticides or rodenticides.
10-2.1	This facility is not an historical site. Site records are on file at the 157th Brigade Engineer's office.
10-9.1	Noted.
11-2	All required publications are now on hand or on order.
12-2.1	Same as above.
13-2.1	Same as above.
14-2.1	Same as above.
15-4.1	Radon detectors were mailed to the Environmental Office, Fort Indiantown Gap, PA. Delays were due to a back log at that office.
16-2.1	Commander's Guide to Environmental Quality and Protection is on hand in the motor pool office.
17-2.1	Required OSHA regulations are on requisition.

AFRC-IBPA-315-XO
SUBJECT: Response to Environmental Compliance Assessment Report

17-19.1 This facility stores no more than one (1) 55 gal. drum of oil and one (1) 55 gal. drum of anti-freeze to add as needed. Paint CONEX is being inventoried; flammables are being turned-in to DRMO.

17-20.1 An appropriate fire extinguisher is readily available to this site.

2. POCs are CPT Kose or SSG Edwards, Comm (215) 848-9101.

FOR THE COMMANDER:

Encl
as

ALEXANDER K. KOSE
CPT, ARMOR
Facility Manager

FINDINGS

1. Finding # 4-18.1, Hazardous Waste - The commander should also develop a hazardous waste inventory of all hazardous materials that could become hazardous waste. It is recommended that this inventory include description of waste, its NSN, hazardous characteristics, and potential hazard.

2. Finding # 4.28.1,"Emergency Information - In addition to your response concerning this finding, the Facility Manager must develop an information sheet with name and telephone number of emergency coordinator, fire department and a map to the Motor Pool with the location of fire extinquishers marked. Alert site personnel of the existence and location of this information.

3. Finding # 6,14.1, UST Feeding The Boiler - This finding was not addressed. The facility manager should submit work order to monitor the UST for the possibility of leaks and document.

4. Finding # 10.2.1, Environmental Publications - The response to this finding should address the publication and not the historical site.

5. Finding # 10.9.1, Historical Preservation - This office has submitted a placed the requested finding on the 1383 report. local project # XA-000223. (Encl #1)

Encl 1

RCS DD-P&L(A) 1383 REPORT PROJECT EXHIBIT

MACOM: RESERV BSB: Record Status: ACTIVE
SUBCOM: ASG: Date Entered: 02/25/93
Date Revised: 03/02/93
Date Discontinued:

Facility: WILLOW GROVE USARC HQ City: WILLOW GROVE Address: JOHN WURTS MEMORIAL CTR
FFID: PA-210412N77 Owner Type: GOGO State: PA Country: USA EPA: 03 Contact: ROBERT HANNEMAN
Support Installation: FORT INDIANTOWN GAP Zip: 190905110 Telephone: 215-443-1643
Facility Type: RESERVE CENTER HEADQARESERV
Project Number: RESV93S026 Operable Unit: Pillar: CNS
Local Project Number: XA-000223 Local Project ID Type: 4283 Year Funding Required: 1994
Project Name: CULTURAL-HISTORIC SURVEYS Fiscal Year Completed:

Project Assessment: H Class: 3 Law/Reg: HPA Project Status: PLANNING PHASE
Compliance Status: ESDL Pollution Category: HIST Must Fund: N
Program Area: CULT RES MACOM Priority:
Initiation Reason: ECAS Instn Priority: Discontinue Reason:

Plan/Design Scheduled Completion: / Work/Const Scheduled Completion: /
Work/Constr Scheduled Start: / Final Compliance Required: 09/94

Fund Type: Operations and Maintenance Army Reserve (OMAR) Total Est. Cost: 60

AMS Code	FY	Required	Prg/Bdgt	Obligated	AMS Code	FY	Required	Prg/Bdgt	Obligated	AMS Code	FY	Required	Prg/Bdgt	Obligated
515956.A0	1994	30	30	0										
515956.A0	1995	30	30	0										

Narrative:
HIST; CFR 36 60.9, 16 USC 470.470W-6, 32 CFR 229.4, AR 420-40. PROJECT PROVIDES SURVEY AND REPORT FOR HISTORICAL AND CULTURAL POSSIBILITIES AT THE FACILITIES SUPPORTED BY 79TH ARCOM, SUPPORTED BY FORT INDIANTOWN GAP. REQUIRMENT FOR RENOVATION/CONSTRUCTION

FOR OFFICIAL USE ONLY

Environmental Compliance Assessment for Army Reserves

Germantown Veteran's Memorial USARC

Environmental Compliance Assessment Report

Submitted to:

U.S. Army Corps of Engineers
Baltimore District
CENAB-PL-E
Baltimore, Maryland 21203-1715

Contract DACA31-93-D-0045
Delivery Order No. 002

Submitted by:

Geophex, Ltd.
605 Mercury Street
Raleigh, North Carolina 27603
(919) 839-8515

Geophex Job Number 356
September 1994

FOR OFFICIAL USE ONLY

ENVIRONMENTAL COMPLIANCE ASSESSMENT SYSTEM OF ARMY RESERVES

GERMANTOWN VETERAN'S MEMORIAL USAR CENTER

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CHAPTER 1

EXECUTIVE SUMMARY

1.1 Environmental Compliance Assessment of Army Reserves (ECAAR) Background

Geophex, Ltd., of Raleigh, North Carolina, was tasked by the U.S. Army Corps of Engineers' Baltimore District to conduct an ECAAR of the Germantown Veteran's Memorial U.S. Army Reserve Center in Philadelphia, Pennsylvania. The evaluation was conducted on September 9 - 10, 1993.

ECAAR is a proactive program during which the 17 environmental protocols listed in Table 1-1 are reviewed, and the resources necessary to bring Germantown Veteran's Memorial USARC into compliance are identified. During this ECAAR evaluation, we reviewed installation operations and activities and provided a "snapshot in time" of the installation's compliance posture. This evaluation does not guarantee that an inspection from a regulatory agency will not reveal additional compliance deficiencies. Instead, it identifies weak areas and recommends a means to correct them without the time constraints that may be imposed as a result of a regulatory agency inspection.

1.2 Summary of Findings

The Geophex ECAAR team encountered no findings posing an imminent threat to human health or the environment. Significant findings included:

- a truck that was being used as a hazardous waste accumulation point but was not being properly operated as such (i.e., no weekly inspections, and no accumulation start date marked on containers),
- lack of hazardous waste determination documentation,
- transformers whose PCB content was unknown and which were not appropriately marked, and
- the unpermitted discharge of stormwater that is contaminated with POL products that have been discharged around the Oil Shed and Paint Storage Building.

Several positive findings were noted during the evaluation. Such findings related to the termination of the discharge of contaminated wash waters from a vehicle wash rack, the use of spill containment for POL product storage, and the protection of health of facility personnel by requesting the installation of potable water purification equipment.

A summary of the frequency and type of findings occurring under each Protocol is presented in Table 1-1.

Table 1-1. Number of Findings in Each ECAAR Protocol

Section	ECAS Protocol	Regulatory Findings			Management Practice Findings			Total
		I	II	HS	POS	III	HS	
1	Clean Air Act	0	0	0	0	1	0	1
2	Clean Water Act	0	0	0	2	2	0	4
3	Safe Drinking Water Act	0	0	0	1	1	0	2
4	RCRA - Subtitle C	4	0	0	0	2	0	6
5	RCRA - Subtitle D	0	1	0	0	1	0	2
6	RCRA - Subtitle I	0	0	0	0	5	0	5
7	CERCLA/SARA	0	0	0	0	1	0	1
8	TSCA	1	0	0	0	1	0	2
9	FIFRA	0	0	0	0	1	0	1
10	NHPA	0	0	0	0	2	0	2
11	Natural Resource Management	0	0	0	0	1	0	1
12	NEPA	0	0	0	0	1	0	1
13	Asbestos Management Program	0	0	0	0	1	0	1
14	Noise Abatement	0	0	0	0	1	0	1
15	Radon Program	0	0	0	0	1	0	1
16	Environ. Program Management	0	0	0	0	1	0	1
17	Hazardous Materials Management	0	0	2	3	0	1	6
Total Findings		**5**	**1**	**2**	**6**	**23**	**1**	**38**

Class I. Observed noncompliance with an existing Federal or State regulation, local ordinance, compliance agreement, consent order, or operating or discharge permit.

Class II. Potential noncompliance with a future deadline imposed by a Federal or State regulation, local ordinance, compliance agreement, consent order, or operating or discharge permit.

Class III. Observed noncompliance with Army Regulations or DoD Directives.

HS. Observed noncompliance with Occupational Health and Safety Administration or Department of Transportation regulatory requirements and National Fire Protection Association guidelines.

POS. Positive finding.

CHAPTER 2

BACKGROUND AND SCOPE

2.1 Environmental Compliance Assessment Background

In 1985, the Department of the Army issued a policy statement that initiated the Army Environmental Auditing Program. Initially, responsibility for implementing and managing such a program was designated to each MACOM. Because the program was not centrally managed, three different environmental auditing systems had developed by the end of the 1980s yet no minimum standard reporting requirements to identify regulatory compliance deficiencies had been established. In order to standardize the program for evaluating environmental compliance, the Environmental Compliance Assessment System (ECAS) was developed. Based on the ECAS, the Environmental Compliance Assessment for Army Reserves (ECAAR) was later developed.

Implementing the ECAAR involves evaluating compliance in the following major environmental program areas:

- Clean Air Act, for which air pollution sources, and monitoring and control devices are examined;
- Clean Water Act, for which discharges from sources of industrial wastewater and stormwater are evaluated;
- Safe Drinking Water Act, for which operations that involve the supply of water for human consumption are studied;
- Resource Conservation and Recovery Act, for which hazardous waste, solid waste, and underground storage tank management activities are assessed;
- Comprehensive Environmental Response, Compensation, and Liability Act, for which activities associated with the remediation of contaminated sites are evaluated;
- Toxic Substances Control Act, for which PCB management activities are examined;
- Federal Insecticide, Fungicide, and Rodenticide Act, for which operations involving the use, storage, or handling of pesticides are probed;
- National Historic Preservation Act, for which the management of historical and cultural resources is studied;
- Endangered Species Act, for which compliance with rules for the protection and preservation of threatened and endangered species is assessed;

- National Environmental Policy Act, for which the evaluation of environmental impact in the decision making process for actions occurring on the installation is reviewed; and

- radon identification and quantification, asbestos and noise abatement, and hazardous materials management.

2.2 Goal of the Environmental Compliance Assessment

The Judge Advocate General of the Army has stated that each Facility Commander is responsible for his installation's compliance with all Federal, State, and local environmental requirements. It is, therefore, the goal of this ECAAR evaluation to assist the U.S. Army Reserve Center's 157th SIB (M) Brigade attain and sustain compliance with all environmental laws and regulations that apply to its Germantown Veteran's Memorial facility. This goal is achieved by identifying for the Facility Manager regulatory compliance deficiencies and corrective actions to allow for the execution of appropriate, immediate actions to remediate deficiencies and achieve compliance.

2.3 Brief Description of the Germantown Veteran's Memorial USAR Center

The Germantown Veteran's Memorial (Germantown) facility consists of two buildings on a 5-acre lot. Originally constructed in 1959, the main building is a two story structure dedicated to administrative support, training, and assembly. The second building is a single story Organizational Maintenance Shop with four maintenance bays. Units assigned to Germantown include HHC-1-315th Infantry, B-1-315th Infantry, and C-1-315th Infantry.

The real property holder and supporting installation is Fort Indiantown Gap. The BASOPS ARCOM is the 79th ARCOM at Naval Air Station, Willow Grove, Pennsylvania. The using MUSARC is the 157th SIB (M).

Germantown's Facility Manager was the primary installation contact for this ECAAR evaluation. Environmental programs are managed on-site by an officer in the Army Reserves; however, management of the environmental mission is a shared responsibility led by the 79th ARCOM Commander.

2.4 Summary of the ECAAR Evaluation Process

Compliance at the facility with Federal requirements was assessed against the March 1993 version of the Environmental Compliance Assessment for Army Reserves Manual published by USACERL. The ECAAR team used a Pennsylvania ECAAR protocol supplement dated September 1993 to evaluate compliance of the facility against Commonwealth of Pennsylvania regulatory requirements.

The assessment procedure consisted of interviewing the Facility Commander, a representative from 79th ARCOM Headquarters, and personnel associated with the Motor Pool, Supply,

Medical Dispensary, training, weapons maintenance, hazardous materials storage, and waste disposal. We also reviewed all available documentation maintained by the facility, including underground storage tank registration and removal records, material safety data sheets, emergency response plan, current and past work orders pertaining to environmental projects, and correspondence.

The ECAAR was conducted on September 9 - 10, 1993, and was performed by Mr. Douglas Plautz and Mr. Geoffrey Kay. Since 1987, Mr. Plautz has conducted both internal and external ECAAR evaluations at Army Reserve Centers, ECAS evaluations at active Army Installations, and Environmental Compliance Assessment Management Program (ECAMP) assessments at U.S. Air Force and Air National Guard Installations and throughout the United States.

Although proficient in all 17 protocol areas, Mr. Plautz has specialized expertise with the regulatory requirements of RCRA (hazardous waste, solid waste, and underground storage tank management), CERCLA, CAA, CWA, SARA Title III (EPCRA), and FIFRA. His OSHA experience has also familiarized him with the requirements of the Hazard Communication Standard, Process Safety Management Standard, NFPA standards, and worker safety compliance requirements.

Mr. Geoffrey Kay has more than 20 years experience in environmental planning, regulatory compliance, and natural resources management. He developed the U.S. Coast Guard's ECAMP program and has conducted ECAMP assessments of Coast Guard and Air National Guard installations throughout the United States. Mr. Kay has also conducted ECAAR evaluations of Army Reserve Centers and ECAS assessments of active Army installations. His areas of expertise include compliance with NEPA, the Clean Air Act (including its air pollution discharge, air toxics, asbestos, and radon requirements), National Historical Preservation Act and cultural resource requirements, Endangered Species Act and natural resource management, Clean Water Act, and Safe Drinking Water Act.

CHAPTER 3

REGULATORY COMPLIANCE FINDINGS

The primary goal of the ECAAR is to identify extant Federal, State, local, DoD, and Army regulatory compliance deficiencies for the Facility Commander and provide recommendations for correcting each deficiency. Each deficiency, or *finding*, is categorized as either a Class I, Class II, Class III, or Health/Safety finding, each of which is defined below.

- Class I findings address noncompliance with an existing environmental Federal or State regulation, local ordinance, compliance agreement, consent order, or operating or discharge permit.

- Class II findings address noncompliance with a future deadline imposed by an environmental regulation, compliance agreement, or consent order. Like Class I findings, these may stem from Federal, State, or local requirements.

- Class III findings relate to management practices and compliance (or lack of compliance) with Army Regulations and DoD Directives. Unlike Class I and Class II findings, Class III findings can be either positive or negative.

- Health/Safety findings relate to noncompliance with Occupational Health and Safety Administration or Department of Transportation regulatory requirements as well as National Fire Protection Association guidelines.

This chapter presents all Class I and Class II findings. As presented in Table 1-1, our ECAAR team found five Class I findings and one Class II finding for the Germantown Veteran's Memorial U.S. Army Reserve Center.

3.1 Clean Air Act

There are no Class I or Class II findings pertaining to this Protocol.

3.2 Clean Water Act

There are no Class I or Class II findings pertaining to this Protocol.

3.3 Safe Drinking Water Act

There are no Class I or Class II findings pertaining to this Protocol.

3.4 Subtitle C of RCRA (Hazardous Waste Management)

During the evaluation, our ECAAR team examined a truck into which several hundred pounds of waste materials (including hazardous wastes) had been placed. The hazardous waste management findings pertain to the failure to adequately maintain this area as a hazardous waste accumulation point.

4-18.1 I STATE FINDING
MANUAL QUESTION NUMBER: 04-018 FINDING ID: GER-10
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The facility has accumulated several hundred pounds of solid waste awaiting disposal by a DRMO contractor. Some of the wastes include expiration-dated enamel paints and waste organic solvents. No determination of which wastes are hazardous wastes has been conducted or documented.

CRITERIA: Generators are required to make a determination of which solid wastes are hazardous wastes and maintain such documentation for no less than three years. (40 CFR 262.40(c) and 262.11)

FINDING COMMENTS: A documented determination could be an appendix to the hazardous waste management plan and should be developed prior to the development of the plan.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Develop a hazardous waste inventory/compendium of all hazardous materials that could become hazardous wastes, such as mineral spirits, enamel paints, and aerosol paint cans. It is recommended that this inventory include a description of the waste, its NSN, hazard characteristics, and potential EPA Hazard Code(s).

STATUS OF CORRECTION: Two work orders were submitted in February 1993 for the testing and disposal of hazardous wastes.

4-42.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 04-042 FINDING ID: GER-12
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: Truck holding Hazardous Waste for pickup by DRMO.
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: There was no start accumulation date on containers of hazardous waste that were awaiting off-site transportation.

CRITERIA: Hazardous waste generators may accumulate hazardous waste on-site for 90 days or less without a permit or interim status provided certain conditions are met, including recording the accumulation start date on each container. (40 CFR 262.34(a)(2))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Ensure that each container (e.g., 55-gallon drum or 1-gallon pail) of hazardous waste in the truck is marked with the waste accumulation start date.

STATUS OF CORRECTION: This action has been initiated.

4-28.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 04-028 FINDING ID: GER-13
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: Telephone in the Motor Pool
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The following emergency information was not posted next to the telephone nearest the hazardous waste accumulation point (i.e., the truck in which the hazardous waste was placed): name and telephone number of the facility's emergency coordinator, location of fire extinguishers and spill control materials, and telephone number of the fire department.

CRITERIA: Small quantity generators are required to have an emergency coordinator and post emergency response information next to the telephone. (40 CFR 262.34(d)(5))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Develop an information sheet with the name and telephone number of the emergency coordinator, the telephone number of the fire department, and a map of the Motor Pool with the location of fire extinguishers marked. Put this in a plastic sleeve and hang it near a telephone in the Motor Pool. Furthermore, alert site personnel of the existence and location of this information.

STATUS OF CORRECTION: No Action Yet.

4-58.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 04-058 FINDING ID: GER-11
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: Hazardous waste is being accumulated at a site that meets the requirements of an accumulation point; however, no weekly inspections are being conducted and no inspection documentation is being maintained.

CRITERIA: Hazardous waste generators must conduct weekly inspections of container storage areas. (40 CFR 262.34(a)(1)(i) and 265.176)

FINDING COMMENTS: Although USARC site personnel believed the facility to be a conditionally exempt small quantity generator, the volume of waste declared hazardous and being accumulated at the time of the ECAS team visit led us to conclude that the facility is currently a small quantity generator. Because Federal regulations governing small quantity generators in 40 CFR 262.34(d) are more stringent than Pennsylvania regulations in 25 Pa. Code 261.5, the Federal regulations supersede the Commonwealth of Pennsylvania regulatory requirements.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Until a contractor comes to remove the hazardous waste, conduct weekly inspections of the site at which the hazardous waste is being accumulated (i.e., the truck on which the waste has been placed).

STATUS OF CORRECTION: No Action Yet.

3.5 Subtitle D of RCRA (Solid Waste Management)

The Commonwealth of Pennsylvania has implemented a law requiring all municipalities to mandate recycling under certain conditions. In the future, the City of Philadelphia will impose recycling requirements on the Germantown Veteran's Memorial USAR Center. The Class II solid waste management finding relates to failure to develop a plan or mechanism to begin recycling when such a requirement becomes mandatory.

5-4.1 II STATE FINDING
MANUAL QUESTION NUMBER: 05-004 FINDING ID: GER-15
FINDING CATEGORY: CLASS II
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: A solid waste recycling program has not been implemented by the facility.

CRITERIA: Army facilities are required to participate in any state or local recycling programs and to reduce the volume of solid waste materials at the source whenever practical. (Pennsylvania Act 101, DoD 4165.60, para. V(a), V(c), and V(h), and AR 200-1, para. 6-14a)

FINDING COMMENTS: Pennsylvania Act 101 requires all municipalities with a population >5,000 and a population density >300 persons per square mile to implement mandatory recycling for aluminum, high grade office paper, and corrugated cardboard. The City of Philadelphia has not implemented a program and there is currently no enforcement of Act 101.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Obtain commercially available collection containers for aluminum cans, desk-top receptacles for high-grade office paper (along with a dedicated accumulation container for paper) and collection containers for corrugated cardboard.

STATUS OF CORRECTION: Complete

3.6 Subtitle I of RCRA (Underground Storage Tank Management)

There are no Class I or Class II findings pertaining to this Protocol.

3.7 Comprehensive Environmental Response, Compensation, and Liability Act; and Superfund Amendments and Reauthorization Act

There are no Class I or Class II findings pertaining to this Protocol.

3.8 Toxic Substances Control Act

The Class I finding under the TSCA Protocol pertains to the inadequate marking of PCB transformers.

8-4.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 08-004 FINDING ID: GER-21
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No transformers have been marked with the appropriate M_L mark.

CRITERIA: Certain equipment that contains PCBs must be marked with an M_L marking. (40 CFR 761.40 and 761.45)

FINDING COMMENTS: According to EPA's "Assumption Rule," (which was authored by EPA's Chemical Regulation Branch as an interpretation to definitions presented in 40 CFR 761.3), if there is no information to indicate the type of dielectric in a transformer, it must be assumed to be a PCB transformer. According to 40 CFR 761.40(c), all PCB transformers must be marked with the M_L mark as of January 1, 1979. The three 42,000-volt transformers are scheduled to be taken out of service and removed on 9/11/93. Mr. Butch Rissinger of FIG stated that the transformers will be tested at that time to quantify PCB content.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Contact transformer manufacturer and request documentation on the PCB content of the transformers, or test transformer oil to determine PCB content.

STATUS OF CORRECTION: Implementation of Corrective Action.

3.9 Federal Insecticide, Fungicide, and Rodenticide Act

There are no Class I or Class II findings pertaining to this Protocol.

3.10 National Historic Preservation Act and Cultural Resource Management

There are no Class I or Class II findings pertaining to this Protocol.

3.11 Endangered Species Act and Natural Resource Management

There are no Class I or Class II findings pertaining to this Protocol.

3.12 National Environmental Policy Act

There are no Class I or Class II findings pertaining to this Protocol.

3.13 Asbestos Management Program

There are no Class I or Class II findings pertaining to this Protocol.

3.14 Noise Abatement

There are no Class I or Class II findings pertaining to this Protocol.

3.15 Radon Program

There are no Class I or Class II findings pertaining to this Protocol.

3.16 Environmental Program Management

There are no Class I or Class II findings pertaining to this Protocol.

3.17 Hazardous Materials Management

There are no Class I or Class II findings pertaining to this Protocol.

CHAPTER 4

MANAGEMENT PRACTICES AND ARMY/DOD REGULATION FINDINGS

As described in Chapter 3, ECAAR has been implemented to help a Facility Manager identify Federal, State, local, DoD, and Army regulatory compliance deficiencies. Furthermore, recommendations for correcting each deficiency are developed. Each compliance deficiency, or *finding*, is categorized as either a Class I, Class II, Class III, or Health/Safety finding.

This chapter focuses on Class III and Health/Safety findings. Class III findings are generated as a result of both good and bad management practices as well as noncompliance with Army Regulations and DoD Directives. Health/Safety findings relate to noncompliance with Occupational Health and Safety Administration or Department of Transportation regulatory requirements as well as National Fire Protection Association guidelines.

4.1 Clean Air Act

The Clean Air Act Class III finding relates to the lack of regulatory reference material maintained by the facility.

1-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 01-002 FINDING ID: GER-01
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal and State regulations, DoD Directives, Army Regulations, and guidance documents pertaining to compliance with the Clean Air Act.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents on air emissions should be maintained at the facility. (GMP)

FINDING COMMENTS: The Clean Air Act currently does not apply to this facility.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: A work order was submitted in February 1993 to obtain the appropriate documentation.

4.2 Clean Water Act

One negative Clean Water Act Class III finding relates to the lack of regulatory reference material maintained by the facility. Another pertains to stormwater that is contaminated with POL products that have been discharged around the Oil Shed and Paint Storage Building.

Two positive findings were observed: one relates to the termination of the discharge of contaminated wash waters from a vehicle wash rack; the other pertains to the use of spill containment for POL product storage.

2-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 02-002 FINDING ID: GER-02
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal and State regulations, DoD Directives, Army Regulations, and guidance documents pertaining to the Clean Water Act.

CRITERIA: Copies of all relevant Federal regulations, DoD directives, Army Regulations, and guidance documents pertaining to Clean Water Act compliance should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

2-15.1 III FEDERAL FINDING
MANUAL QUESTION NUMBER: 02-015 FINDING ID: GER-03
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: OIL SHED
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The asphalt surface surrounding the Oil Shed and adjacent Paint Storage Building is heavily stained due to past POL releases from within and around Oil Shed. After a rainstorm that occurred while our ECAS team was on-site we observed an oily sheen atop a pool of water that had collected immediately in front of the Oil Shed.

CRITERIA: Even where not covered by NPDES permit, stormwater discharged on the facility should be uncontaminated and periodic surveillance of these discharges should be completed. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Replace Oil Shed and Paint Storage Building with new structures that are fitted with spill containment. Additionally, evaluate work practices that lead to the release of oil and modify work practices to eliminate the release of POL products.

STATUS OF CORRECTION: A work order was submitted in March 1992 to procure storage cabinets equipped with spill containment.

2-5.1 III STATE FINDING
MANUAL QUESTION NUMBER: 02-005 FINDING ID: GER-04
FINDING CATEGORY: CLASS III
FINDING TYPE: Positive EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility has closed its vehicle wash rack and no longer is engaged in outdoor washing of vehicles in order to eliminate the escape of washwater into nearby surface waters.

CRITERIA: Facilities with point source discharges and/or treatment works treating domestic sewage are required to have a Federal NPDES permit if located in states without an USEPA approved NPDES permit program. (40 CFR 122.1(b)(4))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Not Applicable.

STATUS OF CORRECTION: Not Applicable.

2-55.1 III STATE FINDING
MANUAL QUESTION NUMBER: 02-055 FINDING ID: GER-05
FINDING CATEGORY: CLASS III
FINDING TYPE: Positive EXISTING NOV: NO
LOCATION: MOTOR POOL
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: Although not subject to the Clean Water Act's SPCC requirements, the facility has obtained and uses a polyethylene spill containment pallet to provide secondary containment for the POL products stored in 55 gallon drums.

CRITERIA: For facilities subject to the Spill Prevention, Control and Countermeasures requirements of the Clean Water Act, appropriate containment diversionary structures, and cleanup equipment to prevent discharged petroleum products from reaching navigable water course is required to be readily available on the facility. (40 CFR 112.7(c), and AR 200-1, para. 8-2)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Not Applicable.

STATUS OF CORRECTION: Not Applicable.

4.3 Safe Drinking Water Act

One negative Safe Drinking Water Act Class III finding relates to the lack of regulatory reference material maintained by the facility. One positive Class III finding involves protecting the health of facility personnel by requesting the installation of potable water purification equipment.

3-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 03-002 FINDING ID: GER-06
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal and State regulations, DoD Directives, Army Regulations, and guidance documents pertaining to the Safe Drinking Water Act.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations and guidance documents pertaining to the Safe Drinking Water Act should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

3-3.1 III STATE FINDING
MANUAL QUESTION NUMBER: 03-003 FINDING ID: GER-07
FINDING CATEGORY: CLASS III
FINDING TYPE: Positive EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: Major Monaghan has monitored data provided by the public water supplier (i.e., City of Philadelphia) and has determined that the supplied water does not meet all MCLs; consequently, he has requested the purchase and installation of water purification equipment to protect the health of facility personnel.

CRITERIA: Facilities are required to comply with all applicable state and local regulations. (AR 200-1; para 1-39a(3)).

FINDING COMMENTS: Although the public water supplier is responsible for providing water that meets all MCLs, the facility has an implicit responsibility to protect the health and safety of its personnel where it is known that a health risk exists. USARC's Germantown installation has recognized this responsibility and has acted in the best interest of facility personnel.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S):

STATUS OF CORRECTION:

4.4 Subtitle C of RCRA (Hazardous Waste Management)

One negative RCRA Subtitle C Class III finding relates to the lack of regulatory reference material maintained by the facility. An additional finding resulted from the lack of development of a hazardous waste management plan.

4-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 04-002 FINDING ID: GER-08
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal and State regulations, DoD Directives, Army Regulations, and guidance documents pertaining to compliance with Subtitle C of RCRA (hazardous waste management).

CRITERIA: Copies of all relevant Federal and State regulations, DoD Directives, Army Regulations and guidance documents pertaining to hazardous waste management should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4-6.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 04-006 FINDING ID: GER-09
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The facility has no written hazardous waste management plan.

CRITERIA: Each facility will have a written hazardous waste management plan. (AR 200-1, para. 6-4b)

FINDING COMMENTS: This facility does not routinely generate hazardous waste, which makes it more imperative to develop a hazardous waste management plan. As hazardous wastes are generated, such a document will provide facility personnel with an understanding of the proper way to accumulate, prepare for shipment, and manifest shipments of hazardous waste.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Prepare a hazardous waste management plan that delineates all responsibilities to ensure compliance with RCRA regulations.

STATUS OF CORRECTION: No Action Yet.

4.5 Subtitle D of RCRA (Solid Waste Management)

The RCRA Subtitle D Class III finding relates to the lack of regulatory reference material maintained by the facility.

5-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 05-002 FINDING ID: GER-14
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal and State regulations, DoD Directives, Army Regulations, and guidance documents pertaining to compliance with Subtitle D of RCRA (solid waste management).

CRITERIA: Copies of all relevant Federal regulations, DoD Directives and Army Regulations pertaining to solid waste management should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4.6 Subtitle I of RCRA (Underground Storage Tank Management)

One negative RCRA Subtitle I Class III finding relates to the lack of regulatory reference material maintained by the facility. Two others resulted from the lack of development of plans pertaining to POL products and UST management. Another two negative findings pertain to the lack of UST documentation.

6-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 06-002 FINDING ID: GER-16
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal and State regulations, DoD Directives, Army Regulations, and guidance documents pertaining to compliance with Subtitle I of RCRA (underground storage tank management).

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations and guidance documents on underground storage tank management should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

6-4.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 06-004 FINDING ID: GER-38
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The facility does not have a plan for the management of reclaimed, recoverable, and waste petroleum products.

CRITERIA: Facilities should have a plan for the management of reclaimed, recoverable, and waste liquid petroleum products. (GMP)

FINDING COMMENTS: This facility generates negligible recoverable and waste POL products; however, in the event that such products would be generated, this plan would provide guidance for the proper management of these materials.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Develop a Management of Recoverable and Waste Liquid Petroleum Products Plan.

STATUS OF CORRECTION: A work order was submitted in February 1993 to develop a Recovered Liquid Waste Plan.

6-7.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 06-007 FINDING ID: GER-17
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: FUEL TANK OUTSIDE THE BOILER ROOM.
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: There is no UST Management Plan or other facility documentation to suggest that the one underground storage tank will be inspected annually.

CRITERIA: All organizational fuel tanks should be inspected annually. (GMP)

FINDING COMMENTS: There is currently one UST on-site: a 2,500-gallon No. 2 fuel oil tank. It is a double-wall fiberglass tank with interstitial monitoring and spill containment capability.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Establish a schedule for testing the underground storage tank annually.

STATUS OF CORRECTION: A work order was submitted in February 1993 for the annual testing and inspection of USTs. The work order also includes an UST management plan.

6-14.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 06-014 FINDING ID: GER-18
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: UST FEEDING THE BOILER
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No monthly monitoring of the 2,500-gallon UST is occurring.

CRITERIA: Army Regulations annul the Federal exemption for heating oil tanks; consequently, UST systems containing petroleum must meet specific release detection system requirements, including monitoring every 30 days. (AR 200-1, para. 5-7, 40 CFR 280.43)

FINDING COMMENTS: The tank is equipped with an interstitial monitoring device. This tank is not regulated under Federal or Pennsylvania regulations.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Learn to use interstitial monitoring device and maintain monthly leak detection documentation.

STATUS OF CORRECTION: A work order was submitted in February 1993 for the annual testing and inspection of USTs. The work order also includes an UST management plan and tank system monitoring.

6-27.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 06-027 FINDING ID: GER-19
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: UST FEEDING BOILER
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: There are no facility records to indicate that the new 2,500-gallon UST was installed by a certified installer.

CRITERIA: Army Regulations annul the Federal exemption for heating oil USTs; consequently, installation of new USTs must be done by a certified installer and according to standard practices. (AR 200-1, para. 5-7, 40 CFR 280.20(d) and 280.20(e))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Contact the company that installed the UST and obtain a copy of the tank installer's certification as well as a signed statement from the installer that the tank was installed according to standard installation practices.

STATUS OF CORRECTION: No Action Yet.

4.7 Comprehensive Environmental Response, Compensation, and Liability Act; and Superfund Amendments and Reauthorization Act

The CERCLA/SARA Class III finding relates to the lack of regulatory reference material maintained by the facility.

7-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 07-002 FINDING ID: GER-20
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal regulations pertaining to CERCLA and SARA.

CRITERIA: Copies of all relevant Federal regulations should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4.8 Toxic Substances Control Act

The TSCA Class III finding relates to the lack of regulatory reference material maintained by the facility.

8-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 08-002 FINDING ID: GER-22
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal regulations and guidance documents pertaining to compliance with the PCB provisions of the Toxic Substances Control Act.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents on the Toxic Substances Control Act should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4.9 Federal Insecticide, Fungicide, and Rodenticide Act

The FIFRA Class III finding relates to the lack of regulatory reference material maintained by the facility.

9-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 09-002 FINDING ID: GER-23
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal and State regulations, DoD Directives, Army Regulations, and guidance documents pertaining to compliance with the Federal Insecticide, Fungicide, and Rodenticide Act.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents pertaining to FIFRA should be maintained at the facility. (GMP)

FINDING COMMENTS: FIFRA currently does not apply to this facility.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4.10 National Historic Preservation Act and Cultural Resource Management

The NHPA Class III finding relates to the lack of regulatory reference material maintained by the facility. An additional negative finding resulted from the lack of documentation required by Army regulations.

10-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 10-002 FINDING ID: GER-24
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal and State regulations, DoD Directives, Army Regulations, and guidance documents pertaining to compliance with the National Historic Preservation Act and related cultural resource statutes.

CRITERIA: Copies of all relevant Federal regulations, Army Regulations and guidance documents pertaining to national historic preservation and cultural resource management should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

10-9.1 III FEDERAL FINDING
MANUAL QUESTION NUMBER: 10-009 FINDING ID: GER-25
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The facility has not requested a letter from the SHPO concurring that there are no properties on the site which are eligible for listing on the National Register of Historic Places.

CRITERIA: Facilities that do not have any properties eligible for listing on the National Register or that meet the criteria of the National Register are required to obtain a letter from the SHPO agreeing there are no significant historic properties. (AR 420-40, para. 2-1a)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Draft a letter to the State Historic Preservation Officer stating that USARC has determined that this site has no historic properties eligible for inclusion on the National Register of Historic Places and request SHPO concurrence on this determination.

STATUS OF CORRECTION: A work order was submitted in February 1993 to perform cultural historic surveys.

4.11 Endangered Species Act and Natural Resource Management

The Class III finding under this Protocol relates to the lack of regulatory reference material maintained by the facility.

11-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 11-002 FINDING ID: GER-26
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all DoD Directives, Army Regulations, and guidance documents pertaining to compliance with the Endangered Species Act and associated natural resource management requirements.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents pertaining to natural resource management (including the Endangered Species Act) should be maintained at the facility. (GMP)

FINDING COMMENTS: This protocol currently does not apply to this facility.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4.12 National Environmental Policy Act

The NEPA Class III finding relates to the lack of regulatory reference material maintained by the facility.

12-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 12-002 FINDING ID: GER-27
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal regulations pertaining to compliance with the National Environmental Policy Act.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents pertaining to NEPA should be maintained at the facility. (GMP)

FINDING COMMENTS: No current actions require NEPA documentation.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4.13 Asbestos Management Program

The asbestos Class III finding relates to the lack of regulatory reference material maintained by the facility.

13-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 13-002 FINDING ID: GER-28
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal regulations, Army Regulations, and guidance documents pertaining to asbestos management and abatement requirements.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents on asbestos management should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4.14 Noise Abatement

The noise abatement Class III finding relates to the lack of regulatory reference material maintained by the facility.

14-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 14-002 FINDING ID: GER-29
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant DoD Instructions, Army Regulations, and guidance documents pertaining to noise management.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents on noise management should be maintained at the facility. (GMP)

FINDING COMMENTS: Noise management requirements currently do not apply to the facility.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4.15 Radon Program

One radon-related Class III finding resulted from the delayed implementation of a radon detection program.

15-4.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 15-004 FINDING ID: GER-30
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: Radon measurements have not been completed.

CRITERIA: All Army Reserve facilities are required to perform radon measurement according to a prescribed prioritized schedule in order to identify Army Reserve structures with radon levels above 4 pCi/l with emphasis on identifying Priority 1 structures with levels greater than 20 pCi/l. (AR 200-1, para. 11-2a(3), 11-4)

FINDING COMMENTS: A memo dated 31 August 93 from the FIG Environmental Office requests all Facility Managers to locate, seal, and return the radon detectors placed at the facility during FY92. Germantown's radon detectors are in the process of being prepared to be returned.

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Return the radon detectors (which are present at several locations at the facility) to the Environmental Office at Ft. Indiantown Gap.

STATUS OF CORRECTION: No Action Yet.

4.16 Environmental Program Management

The Class III finding under this Protocol relates to the lack of regulatory reference material maintained by the facility.

16-2.1 III ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 16-002 FINDING ID: GER-31
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents pertaining to environmental quality and environmental program management.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents on environmental quality and environmental program management should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

4.17 Hazardous Materials Management

Three negative health/safety findings resulted from the ECAAR evaluation. One pertains to the lack of regulatory reference material maintained by the facility. Two others relate to the storage of flammable and combustible materials.

Three positive findings were noted. Two relate to the proactive measures the facility has taken with respect to emergency planning and response, while another relates to the successful waste minimization efforts occurring on-site.

17-2.1 HS ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 17-002 FINDING ID: GER-32
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: This facility does not maintain a copy of all relevant Federal and State regulations, DoD Instructions and Regulations, Army Regulations, and guidance documents pertaining to compliance with safety and health requirements.

CRITERIA: Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents pertaining to health and safety should be maintained at the facility. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): It is recommended that either this facility purchase/obtain copies of all relevant regulations, directives, and other related documents, or that the MACOM develop and distribute to all installations under their cognizance a compiled collection of this reference material.

STATUS OF CORRECTION: No Action Yet.

17-19.1 HS FEDERAL FINDING
MANUAL QUESTION NUMBER: 17-019 FINDING ID: GER-33
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: OIL SHED AND PAINT SHED
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The Oil Shed and Paint Shed do not meet the minimum standards for outdoor flammable and combustible materials storage.

CRITERIA: Flammable/combustible materials stored in outside buildings must meet certain storage and handling criteria, including a curb at least 6 inches in height to contain spills. (29 CFR 1910.106(d)(5)(vi) and DoD Directive 4145.19-R-1, paras. 5-404e and 5-404f)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Obtain a new storage building for flammables and combustibles.

STATUS OF CORRECTION: No Action Yet.

17-20.1 HS FEDERAL FINDING
MANUAL QUESTION NUMBER: 17-020 FINDING ID: GER-34
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: PAINT SHED AND OIL SHED
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: There is no fire extinguisher in close proximity to the Paint Shed and Oil Shed.

CRITERIA: Areas where flammable/combustibles are stored must meet certain fire protection standards, including the locating of at least one 12-B rated portable fire extinguisher outside of and within 10 feet of the door opening. (29 CFR 1910.106(6)(7) and DoD Directive 4145.19-R-1, para. 5-404g)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Obtain a fire extinguisher and mount near the Paint Shed or move the Paint Shed and Oil Shed closer to or adjacent to the Motor Pool.

STATUS OF CORRECTION: No Action Yet.

17-6.1 HS ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 17-006 FINDING ID: GER-35
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Positive EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The facility has an Installation Response Team (IRT) for responding to spills. The head of the IRT has completed the ALMC-HA training course for spill response and hazardous materials handling. He now leads a program to train all members of the IRT and maintains the facility's spill response plan.

CRITERIA: Personnel who manage, use, store, and/or ultimately dispose of hazardous materials must be trained in spill response actions. (AR 200-1, para. 5-1a(5))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Not Applicable.

STATUS OF CORRECTION: Not Applicable.

17-7.1 HS ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 17-007 FINDING ID: GER-36
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Positive EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: Activities in the Motor Pool are conducted so as to eliminate the generation of liquid waste, including hazardous waste.

CRITERIA: Hazardous material management is to be considered an integral part of the Army Hazardous Waste Minimization Program. (AR 200-1, 6-6b)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Not Applicable.

STATUS OF CORRECTION: Not Applicable.

17-8.1 HS ARMY/DoD FINDING
MANUAL QUESTION NUMBER: 17-008 FINDING ID: GER-37
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Positive EXISTING NOV: NO
LOCATION:
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: Approximately one year ago SSG Joseph Edwards contacted the Philadelphia Fire Department with jurisdiction over the facility and provided them with information about the hazardous chemicals kept on-site and their location.

CRITERIA: The facility should coordinate with the fire department concerning the types of hazardous chemicals used at the facility, the areas where they are used, what they are used for, and the quantities used in a given operation. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Not Applicable.

STATUS OF CORRECTION: Not Applicable.

APPENDIX A

COST ESTIMATES ADDENDUM

4-18.1 Class I Finding
Finding ID No. GER-10

Criteria
Generators are required to make a determination of which solid wastes are hazardous wastes and maintain such documentation for no less than three years.

Suggested Corrective Action
Develop a hazardous waste inventory: compendium of all hazardous materials that could become hazardous wastes, such as mineral spirits, enamel paints, and aerosol paint cans. It is recommended that this inventory include a description of the waste, its NSN, hazard characteristics, and potential EPA Hazard Code(s).

A local environmental A/E firm could prepare a hazardous waste inventory for the Germantown Center for approximately $2,000.

4-42.1 Class I Finding
Finding ID No. GER-12

Criteria
Generators of more than 100 kg but less than 1000 kg of hazardous waste per month may qualify as a small quantity generator which can accumulate waste on-site for up to 180 days without a permit if specific conditions are met, including marking each container with the date that hazardous waste accumulation began in the container.

Suggested Corrective Action
Ensure that containers of hazardous waste at an accumulation point are marked with the waste accumulation start date. In the future, operate the facility with only satellite accumulation points and the container dating requirement will not be applicable.

When hazardous waste is accumulated, a start date could be placed on a hazardous waste label and the label can be applied to the container. Such labels from a commercial source would cost approximately $20.00 for a roll of 100.

4-28.1 Class I Finding
Finding ID No. GER-13

Criteria
Small quantity generators are required to have an emergency coordinator and post emergency response information next to the telephone.

Suggested Corrective Action
Develop an information sheet with the name and telephone number of the emergency coordinator, the telephone number of the fire department, and a map of the Motor Pool with the location of fire extinguishers marked. Put this in a plastic sleeve and hang it near a telephone in the Motor Pool. This could be accomplished at no significant cost to the Germantown Center.

4-58.1 Class I Finding
Finding ID No. GER-11

Criteria
Small quantity generators of hazardous waste must conduct weekly inspections of container storage areas.

Suggested Corrective Action
Conduct weekly inspections of the site at which the hazardous waste is being accumulated. Because an inspection form can be developed by site personnel, this corrective action can be implemented at no significant cost to the Germantown Center.

When conducting an inspection of a hazardous waste accumulation point, it is recommended that the following information be recorded:

- name of the person conducting the inspection,
- date of the inspection,
- condition of the containers (e.g., are any rusting, bulging, or otherwise deteriorating; unlabeled; leaking?),
- condition of the accumulation point (e.g., does it appear to be deteriorating, are there any signs of releases from containers kept at the site), and
- condition of emergency response equipment (is equipment in working order: telephone, absorbent materials, fire extinguisher, etc.).

5-4.1 Class II State Finding
Finding ID No. GER-15

Criteria

Army facilities are required to participate in any state or local recycling programs and to reduce the volume of solid waste materials at the source whenever practical. Pennsylvania Act 101 requires all municipalities with a population >5,000 and a population density >300 persons per square mile to implement mandatory recycling for aluminum, high grade office paper, and corrugated cardboard.

Suggested Corrective Action

Obtain commercially available collection containers for aluminum cans, desk-top receptacles for high-grade office paper (along with a dedicated accumulation container for paper) and collection containers for corrugated cardboard.

Desktop recycling containers for paper (carton of 24 containers)	$50.00
55-gallon container for the central accumulation of high-grade office paper	100.00
One collection container for aluminum cans	150.00
Outdoor dumpster for the accumulation of cardboard	650.00
Total Cost	$ 950.00

If a recycling center was located in close proximity to the Germantown Center, facility personnel could be tasked to transport collected materials to the recycling center. Otherwise, a contract for the periodic removal of collected materials would have to be initiated.

8-4.1 Class I Finding
Finding ID No. GER-21

Criteria

Certain equipment that contains PCBs (i.e., the transformers) must be marked with an M_L marking.

Suggested Corrective Action

The two alternatives described below have been proposed prior to marking the transformers to verify the existence of PCBs in the transformer oil; only alternative "b" would have significant costs associated with it.

a. Contact transformer manufacturer and request documentation on the PCB content of the transformers.
b. Test transformer oil to determine PCB content.

Sampling of Dielectric Fluid and Analysis by Method ASTM No. D4059 (three transformers)	$ 860.00
PCB M_L Mark (roll of 100)	50.00
Total Cost	$ 910.00

1-2.1 Class III Finding
Finding ID No. GER-01

Note: This also applies to Finding ID Nos. GER-02, GER-06, GER-08, GER-14, GER-16, GER-20, GER-22, GER-23, GER-24, GER-26, GER-27, GER-28, GER-29, GER-31, and GER-32.

Criteria

Copies of all relevant Federal regulations, DoD Directives, Army Regulations, and guidance documents on air emissions should be maintained at the facility.

Suggested Corrective Actions

Two alternative have been proposed:

a. the Germantown Center should obtain copies of all relevant regulations, directives, and other related documents, or
b. the 79th ARCOM should develop and distribute to all installations under their cognizance a compiled collection of this reference material.

Only alternative "a" would have costs incurred by the Germantown Center. It is assumed that Army Regulations, DoD Directives, and other DoD-produced documents can be obtained at no cost to the facility.

Purchase copy of Code of Federal Regulations* (Titles 29, 40, and 49)	$ 500.00
Copies of the Pennsylvania Code of Regulations	no charge
Miscellaneous EPA guidance documents	400.00
Total Cost	$ 900.00

* This cost would be incurred on an annual basis to maintain current copies of Federal regulations.

2-15.1 Class III Finding
Finding ID No. GER-03

Criteria
Even where not covered by NPDES permit, stormwater discharged on the facility should be uncontaminated and periodic surveillance of these discharges should be completed.

Suggested Corrective Actions
Replace Oil Shed and Paint Storage Building with new structures that are fitted with spill containment. Additionally, evaluate work practices that lead to the release of oil and modify work practices to eliminate the release of POL products.

2 Outdoor Hazardous Materials Storage Sheds..... $ 8,000.00
Specifications: Weatherproof, painted-metal;
outside dimensions: 81"(w) x 89"(d) x 93"(h);
inside dimensions: 73"(w) x 73"(d) x 76"(h);
interior secondary containment system, 1,500 lbs net
weight each.

4-6.1 Class III Finding
Finding ID No. GER-09

Criteria
Each facility will have a written hazardous waste management plan.

Suggested Corrective Action
Prepare a hazardous waste management plan.

A local environmental A/E firm could prepare a hazardous waste management plan for the Germantown Center for approximately $4,000. This would include the hazardous waste inventory referenced above in 4-18.1.

6-4.1 Class III Finding
Finding ID No. GER-38

Criteria
Each facility should have a plan for the management of reclaimed, recoverable, and waste liquid petroleum products.

Suggested Corrective Action
Develop a plan for the management of reclaimed, recoverable, and waste liquid petroleum products.

A local environmental consultant could prepare such a plan for the Germantown Center for approximately $3,000. This could not be initiated, however, until a verification was made that the material safety data sheets for all POL products used at the facility were on-site.

6-7.1 Class III Finding
Finding ID No. GER-17

Criteria
All organizational fuel tanks should be inspected (tested) annually.

Suggested Corrective Action
Establish a schedule for testing the underground storage tank annually. Three types of tests are currently available for conducting tank tightness testing: volumetric testing, halon vapor analysis, and acoustical testing.

Volumetric Test	$ 1,000.00
Halon Vapor ("Tracer") Test	1,400.00
Acoustical Test	500.00

A volumetric test requires the tank to be completely full of product at the time of the test and out of use for at least 24 hours prior to the start of the test. If the tank is found to be leaking, the result of this type of test will be a leak rate.

A halon vapor test requires a tank to be at least 20% full. The result of this type of test will be an indication of *pass* or *fail*.

For an acoustical test, the tank must be at least 60% full and have less than one-half inch of water in the tank. The result of this type of test will be an indication of *pass* or *fail*.

6-14.1 Class III Finding
Finding ID No. GER-18

Criteria
Army Regulations annul the Federal exemption for heating oil tanks; consequently, UST systems containing petroleum must meet specific release detection system requirements, including monitoring every 30 days.

Suggested Corrective Action
Since the underground tank is equipped with an interstitial monitoring, it should be used to document monthly leak detection monitoring. This can be done with no significant costs incurred by the Germantown Center.

6-27.1 Class III Finding
Finding ID No. GER-19

Criteria
Army Regulations annul the Federal exemption for heating oil USTs; consequently, installation of new USTs must be done by a certified installer and according to standard practices.

Suggested Corrective Action
Contact the company that installed the UST and obtain a copy of the tank installer's certification as well as a signed statement from the installer that the tank was installed according to standard installation practices. This can be accomplished with no significant costs incurred by the Germantown Center.

10-9.1 Class III Finding
Finding ID No. GER-25

Criteria
Facilities that do not have any properties eligible for listing on the National Register or that meet the criteria of the National Register are required to obtain a letter from the SHPO agreeing there are no significant historic properties.

Suggested Corrective Action
Draft a letter to the State Historic Preservation Officer stating that USARC has determined that this site has no historic properties eligible for inclusion on the National Register of Historic Places and request SHPO concurrence on this determination.

This can be done at no significant cost incurred by the Germantown Center.

15-4.1 Class III Finding
Finding ID No. GER-30

Criteria

All Army Reserve facilities are required to perform radon measurement according to a prescribed prioritized schedule in order to identify Army Reserve structures with radon levels above 4 pCi/l with emphasis on identifying Priority 1 structures with levels greater than 20 pCi/l.

Suggested Corrective Action

Return the radon detectors (which are present at several locations at the facility) to the Environmental Office at Ft. Indiantown Gap. This can be accomplished with no significant costs incurred by the Germantown Center.

17-19.1 Health/Safety Finding
Finding ID No. GER-33

Criteria
Flammable/combustible materials stored in outside buildings must meet certain storage and handling criteria, including a curb at least 6 inches in height to contain spills.

Suggested Corrective Action
Obtain a new storage building for flammables and combustibles (refer to 2-15.1 in this section).

2 Outdoor Hazardous Materials Storage Sheds..... $ 8,000.00
Specifications: Weatherproof, painted-metal;
outside dimensions: 81"(w) x 89"(d) x 93"(h);
inside dimensions: 73"(w) x 73"(d) x 76"(h);
interior secondary containment system, 1,500 lbs net
weight each.

17-20.1 Health/Safety Finding
Finding ID No. GER-34

Criteria
Areas where flammable/combustibles are stored must meet certain fire protection standards, including the locating of at least one 12-B rated portable fire extinguisher outside of and within 10 feet of the door opening.

Suggested Corrective Action
Two correctives actions have been proposed for this finding. Of the two listed below, only alternative "a" represents expending funds to implement the alternative.

a. Obtain a fire extinguisher and mount near the Paint Shed.
b. Move the Paint Shed and Oil Shed closer to or adjacent to the Motor Pool.

2 Fire Extinguishers ..... $ 180.00
Specifications: 3A:40B:C dry chemical extinguishers,
exterior wall mount cabinet with signage, installed by
facility personnel.

APPENDIX B

GLOSSARY OF ACRONYMS

CAA ..... Clean Air Act

CERCLA ..... Comprehensive Environmental Response, Compensation, and Liability Act

CFR ..... Code of Federal Regulations

CWA..... Clean Water Act

DoD ..... Department of Defense

ECAAR ..... Environmental Compliance Assessment for Army Reserves

ECAMP ..... Environmental Compliance Assessment Management Program

ECAS..... Environmental Compliance Assessment System

EPCRA ..... Emergency Planning and Community Right-To-Know Act

FIFRA ..... Federal Insecticide, Fungicide, and Rodenticide Act

GMP ..... Good Management Practice

NEPA ..... National Environmental Policy Act

NFPA..... National Fire Protection Association

NHPA ..... National Historic Preservation Act

OSHA ..... Occupational Safety and Health Administration

PCB ..... Polychlorinated Biphenyls

POL ..... Petroleum, Oils, and Lubricants

RCRA ..... Resource Conservation and Recovery Act

SARA ..... Superfund Amendments and Reauthorization Act

SHPO..... State Historic Preservation Officer

USAR ..... United States Army Reserve

USARC ..... United States Army Reserve Center

UST ..... Underground Storage Tank

DEPARTMENT OF THE ARMY
HEADQUARTERS, 157TH SEPARATE INFANTRY BRIGADE (MECH)
HORSHAM CORPORATE CENTER
400 HORSHAM ROAD
HORSHAM,PENNSYLVANIA 19044-2189

REPLY TO
ATTENTION OF:

AFKA-GCF-EN (200-1)

February 27, 1992

MEMORANDUM FOR Facility Managers, 157th SIB (M)

SUBJECT: Environmental Protection Agency (EPA) Identification Numbers

1. The EPA has assigned the Identification (ID) Numbers which are listed in paragraph 4.

2. Each US Army Reserve Center (USARC) listed should receive a certificate from the EPA within two weeks. This certificate will remain on file at the USARC. Contact this headquarters if a certificate is not received within 30 days.

3. In the event that an EPA ID Number is needed prior to receiving the certificate, refer to this letter.

4. EPA ID Number list:

PA1210422464	Adams County USARC
PA9210422870	Bristol Veteran's Memorial USARC
PA8210400984	Downingtown USARC
PA8210421568	Germantown Veteran's Memorial USARC
PA7210400985	Horsham Corporate USARC
PA3210422082	Horsham Memorial USARC
PA7210421718	Huntingdon USARC
PA5210400987	Northeast Philadelphia USARC (Wingohocking)
PA4210421885	Frank M. Parker USARC
PA6210400986	Quakertown USARC
PA4210400988	Stockertown USARC
PA8210422293	Wilson-Kramer USARC

5. The point of contact at this headquarters is MAJ Pominville (215) 957-8608.

FOR THE COMMANDER:

Lewis J. Smith

LEWIS J. SMITH
LTC, IN
Brigade Executive Officer

DISTRIBUTION:
1 ea Facility Managers
1 Brigade XO

EA Engineering, Science, and Technology

15 Loveton Circle
Sparks, MD 21152
Telephone: 410-771-4950
Fax: 410-771-4204

3 January 2000
EA Project 60957.76

Department of the Army
U.S. Army Corp of Engineers
Baltimore District
10 South Howard Street
10th Floor, HTRW Branch
Baltimore, Maryland 21201

Attn: Ms. Nancy Flaherty:

Re: Quarterly Groundwater Monitoring Letter Report
Germantown United States Army Reserve Center, Philadelphia, Pennsylvania
Contract No. DAC31-94-D-0025, D.O. No. 0150

EA Engineering, Science and Technology, Inc. has been contracted by the U.S. Army Corps of Engineers (USACE) Baltimore District, under Contract No. DACA31-94-D-0025, Delivery Order No. 0150, to conduct quarterly groundwater monitoring for a one year period at the Germantown United States Army Reserve Center (USARC) located on Wissahickon Avenue off US Route 1 in Philadelphia, PA. A site vicinity map is presented on Figure 1. The objective of the field investigation is to conduct quarterly groundwater sampling to assess groundwater quality in the vicinity of a former 12,000 gallon No. 2 heating oil underground storage tank (UST) location. Project activities at this site were conducted in accordance with U.S. Environmental Protection Agency (EPA) Region III and Pennsylvania Department of Environmental Protection (PADEP) regulatory guidelines.

FIELD INVESTIGATION ACTIVITIES

On 23 November 1999, a two-man field team of EA personnel conducted the sampling of the nine groundwater monitoring wells at the Germantown USARC. Locations of each the monitoring wells are shown in Figure 2. Each well was sampled using a low flow sampling technique as described in Appendix A. The well purging forms are included in Appendix B. Field data obtained included oxidation-reduction potential, turbidity, temperature, specific conductance, pH, and dissolved oxygen (DO). Water levels and light non-aqueous phase

liquid (LNAPL) were gauged using an oil-water interface probe. If the probe indicated LNAPL was present, a disposable bailer was used to visually confirm the LNAPL presence in the well. LNAPL was present in two wells, MW-01 (1.24 ft) and MW-03 (0.80 ft), which were not sampled. These data are presented in Table 1.

The measured water-table elevations are contoured in Figure 3. Depth to groundwater was approximately 30 ft at the site. Based on the water-table conditions, groundwater flows from the northeast to the southwest.

Seven groundwater samples were submitted for analysis of benzene, toluene, ethylbenzene, xylenes (BTEX), cumene and naphthalene by EPA Method 8260; and fluorene and phenantherene by EPA Method 8270. One duplicate sample (MW-04) and one rinse blank (sampling pump) were collected during the sampling event and analyzed for BTEX, cumene, naphthalene, fluorene and phenantherene. One trip blank sample was analyzed for BTEX, cumene and naphthalene.

Samples were hand-carried under strict chain-of-custody to Severn-Trent Laboratories, Sparks, Maryland for analysis. Groundwater samples were analyzed with standard turn-around times of 28 days from receipt of samples at the lab for hard-copy reports and 42 days for electronic data deliverables.

Additionally, EA personnel investigated seven drums located near the vehicle maintenance building. The drums were slowly opened and a photoionization detector (PID) was used to monitor the breathing zone and to determine whether the drums contained any VOCs. It was discovered that the drums contained soil cuttings with water from drilling activities. No PID readings above background were observed in the drums. No sheen was observed on the water surface in each of the drums opened.

ANALYTICAL RESULTS

Analytical results of the seven monitoring wells from the November 1999 quarterly sampling event are summarized on Table 1. The analytical laboratory report is included in Appendix C. Concentrations of BTEX, cumene, naphthalene, phenantherene and fluorene were compared against *PADEP's Medium-Specific Concentrations (MSCs) for Organic Regulated*

Detected constituent concentrations for the seven wells were below the MSCs. Cross contamination or field contamination was not present as indicated by the trip and rinse blank results. The duplicate performed at MW-04 showed comparable concentrations.

INVESTIGATIVE DERIVED MATERIAL

Purge water and decontamination fluids were contained and treated onsite by the sampling personnel using activated carbon and the treated water was discharged to the sanitary sewer. Used personal protective equipment was double-bagged and disposed of as general refuse.

We appreciate working with the Baltimore Corp of Engineers and the 99th Reserve Support Command Engineers in completing this project. Please do not hesitate to call with any questions or comments that you may have.

Respectfully submitted,

Timothy Peck, P.G.
Task Manager

Vincent A. Williams
Project Manager

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EA Engineering, Science, and Technology, Inc.
15 Loveton Circle
Sparks, Maryland 21152
TEL: (410) 771-4950

LETTER OF TRANSMITTAL

TO: USACE- Baltimore District
Engineering Division–HTRW Branch
10 South Howard Street, 10th Floor
Baltimore, MD 21201

DATE: 3 January 2000	JOB NO. 60957.76
ATTENTION: **Ms. Nancy Flaherty**	
RE: Contract No. DACA31-940D-0025, D.O. 0150	
Draft Letter Work Plan for Quarterly Groundwater	
Monitoring at the Germantown USARC	
Philadelphia, Pennsylvania	

WE ARE SENDING YOU:		X	Attached				Under separate cover via _____ the following items:		
	Shop drawings		Prints		Plans		Samples		Specifications
	Copy of letter		Change order				Other:		

COPIES	DATE	NO.	DESCRIPTION
2	01/03/00	1	Letter Report for Quarterly Groundwater Sampling at the Germantown USARC, Philadelphia, Pennsylvania.

THESE ARE TRANSMITTED as checked below:

	For approval		Approved as submitted		Resubmit copies for approval
	For your use		Approved as noted		Submit copies for distribution
X	As requested		Returned for corrections		Return corrected prints
	For review and comment		Other:		
	FOR BIDS DUE:		PRINTS RETURNED AFTER LOAN TO US		

REMARKS: EA is pleased to provide USACE–Baltimore District with copies of the above listed document. Should you have any Questions or comments regarding this report please do not hesitate to call me at 410-329-5151.

COPY TO: Ms. Yvonne Deloatch, 99th RSC (1 copy)

SIGNED:

Vincent A. Williams – Project Manager

If enclosures are not as noted, kindly notify us at once.

Table 1. Analytical Results of the Quarterly Ground-water Sampling Event, November 1999
Germantown USARC, Philadelphia, Pennsylvania

WELL DATA (Well ID)	MW-01	MW-02	MW-03	MW-04	DUP-1 MW-04	MW-05	MW-06	MW-07	MW-08	RW-01	TRIP BLANK	FIELD BLANK
Sampling Date	11/23/99	11/23/99	11/23/99	11/23/99	11/23/99	11/23/99	11/23/99	11/23/99	11/23/99	11/23/99	11/23/99	11/23/99
Well Depth (ft)	45.4	52.3	45.3	39.0	--	40.7	39.6	40.5	39.0	40.4	--	--
Elevation at Ground Surface (ft + MSL)	208.17	207.11	206.94	206.03	--	208.03	207.29	207.99	206.36	208.02	--	--
Depth to Water (from Surface)	30.60	28.99	29.50	29.40	--	29.30	28.67	29.10	28.22	28.98	--	--
Depth to Product (from Surface)	29.36	NA	28.70	NA	--	NA	NA	NA	--	--	--	--
Water Elevation (ft + MSL)	**178.64**	178.12	**178.13**	176.63	--	178.73	178.62	178.89	178.14	179.04	--	--
PARAMETERS												
Indicator												
Turbidity (NTU)	NS	5.2	NS	3.5	--	64*	4.3	9.9	9.2	2.8	--	--
Natural Attenuation												
Oxidation-reduction potential (mV)	NS	+82.3	NS	-31.9	--	-90.3	85.2	242.7	-38.3	-47.3	--	--
Conductivity (ms/cm)	NS	1199	NS	1406	--	1502	1625	1006	1146	1501	--	--
Dissolved Oxygen (mg/L)	NS	1.07	NS	1.09	--	0.55	1.32	1.56	0.54	1.18	--	--
pH	NS	5.76	NS	6.26	--	6.57	6.46	5.68	6.44	6.29	--	--
Temperature (°C)	NS	17.96	NS	19.71	--	21.78	20.7	19.35	19.33	19.86	--	--

VOCs (ug/L)	PADEP USED AQUIFER TDS<2500 (ug/L)	MW-01	MW-02	MW-03	MW-04	DUP-1 MW-04	MW-05	MW-06	MW-07	MW-08	RW-01	TRIP BLANK	FIELD BLANK
Benzene	5	NS	1U	NS	1U	1U	1U	1U	1U	1U	1U	1U	1U
Ethylbenzene	700	NS	1U	NS	1U	1U	1U	1U	1U	1U	1U	1U	1U
Cumene	25	NS	1U	NS	1U	1U	1U	1U	1U	1U	1U	1U	1U
Naphthalene	20	NS	1U	NS	1U	0.5 J	1U	1U	1U	1U	0.9 J	1U	1U
Toluene	1,000	NS	1U	NS	1U	1U	0.4 J	1U	1U	1U	1U	1U	1U
Xylenes, Total	10,000	NS	1U	NS	1U	1U	1U	1U	1U	1U	0.5 J	1U	1U
SVOCs (ug/L)													
Flourene	190	NS	10U	NS	10U	10U	10U	10U	10U	10U	4 J	--	--
Phenanthrene	1,200	NS	10U	NS	10U	10U	10U	10U	10U	10U	2 J	--	--

* = Turbidity did not fall below 10 NTU before 3 well volumes were evacuated
MSL - Mean Sea Level
NS - Not sampled due to the presence of LNAPL
-- = Not Applicable
U = Under Detection Limit
J = Laboratory Estimated Value
Bold values indicate a corrected groundwater elevation due to the presence of LNAPL with a specific gravity of 0.86
Shaded cells indicate an exceedence of PADEP Medium-Specific Concentrations (MSC) for that constituent.

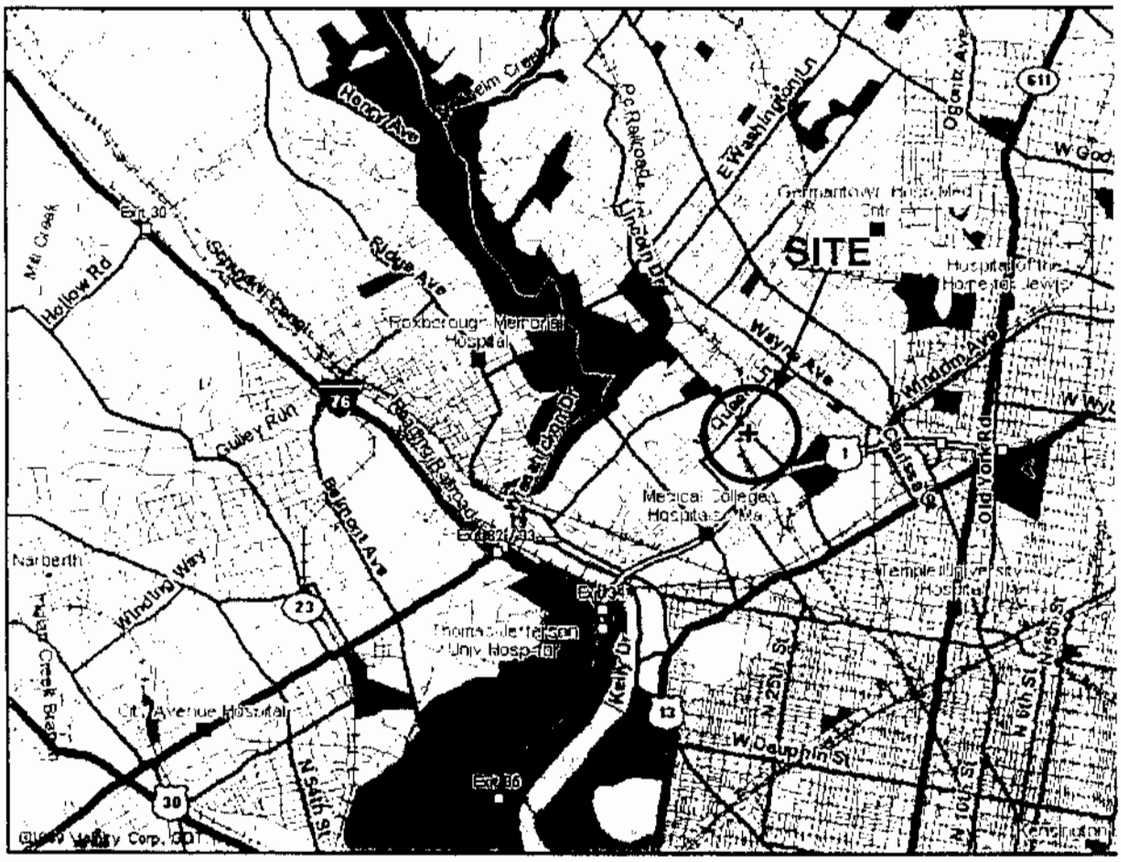
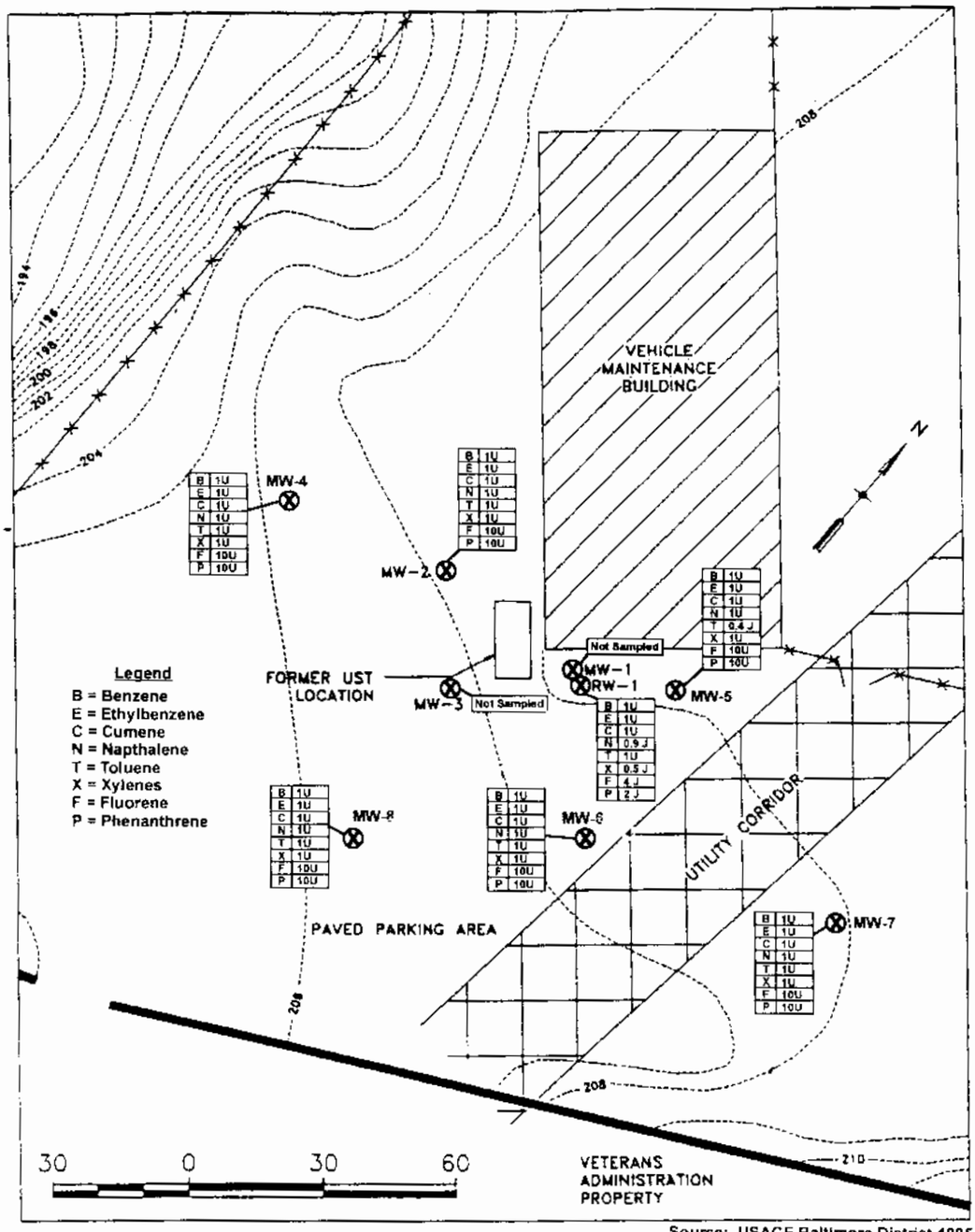


Figure 1. Site Vicinity Map.

P:\Projects\Federal\DOD\Army\Projects\6095776\Sitevic.cdr



Source: USACE Baltimore District 1995

LEGEND

FENCE LINE

CONCRETE RETAINING WALL

GROUND ELEVATION CONTOURS (USACE 1995)

EXISTING MONITORING WELL (MW), OR RECOVERY WELL (RW) LOCATION

Figure 2. Site Map Germantown U.S. Army Reserve Center.

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Sampling Methodology

A.1 COLLECTION OF GROUNDWATER SAMPLES FROM EXISITNG MONITORING WELLS

1. Water level elevations will be taken prior to any sampling activity. The elevations shall be measured to the nearest 0.01 foot. Wells containing LNAPL will not be sampled.

2. A 2" submersible pump fitted with dedicated poly-tubing will be utilized to purge and sample the well.

3. The tubing will be lower into the well slowly, as not to agitate the water, into the lowest third of the screened interval of the well.

4. The discharge hose from the submersible shall be connected to the intake of the flow-through cell of the combination water quality meter.

5. Begin purging at a rate of 0.5 liters per minute. If there are no indications of dewatering, flow can be increased. Insure that the pumping rate does not exceed the recharge rate for the well.

6. Record initial water quality measurements, including pH, dissolved oxygen, temperature, specific conductivity, redox potential and turbidity.

7. Subsequent to the initial recording, record the same water quality parameters, including the water level, every 5 minutes until the water quality parameters have stabilized. If the parameters do not stabilize, a minimum of three well volumes will be purged. The calculation for one well volume is as follows:

   Liquid Column (LC) = well depth – depth to water

   LC*0.6528 (gallons/linear foot for a 4-in well) = 1 well volume

8. After the purging is completed, sampling of the groundwater into the appropriate containers will proceed.

9. Sample containers will be placed in iced coolers for transport to the analytical laboratory. One trip blank will accompany the VOC samples during transport to the laboratory.

10. To ensure sample integrity, groundwater sampling will be performed under chain-of-custody.

11. Remove and decontaminate water level indicator probe and dispose of the used tubing.

12. The submersible pump will be decontaminated by steam cleaning the pump casing, hose and cables with a solution of laboratory grade detergent (alconox) and water. This will be followed by flushing three pump volumes of potable water through the pump.

A.2 SAMPLE TRACKING, HANDLING, AND CUSTODY

A.2.1 SAMPLE PACKAGING AND SHIPPING

Samples will be packaged and shipped in accordance with USACE requirements (USACE 1990). The following records are associated with the labeling and shipping process:

- Sample tag or label
- Custody seal
- Chain-of-custody form
- Bill of lading (air bill or similar document).

Samples are physical evidence collected from a facility or the environment. Laboratory chain-of-custody procedures have been established to ensure sample traceability from the time of receipt through completion of analysis.

Chain-of-custody originates as samples are collected. Chain-of-custody documentation accompanies the samples as they are moved from the field to the laboratory with shipping information and appropriate signatures indicating custody changes along the way.

Chain-of-custody sample forms will be completed to the fullest extent possible prior to sample shipment. The forms will include the following minimum information:

- Project name
- Sample number (includes location and type)
- Matrix of the sample
- Type of sample (grab, composite, etc.)
- Preservation applied (or "None" if no preservation)
- Name of the person collecting the sample
- Analyses requested for each sample.

The National Enforcement Investigations Center (NEIC) of USEPA defines custody of evidence in the following ways:

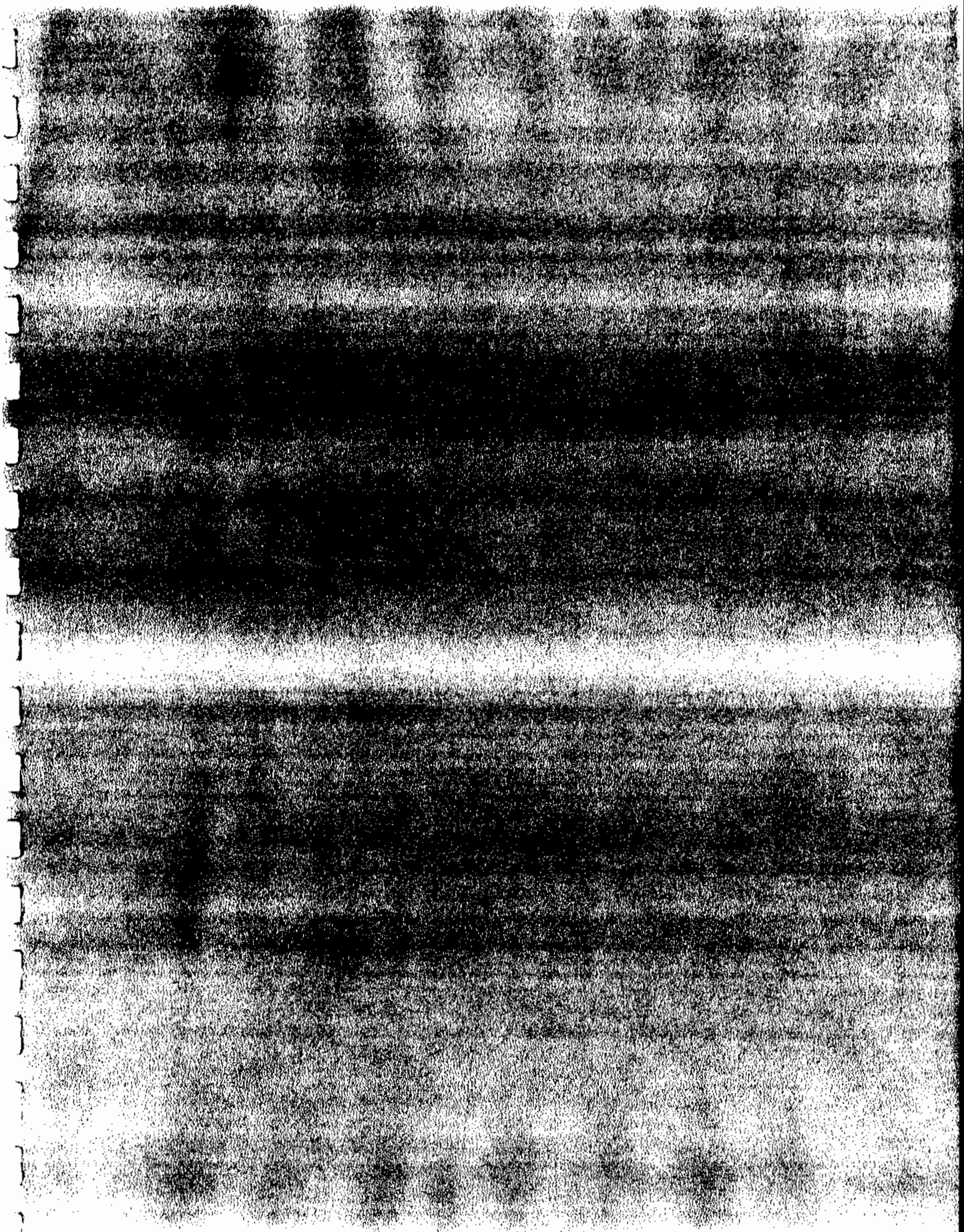
- It is in your actual possession; or
- It is in your view, after being in your physical possession; or
- It was in your possession and then you locked or sealed it up to prevent tampering: or
- It is in a secure area.

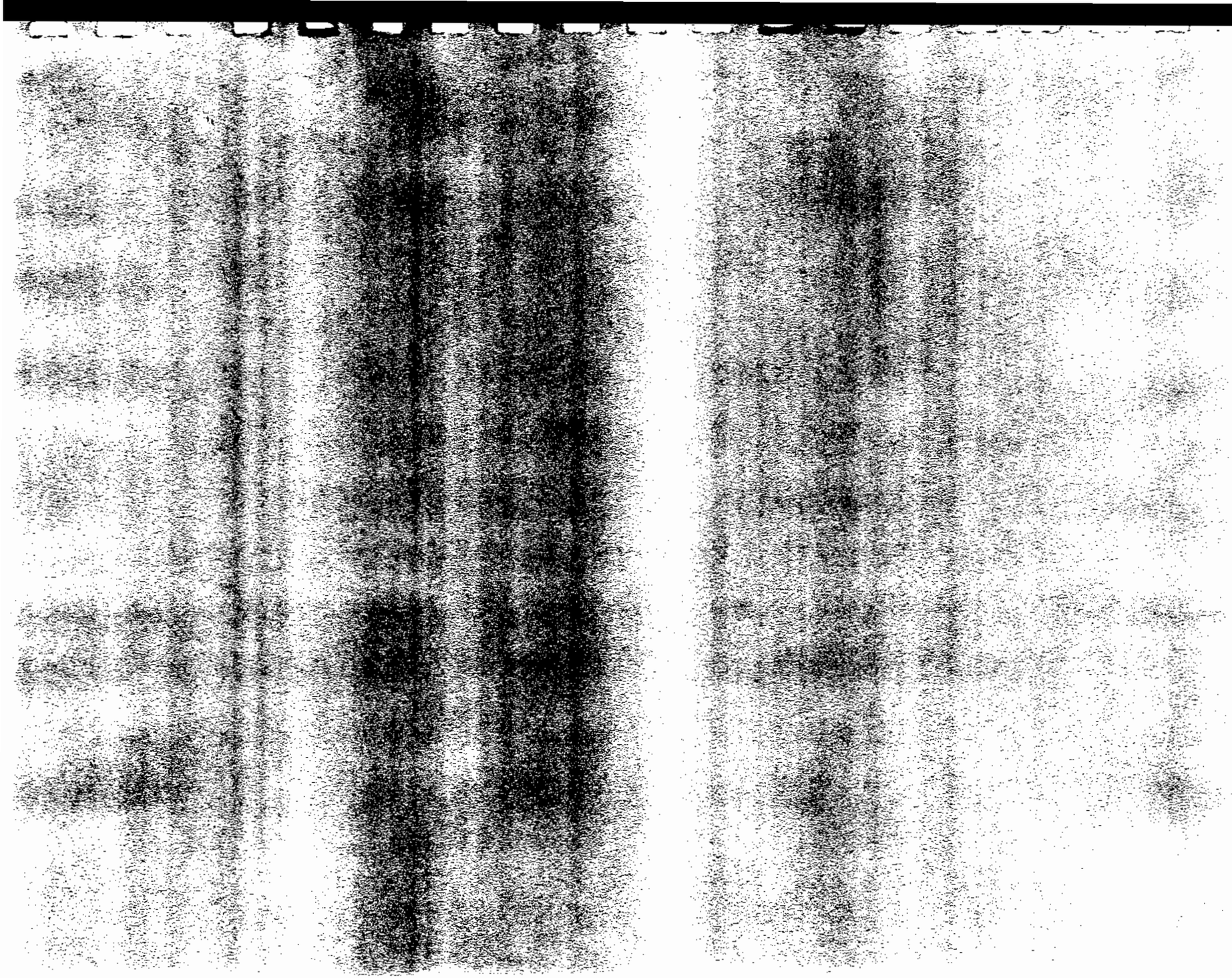
Sample bottles will be packed in coolers at the laboratory and shipped to the Task Manager. The coolers containing the sample bottles will remain in the possession of the Task Manager until sampling is completed. The Task Manager will keep the bottles in a secure location (i.e., a locked vehicle or room) when not actively sampling, and within clear view during sampling. Upon completion of sampling, the Task Manager will complete and sign the chain-of-custody forms, which will then be sealed in a water-tight plastic envelope and shipped with the samples to the laboratory. The shipping company will be considered in

possession of the samples from time of receipt until delivery to the Laboratory Sample Management Officer.

A.2.2 SAMPLE DOCUMENTATION IN THE FIELD

Field personnel will be issued serialized weatherproof logbooks. The Task Manager and field staff are responsible for recording pertinent project information including, but not limited to, field work documentation, field instrumentation readings, calculations, calibration records, Work Plan distributions, photograph references, sample tag/label numbers, meeting information, and important times and dates of telephone conversations, correspondence, or deliverables. This site logbook will also contain an abbreviated version of notes listed in the team or individual field logbooks. The sample team or individual performing a particular sampling activity is required to maintain a field logbook that will be filled out at the location of sample collection immediately after sampling. It will contain sample particulars including sample number, sample collection time, sample location, sample descriptions, sampling methods used, daily weather conditions, field measurements, name of sampler, and other site-specific observations. It will address deviations from the Work Plan or HASP, including authorization obtained and the rationale for the deviation, visitor's names or community contacts during sampling, and geologic and other site-specific information. A sample log sheet will be filled out for each sample from the information recorded in the field logbook. In addition, field team members will use appropriate forms applicable to field activities. These include the boring logs and sampling data sheets.





15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID MW-2 SAMPLE NO. GW-MW-2
WELL/SITE DESCRIPTION

DATE 11/23/99 TIME 1200 AIR TEMP. 60's

WELL DEPTH 52.30 ft
WATER DEPTH 28.99 ft
WATER COL. HEIGHT 23.31 ft
EQUIVALENT VOLUME OF STANDING WATER (gal) (L)
PUMP RATE (gpm) (lpm)
PUMP TIME min
WELL WENT DRY? ( ) Yes (X) No
VOL. REMOVED 42,500 (gal) (L)
PURGE AGAIN? ( ) Yes (X) No

CASING HEIGHT ft
WELL DIAMETER 4 in
SANDPACK DIAM. in
PUMP TIME 45 MIN min
RECOVERY TIME min
TOTAL VOL. REMOVED (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
	1200	0	5.67	593	16.83	118.0	44.0	5.60	28.99	500mL/min
	1205	2500	5.96	1170	17.32	79.5	78.5	0.98	29.09	1500mL/min
	1210	7500	5.94	1181	17.50	76.1	39.1	1.00	29.09	1000mL/min
	1215	12,500	5.81	1200	17.91	75.9	19.5	1.05	29.09	1000mL/min
	1220	17,500	5.79	1199	19.06	76.2	17.1	1.06	29.09	1000mL/min
	1225	22,500	5.79	1205	18.08	76.6	15.7	1.08	29.09	1000mL/min
	1230	27,500	5.77	1199	17.99	78.0	11.2	1.09	29.09	1000mL/min
	1235	32,500	5.76	1196	17.97	79.6	9.3	1.07	29.09	1000mL/min
	1240	37,500	5.75	1198	17.95	81.6	9.8	1.06	29.09	1000mL/min
	1245	42,500	5.76	1199	17.96	82.3	5.2	1.07	29.09	1000mL/min

COMMENTS SAMPLE GW-MW-2 @ 1245

SIGNATURE

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID MW-4 SAMPLE NO. GW-MW-4
WELL/SITE DESCRIPTION Airport Parking Lot

DATE 11/23/09 TIME 1000 AIR TEMP. 60's

WELL DEPTH 39.0 ft CASING HEIGHT ft
WATER DEPTH 29.4 ft WELL DIAMETER 4" in
WATER COL. HEIGHT 9.6' ft SANDPACK DIAM. in
EQUIVALENT VOLUME OF STANDING WATER (gal) (L)
PUMP RATE (gpm) (lpm
PUMP TIME min
WELL WENT DRY? ( ) Yes (X) No PUMP TIME 100 min
VOL. REMOVED 27,500 (gal) (L) RECOVERY TIME min
PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
	1000	0	5.72	1524	18.30	52.6	1329	1.40	29.4	500 mL/min
	1005	2500mL	5.87	623	8.68	11.8	106.7	1.58	29.4	500mL/min
	1010	5000mL	6.09	1529	19.04	-21.2	73.6	1.41	29.4	500mL/min
	1015	7500mL	6.21	1527	19.10	-38.5	72.6	1.43	29.4	500mL/min
	1020	10000mL	6.22	1528	19.13	-39.7	69.4	1.43	29.5	500mL/MIN
	STOPPED	SUG	TO	GENERATOR	FAIL	URE	(GAS)			
	1055	15000mL	6.37	1440	19.02	-22.4	58.0	1.24	29.35	500mL/min
5 gallons	1100	17500mL	6.34	1454	19.59	-30.8	49.5	1.37	29.4	500mL/min
	1105	20,000mL	6.36	1430	19.30	-38.9	49.6	1.26	29.6	500mL/min
	1110	22,500mL	6.36	1428	19.16	-41.2	49.3	1.24	29.8	500mL/min
	115	25,000mL	6.35	1431	19.21	-42.1	48.7	1.28	30.0	500mL/min
	1120	27,500mL	6.33	1431	19.25	-45.4	46.2	1.39	30.0	500mL/min
	1125	30,000mL	6.31	1573	19.00	-8.6	20.2	2.20	30.0	500mL/min

COMMENTS DUP-1 collected here @1120 Cleaned probes in 5% w/DI H2O.

SIGNATURE

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID MW-4 (23) SAMPLE NO. GW-MW-4
WELL/SITE DESCRIPTION Deptford

DATE / / TIME AIR TEMP.

WELL DEPTH ft CASING HEIGHT ft
WATER DEPTH ft WELL DIAMETER in
WATER COL. HEIGHT ft SANDPACK DIAM. in
EQUIVALENT VOLUME OF STANDING WATER (gal) (L)
PUMP RATE (gpm) (lpm)
PUMP TIME min
WELL WENT DRY? ( ) Yes (X) No PUMP TIME min
VOL. REMOVED (gal) (L) RECOVERY TIME min
PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED (gal) (L)

Date	Time	Volume Removed	pH	Cond.	Temp.	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
	1130	32,500	6.30	1407	19.67	-28.8	9.3	0.96	30.0	500mL/min
	1135	35.00	6.28	1403	19.69	-31.3	8.3	1.04	30.0	500mL/min
	1140	37,500	6.26	1406	19.71	-31.9	3.5	1.09	30.0	500mL/min

COMMENTS Sampled 1140 GW-MW-4 + DUP-1

SIGNATURE

50 ft
24.36
1.24

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

28.46

WELL ID GW-MW-5 SAMPLE NO. _____
WELL/SITE DESCRIPTION Circa 70-2

DATE 11/23/99 TIME 1215 AIR TEMP. 65°F Drizzle

WELL DEPTH 41.5 ft CASING HEIGHT flush ft
WATER DEPTH 24.30 ft WELL DIAMETER 4" in
WATER COL. HEIGHT 17.8 ft SANDPACK DIAM. _____ in
EQUIVALENT VOLUME OF STANDING WATER 7.93 (gal) (L)
PUMP RATE 500 ml per minute (gpm) (lpm
PUMP TIME 1225-1440 min
WELL WENT DRY? ( ) Yes (X) No PUMP TIME 135 min
VOL. REMOVED n/a (gal) (L) RECOVERY TIME n/a min
PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED 67.5 (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
11/23/99	1228	1.5 liters	6.47	1458	17.10	97.6	149	1.14	30.25	500 ml per
	1235	5.0	6.62	1539	19.28	-57.3	130	0.85	30.64	
	1240	7.5	6.65	1573	20.3	-85.7	162	0.91	30.64	
	1245	10.0	6.65	1567	20.56	-94.5	164	0.89	31.03	
	1250	12.5	6.63	1562	20.59	-74.8	145	1.10	31.65	
	1255	15.0	6.64	1538	20.47	-83.2	120	0.88	32.00	
	1300	17.5	6.65	1558	20.97	-89.1	115	0.90	32.15	
	1305	20.0	6.65	1557	21.08	-90.6	111	0.91	32.37	
	1310	22.5	6.63	1549	21.22	-90.5	106	0.87	32.47	
	1315	25.0	6.64	1548	21.33	-92.7	116	0.88	32.51	
	1320	27.5	6.63	1530	21.12	-93	110	0.87	32.24	
	1325	30.0	6.62	1532	21.53	-94.4	99	0.82	32.30	
	1330	32.5	6.61	1536	21.83	-93.3	97	0.81	32.35	

COMMENTS Sample collected @ 1438.

SIGNATURE _____

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID GW-MW-5 SAMPLE NO. _____
WELL/SITE DESCRIPTION Accenture

DATE 11/23/99 TIME _____ AIR TEMP. _____

WELL DEPTH _____ ft CASING HEIGHT _____ ft
WATER DEPTH _____ ft WELL DIAMETER _____ in
WATER COL. HEIGHT _____ ft SANDPACK DIAM. _____ in
EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)
PUMP RATE _____ (gpm) (lpm)
PUMP TIME _____ min
WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min
VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min
PURGE AGAIN? ( ) Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
11/23/99	1235	35.0 liters	6.60	1517	21.53	-91.8	63	0.82		500 ml per min
	1240	37.5	6.60	1509	21.48	-91.3	83	0.82	32.65	
	1245	40.0	6.59	1510	21.53	-90.5	96	0.82		
	1250	42.5	6.59	1506	21.54	-89.7	109	0.80	32.93	
	1255	45.0	6.59	1492	21.32	-90.0	116	0.81	32.67	
	1400	47.5	6.59	1492	21.34	-90.6	120	0.81	32.63	
	1405	50.0	6.58	1485	21.19	-89.3	40	0.83	32.30	
	1410	52.5	6.58	1480	21.20	-90.3	50	0.77	32.54	
	1415	55.0	6.62	1463	20.42	-100.2	94	0.60	32.74	
	1420	57.5	6.59	1502	21.64	-95.5	84	0.55	33.17	
	1425	60.0	6.58	1503	21.75	-93	74	0.55	33.27	
	1430	62.5	6.57	1502	21.76	-91.4	71	0.55		
	1435	65.0	6.57	1502	21.78	-90.3	64	0.55		

COMMENTS Pumped for 190 minutes at 500 ml per minute everything stabilized but turbidity never came down so I sampled anyway @ 1438

SIGNATURE _____

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID GW-MW-6 SAMPLE NO. _____
WELL/SITE DESCRIPTION _____

DATE 11/23/99 TIME 0945 AIR TEMP. 60°F ± 2°F

WELL DEPTH 39.6 ft CASING HEIGHT flush ft
WATER DEPTH 28.67 ft WELL DIAMETER 4" in
WATER COL. HEIGHT 10.93 ft SANDPACK DIAM. _____ in
EQUIVALENT VOLUME OF STANDING WATER 7.1 gallons (gal) (L)
PUMP RATE 500 ml per minute (gpm) (lpm)
PUMP TIME 0948 - 1030 or 42 minutes min
WELL WENT DRY? ( ) Yes (X) No PUMP TIME — min
VOL. REMOVED — (gal) (L) RECOVERY TIME — min
PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED 21 (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
11/23	0950	1.0 liters	6.36	1598	19.57	274.4	22.4	1.11	29.62	500 ml per min
	0955	3.5	6.41	1646	20.88	226.8	22.1	1.32		
	1000	6.0	6.42	1660	21.35	194.0	29.2	1.35		
	1005	8.5	6.43	1688	21.75	164.5	51.5	1.35	29.72	
	1010	11.0	6.43	1650	20.07	132.2	14.1	1.28	30.0	
	1015	13.5	6.44	1638	20.66	95.2	8.2	1.30	30.2	
	1020	16.0	6.45	1635	20.66	90.1	9.1	1.30	30.2	
	1025	18.5 ↓	6.46	1625	20.70	85.2	4.3	1.32	30.2	

COMMENTS Sample collected @ 1028

SIGNATURE _____

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID MW-7 SAMPLE NO. _____
WELL/SITE DESCRIPTION Keeneytown

DATE 11/23/99 TIME ~~0830~~ 1030 AIR TEMP. 65° F + drizzle

WELL DEPTH 40.5 ft CASING HEIGHT flush ft
WATER DEPTH 29.10 ft WELL DIAMETER 4" in
WATER COL. HEIGHT 11.4 ft SANDPACK DIAM. _____ in
EQUIVALENT VOLUME OF STANDING WATER 7.4 Gallons (gal) (L)
PUMP RATE 500 ml per minute (gpm) (lpm)
PUMP TIME 1040 - 1205 or 85 minutes min
WELL WENT DRY? ( ) Yes ( ) No PUMP TIME 85 min
VOL. REMOVED _____ (gal) (L) RECOVERY TIME n/a min
PURGE AGAIN? ( ) Yes ( ) No TOTAL VOL. REMOVED 42.5 (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
11/23/99	1043	1.5 liters	6.12	915	15.45	195.6	98.5	2.25	30.20	500 ml per min
	1050	5.0	5.73	984	18.30	203.5	91.2	2.07	30.45	
	1055	7.5	5.68	995	18.73	199.9	80.6	1.97	30.17	
	1100	10.0	5.68	1009	19.33	201.6	38.9	1.93	30.17	
	1105	12.5	5.67	1008	19.32	211.3	24.9	1.84	30.24	
	1110	15.0	5.67	1007	19.34	216.5	16.5	1.73	30.24	
	1115	17.5	5.68	1013	19.62	217.7	19.4	1.71	30.34	
	1120	20.0	5.69	1017	19.79	219.1	16.2	1.68	30.34	
	1125	22.5	5.69	1003	19.12	222.2	17.3	1.71	30.34	
	1130	25.0	5.69	1001	19.17	222.1	15.6	1.64	30.34	
	1135	27.5	5.68	1002	19.19	225.3	14.9	1.60	30.34	
	1140	30.0	5.68	1001	19.15	230.6	12.7	1.64	30.34	
↓	1145	32.5 ↓	5.69	1002	19.19	233.5	10.1	1.59	30.34	↓

COMMENTS Sample collected @ 1203

SIGNATURE [signature]

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID MW06W-MW-7 SAMPLE NO. _____
WELL/SITE DESCRIPTION Hercules

DATE 11/23/99 TIME 1030 AIR TEMP. _____

WELL DEPTH 40.5 ft CASING HEIGHT _____ ft
WATER DEPTH _____ ft WELL DIAMETER _____ in
WATER COL. HEIGHT _____ ft SANDPACK DIAM. _____ in
EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)
PUMP RATE _____ (gpm) (lpm
PUMP TIME _____ min
WELL WENT DRY? (-) Yes (-) No PUMP TIME _____ min
VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min
PURGE AGAIN? (-) Yes (-) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
11/23/99	1150	35.0 liters	5.68	1004	14.23	238.1	9.4	1.57	30.34	500 ml per min
"	1155	77.5	5.69	1008	14.42	234.2	9.8	1.58	30.34	"
"	1200	40.0	5.68	1.006	14.35	242.7	9.9	1.56	30.34	"

COMMENTS Sample collected @ 1203

SIGNATURE _____

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID GW-MW-8 SAMPLE NO. _____
WELL/SITE DESCRIPTION Excavation

DATE 11/23/99 TIME 1500 AIR TEMP. 60°F, overcast

WELL DEPTH 39.00 ft
WATER DEPTH 28.22 ft
WATER COL. HEIGHT 10.78 ft
EQUIVALENT VOLUME OF STANDING WATER 7.0 (gal) (L)
PUMP RATE 500 ml per minute (gpm) (lpm)
PUMP TIME 1503 - 1620 min
WELL WENT DRY? ( ) Yes (X) No
VOL. REMOVED n/a (gal) (L)
PURGE AGAIN? ( ) Yes (X) No

CASING HEIGHT flush ft
WELL DIAMETER 4" in
SANDPACK DIAM. _____ in
PUMP TIME 77 min
RECOVERY TIME 99 min
TOTAL VOL. REMOVED 38.5 (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
11/23/99	1505	1 Liter	6.50	1065	16.45	202	545	1.19	28.40	500 ml per min
	1510	3.5	6.56	1129	18.76	-24.6	374	0.65	28.40	
	1515	6.0	6.49	1133	18.93	-30.5	307	0.66	28.50	
	1520	8.5	6.48	1133	18.98	-31.6	204	0.63	28.50	
	1525	10.0	6.48	1132	18.94	-38.7	157	0.60	28.50	
	1530	13.5	6.48	1137	19.10	-40.4	118	0.60	28.50	
	1535	16.0	6.47	1141	19.22	-41.3	82	0.58	28.50	
	1540	18.5	6.46	1136	19.04	-40.2	63	0.58	28.50	
	1545	21.0	6.45	1136	19.00	-39.0	40	0.57	28.50	
	1550	23.5	6.45	1139	19.12	-39.1	31	0.57	28.50	
	1555	26.0	6.45	1146	19.34	-38.9	24	0.57	28.50	
	1600	28.5	6.44	1144	19.27	-38.6	16	0.55	28.50	
↓	1605	31.0 ↓	6.44	1145	19.30	-39.4	9.8	0.54	28.50	↓

COMMENTS Sample collected @ 1618

SIGNATURE _____

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID GW-MW-8 SAMPLE NO. _____
WELL/SITE DESCRIPTION Germantown

DATE 11/23/99 TIME _____ AIR TEMP. _____

WELL DEPTH _____ ft CASING HEIGHT _____ ft
WATER DEPTH _____ ft WELL DIAMETER _____ in
WATER COL. HEIGHT _____ ft SANDPACK DIAM. _____ in
EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)
PUMP RATE _____ (gpm) (lpm
PUMP TIME _____ min
WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min
VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min
PURGE AGAIN? ( ) Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
11/23KS	1610	33.5 liters	6.44	1147	19.36	-39.3	8.5	0.53	28.50	500 ml per m
1	1615	36.0 L	6.44	1146	19.33	-38.9	9.2	0.54	28.50	1

COMMENTS Sample collected @ 1618.

SIGNATURE _____

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID Rw-1 SAMPLE NO. Rw-Rw-1
WELL/SITE DESCRIPTION Loc. with respect to MW-1, MW-2

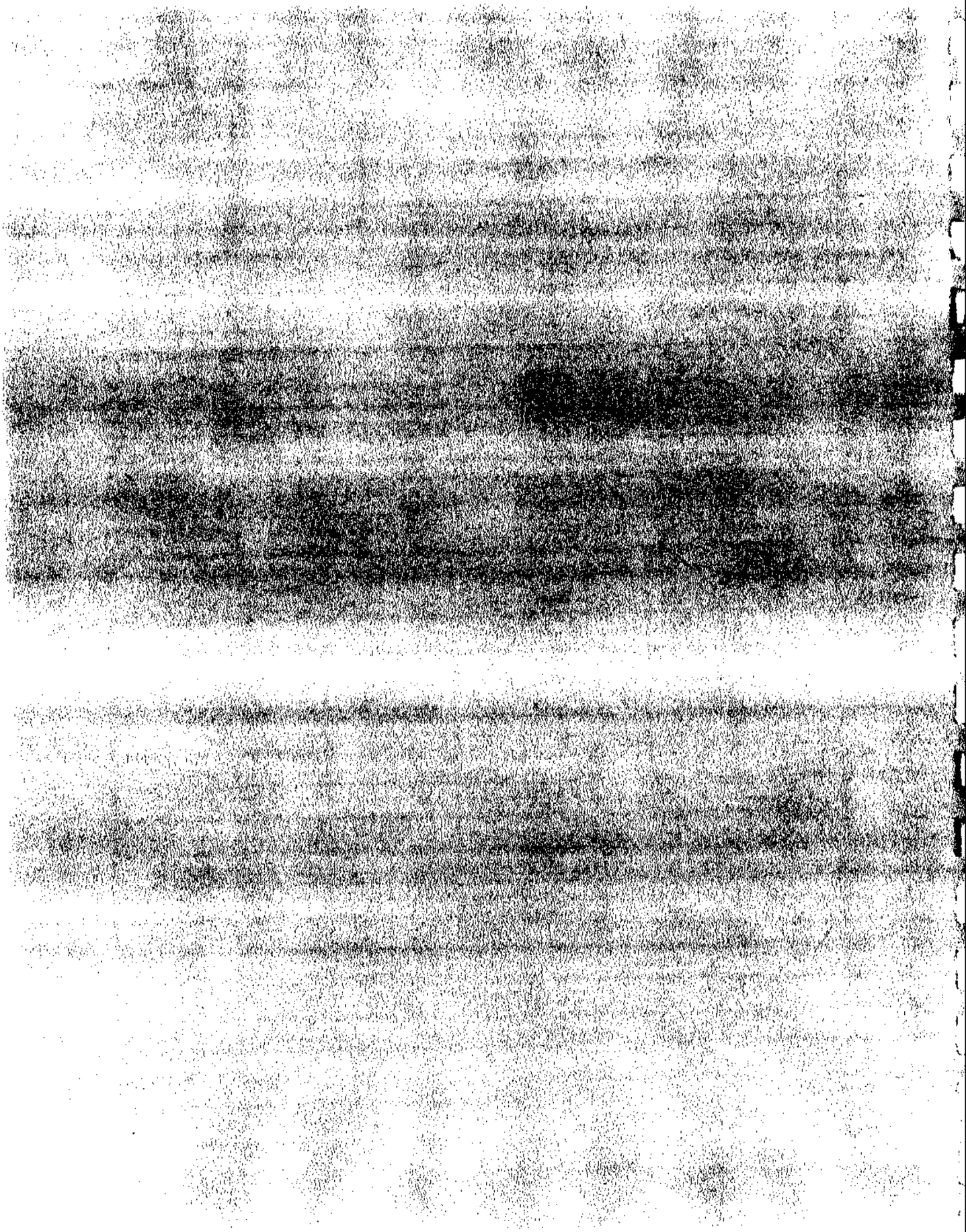
DATE 1/28/99 TIME 1360 AIR TEMP. 60's

WELL DEPTH 40.4 ft CASING HEIGHT ft
WATER DEPTH 28.98 ft WELL DIAMETER in
WATER COL. HEIGHT ft SANDPACK DIAM. in
EQUIVALENT VOLUME OF STANDING WATER (gal) (L)
PUMP RATE (gpm) (lpm)
PUMP TIME min
WELL WENT DRY? ( ) Yes (X) No PUMP TIME 50 min
VOL. REMOVED 25,000 (gal) (L) RECOVERY TIME min
PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
	1310	0	6.32	1500	17.44	52.3	86.0	8.69	28.98	500 mL/min
	1345	2500	6.13	1429	17.55	28.1	10.0	1.16	29.49	500 mL/min
	1350	5000	4.62	1523	18.84	-5.1	7.2	1.14	29.95	" "
	1355	7500	5.80	1534	19.16	19.6	2.0	1.24	29.96	" "
	1400	10,000	5.91	1524	19.71	-19.5	0	1.21	29.98	" "
	1405	12,500	4.89	1520	19.84	19.8	0	1.35	29.98	" "
	1410	15,000	5.89	1521	19.98	-13.5	0	1.26	29.98	" "
	1415	17,500	6.28	1503	19.72	-41.2	0	1.17	29.98	" "
	1420	20,000	6.28	1503	19.76	-44.7	0	1.16	29.98	" "
	1425	22,500	6.28	1505	19.92	-42.2	0	1.16	29.98	" "
	1430	25,000	6.29	1501	19.86	-44.3	2.8	1.18	29.98	" "

COMMENTS SAMPLE Rw-1 @ 1430
FIELD BLANK @ 1400

SIGNATURE



1. NARRATIVE

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **EA Eng., Sci., & Tech., Inc.**
Site: **Germantown USARC**
Project number: **60757.79**

STL Baltimore Report: **991657**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **14 December 1999**

This report contains the results of the analysis of one water sample collected on 23 November 1999 in support of the referenced project.

SAMPLE RECEIPT

The sample and one trip blank arrived intact by hand at Severn Trent Laboratories on 24 November 1999. Upon receipt, the sample and blank were inspected and compared with the chain-of-custody record. The sample and blank were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis.

Client Sample Designation	ST Lab Number
GW-MW-6	9912774
GW-MW-4	9912775
GW-MW-7	9912776
GW-MW-2	9912777
FIELD BLANK	9912778
GW-RW-1	9912779
GW-MW-5	9912780
GW-MW-8	9912781
DUP 1	9912782
TRIP BLANK	9912783

Following this narrative section are a glossary of data qualifiers (Table 1), codes associated with manual integration of chromatographic peaks (Table 2), and the chain of custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **EA Eng., Sci., & Tech., Inc.**
Site: **Germantown USARC**
Project number: **60757.79**

STL Baltimore Report: **991657**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **14 December 1999**

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - WATER (ST9912774 - ST9912783)

Sample Chronology: Ten samples and associated quality control were analyzed on 27 November 1999 for the client specified list of analytes by USEPA SW-846, Methods 5030B/8260B using a 25 ml purge volume. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

SEMIVOLATILES by GC/MS - WATER (STL9912774-STL9912782)

Sample Chronology: The samples and associated quality control were extracted on 29 November 1999 by SW-846, Method 3520C. The extracts were analyzed on 07-08 December 1999 for target compounds fluorene and phenanthrene by SW-846, Method 8270C. All holding times were met.

Duplicate LCSs were extracted along with the samples in lieu of an MS and MSD.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **EA Eng., Sci., & Tech., Inc.**
Site: **Germantown USARC**
Project number: **60757.79**

STL Baltimore Report: **991657**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **14 December 1999**

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in Severn Trent Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. Severn Trent Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

December 14, 1999

Natasha K. Sullivan, Laboratory Project Manager

TABLE 1. LABORATORY ORGANIC ANALYSIS DATA QUALIFIERS [1]

Qualifiers other than those listed below may be required to properly define the results. If used, they are given an alphabetic designation not already specified in this table or in a project/program. document such as a Quality Assurance Project Plan or a contract Statement of Work. Each additional qualifier is fully described in the Analytical Narrative section of the laboratory report.

U Indicates a target compound was analyzed for but not detected. The sample Reporting Limit (RL) is corrected for dilution and, if a soil sample, for percent moisture, if reported on a dry weight basis.

J Indicates an estimated value. This qualifier is used under the following circumstances:

1) when estimating a concentration for tentatively identified compounds (TICs) in GC/MS analyses, where a 1:1 response is assumed,
2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the RL but greater than the method detection limit (MDL).

B This qualifier is used when the analyte is found in the associated method blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. For GC/MS analyses, this qualifier is used for a TIC, as well as, for a positively identified target compound.

E This qualifier identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

D When applied, this qualifier identifies all compound concentrations reported from a secondary dilution analysis.

A This qualifier indicates that a TIC is a suspected aldol-condensation product.

N Indicates presumptive evidence of a compound. This qualifier is only used for GC/MS TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N qualifier is not used.

P When applied, this qualifier indicates a reported value from a GC analysis when there is greater than 25% difference for detected concentrations between the two GC columns.

---

(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

TABLE 2. CODES ASSOCIATED WITH MANUAL INTEGRATION OF CHROMATOGRAPHIC PEAKS

M1 . . . . Software failed to integrate peak or integrated peak improperly

M2 . . . . Multiple peaks within window, analyst's discretion used in peak identification.

M3 . . . . Close eluting or near-coelution of interferences.

M4 . . . . Adding or removing area due to peak tailing - subject to consistency within the sequence.

M5 . . . . Adding/removing area due to positive baseline deflection matrix effect.

M6 . . . . Adding/removing area due to negative baseline deflection matrix effect.

M7 . . . . Retention time shifts.

M8 . . . . Skimming vs. dropped baseline.

M9 . . . . Adding area due to peak splitting .

M10 . . . Secondary ions or qualifier ions.

Note: Appropriate Qualifiers are used and specified in the data package; either on the individual quantitation reports or in the Technical Review Checklists.

2. CHAIN-OF-CUSTODY

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: EA

Project Manager or Contact: Tim Peck or Matt Hintz

Phone:

Project No. 6095776

Project Name: Germantown USARC

Dept.: 2126 Task: 0002

Sample Storage Location: G7 / VOA 18

ATO Number:

Page 1 of 1

Report #: 991657

Report Deliverables: 1 2 3 (4) (D) E

EDD (Yes/No) EXCEL summary tables

DUE TO CLIENT: 12/15/99

Parameters/Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	BTEX 8260 @ 5ml Purge	Naphthalene Only 8260	Flammable Phenanthrene 8270	Normal reporting limits	EA Labs Accession Number	Remarks
11/23/99	1025	X		GW-MW-6	6	X	X	X		9912774	LPM: Natasha Sillaman
	1120	X		GW-MW-4	6	X	X	X		9912775	~~Lowest DL. Levels~~
	1203	X		GW-MW-7	6	X	X	X		9912776	possible
	1245	X		GW-MW-2	6	X	X	X		9912777	
	1400	X		FIELD BLANK	6	X	X	X		9912778	Standard turn
	1430	X		GW-BW-1	6	X	X	X		9912779	
	1438	X		GW-MW-5	6	X	X	X		9912780	
	1618	X		GW-MW-5	6	X	X	X		9912781	
	—	X		DUP-1	6	X	X	X		9912782	
	1630	X		TRIP BLANK	4	X	X			9912783	

LT 7/52

18 pest, 40 VOAs

COC0006283

Samples by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	11/23/99 1430		11/24/99 1130		
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		Cooky Huskey	11/24/99 1845		Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. 5 C pH: ☐ Yes ☒ No Comments: Custody Seals Intact ☐ Yes ☒ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

3. VOLATILES DATA

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW-MW-6

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 9912774

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9027.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: not dec Date Analyzed: 11/27/99

GC Column: RTX 502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Isopropylbenzene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

FORM I VOA

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW-MW-4

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912775

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9028.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: not dec. Date Analyzed: 11/27/99

GC Column: RTX 502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Isopropylbenzene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW-MW-7

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912776

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9029.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: not dec Date Analyzed: 11/28/99

GC Column: RTX 502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Isopropylbenzene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW-MW-2

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 9912777

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9030.D

Level (low/med): LOW Date Received: 11/24/99

% Moisture: not dec Date Analyzed: 11/28/99

GC Column: RTX 502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Isopropylbenzene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD BLANK

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 9912778

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9026.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: not dec. Date Analyzed: 11/27/99

GC Column: RTX 502. ID 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Isopropylbenzene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW-MW-1

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No. SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912779

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9031.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: not dec Date Analyzed: 11/28/99

GC Column: RTX 502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	0.9	J
98-82-8	Isopropylbenzene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	0.5	J

1A

EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW-MW-5

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912780

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9032.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: not dec. Date Analyzed: 11/28/99

GC Column: RTX 502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Isopropylbenzene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	0.4	J
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW-MW-8

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 9912781

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9033.D

Level (low/med): LOW Date Received: 11/24/99

% Moisture: not dec Date Analyzed: 11/28/99

GC Column: RTX 502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO	COMPOUND	(ug/L or ug/Kg) UG/L		Q
91-20-3	Naphthalene		1	U
98-82-8	Isopropylbenzene		1	U
71-43-2	Benzene		1	U
108-88-3	Toluene		1	U
100-41-4	Ethylbenzene		1	U
1330-20-7	Xylenes (total)		1	U

1A

EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET

DUP-1

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No. SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912782

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9034.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: not dec. Date Analyzed: 11/28/99

GC Column: RTX 502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	0.5	J
98-82-8	Isopropylbenzene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET

TRIP BLANK

Lab Name: ST LABORATORIES Contract: 991657

Lab Code: ST LABS Case No. SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912783

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VJ9A9025.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: not dec. Date Analyzed: 11/27/99

GC Column RTX 502. ID 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Isopropylbenzene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

4. SEMIVOLATILES DATA

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-MW-6

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912774

Sample wt/vol 1000 (g/ml) ML Lab File ID: SB2C6995.D

Level (low/med) LOW Date Received: 11/24/99

% Moisture: decanted:(Y/N) N Date Extracted: 11/29/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/08/99

Injection Volume 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
85-01-8	Phenanthrene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW-MW-4

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912775

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SB2C6996.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: decanted:(Y/N) N Date Extracted: 11/29/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/08/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
85-01-8	Phenanthrene	10	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW-MW-7

Lab Name STL-BALTIMORE Contract:

Lab Code Case No.. SAS No.: SDG No.:

Matrix. (soil/water) WATER Lab Sample ID: 9912776

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SB2C6997.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture. decanted:(Y/N) N Date Extracted: 11/29/99

Concentrated Extract Volume. 1000 (uL) Date Analyzed: 12/08/99

Injection Volume 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
85-01-8	Phenanthrene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-MW-2

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912777

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SB2C6998.D

Level (low/med) LOW Date Received: 11/24/99

% Moisture decanted:(Y/N) N Date Extracted: 11/29/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/08/99

Injection Volume 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
85-01-8	Phenanthrene	10	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD BLANK

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 9912778

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SB2C6999.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: decanted:(Y/N) N Date Extracted: 11/29/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/08/99

Injection Volume 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
85-01-8	Phenanthrene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-RW-1

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912779

Sample wt/vol 1000 (g/ml) ML Lab File ID: SB2C7000.D

Level (low/med) LOW Date Received: 11/24/99

% Moisture: decanted:(Y/N) N Date Extracted: 11/29/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/08/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	3.7	J
85-01-8	Phenanthrene	2.0	J

040026

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-MW-5

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912780

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SB2C7001.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: decanted:(Y/N) N Date Extracted: 11/29/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/08/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
85-01-8	Phenanthrene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-MW-8

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9912781

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SB2C7002.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: decanted:(Y/N) N Date Extracted: 11/29/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/08/99

Injection Volume 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
85-01-8	Phenanthrene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP 1

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 9912782

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SB2C7003.D

Level: (low/med) LOW Date Received: 11/24/99

% Moisture: decanted:(Y/N) N Date Extracted: 11/29/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/08/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
85-01-8	Phenanthrene	10	U

MCHB-DE-HM

HAZARDOUS WASTE MANAGEMENT CONSULTATION #37-10565-95
79TH ARMY RESERVE COMMAND
PENNSYLVANIA ~~AND NEW JERSEY~~
2-6 APRIL 1995

I. FINDINGS.

Three categories result from the survey conducted: A) non federally owned transformers, B) federally owned non PCB transformers, and C) federally owned PCB transformers.

A. Non Federally Owned Transformers. This refers to the condition of the reserve center as 1) not having a transformer on site, 2) having a transformer or more that are owned by the local utility, or 3) being located on leased property.

1. The 79th ARCOM Centers without transformers.

Babylon Campus USARC, Horsham, PA
Northhampton City Memorial USARC, Stockertown, PA
Woodlawn USARC, Willow Grove, PA
Northeast Philadelphia USARC, Wingohocking, PA
Monroe County Memorial USARC, Tobyhanna, PA

2. The 79th ARCOM Centers with local utility owned transformers.

CH(CPT) Sabalis Memorial USARC, Ashley, PA
Wilson-Kramer USARC, Bethlehem, PA
Bloomsberg USARC, Bloomsburg, PA
Adams County Memorial USARC, Gettysburg, PA
Harrisburg AFRC, Harrisburg, PA
Landcaster USARC, Landcaster, PA
Mifflin County USARC, Lewistown, PA
Reading USARC, Reading, PA
Robert E. Roeder USARC, Schuykill Haven, PA
CSM S.P. Serrenti Memorial USARC, Scranton, PA
Lenkalis USARC, West Hazleton, PA
AMSA#32, Wilkes-Barre, PA
Lycoming Memorial USARC, Williamsport, PA
York Memorial USARC, York, PA
SGT Paul Beck AFRC, Bellefonte Boro, PA

James W. Reese USARC, Chester, PA
Huntingdon USARC, Huntingdon, PA
Clinton County USARC, Lock Haven, PA
AMSA#112, Lock Haven, PA
Centre County Memorial USARC, State College, PA
Wilkes-Barre USARC, Wiles-Barre, PA
Aviation Support FAC#28, Willow Grove, PA
AMSA#84, Marcus Hook, PA
Lewisburg USARC, Lewisburg, PA
Ray S. Musselmen USARC, Norristown, PA
North Penn USARC, Worchester, PA

3. The 79th ARCOM Centers on leased facilities.
Downingtown USARC, Downingtown, PA
Folsom USARC, Folsom, PA
Horsham Corporative USARC, Horsham, PA
Quakertown USARC, Quakertown, PA
AMSA#23, Willow Grove, PA
MG John W. Wurts Memorial USARC, Willow Grove, PA
ECS#24, Annville, PA
CO C, 6/68 Armor, Annville, PA
SGT Marlin L. Gahres USARC, Annville, PA
1079th USAR Garrison, Annville, PA
Hot Mission, Annville, PA
Regional Training Site-Maintenance, Annville, PA

B. **Federally Owned Non PCB Transformers.** Dry transformers or those containing only mineral oil.

1. The 79th ARCOM Centers with dry transformers.
CH(CPT) Sabalis Memorial USARC, Ashley, PA
Two dry transformers are located in the furnace room. One of the concrete pads is cracked.

2. The 79th ARCOM Centers with mineral oil transformers.
a. Germantown USARC, Germantown, PA
Three stored mineral oil transformers awaiting collection by DRMO and one operational, pad mounted transformer located in the rear of the building.

b. New Cumberland USARC, New Cumberland, PA
One pad mounted transformer.

C. **Federally Owned PCB Transformers.**
AMSA#118, Greencastle, PA

Edgemont USARC and AMSA#31G, Edgemont, PA
North Penn USARC, Worchester, PA
Horsham Memorial USARC, Horsham, PA
Philadelphia Memorial AFRC, Philadelphia, PA
Bristol Veterans USARC, Bristol, PA
Lewisburg USARC, Lewisburg, PA

VII. DISCUSSION.

A. The Toxic Substances Control Act (TSCA) states that the particular PCB transformer owner is the responsible party in an incident (Appendix C), thus exempting all leased facilities and those utilizing utility owned equipment from liability unless a contractual agreement or negligence is involved. Therefore, only the federally owned polychlorinated biphenyls (PCBs) transformers cause concern. 32 transformers located among seven Reserve Centers fall into this catagory. Each are explained in the following paragraphs.

1. Greencastle, PA

The Center is supported by two large pad mounted transformers. There is some PCB ground contamination. The transformers are to be removed and the site remediated under a separate project during the second quarter of FY96. See Appendix D for a copy of the scope of work.

2. Edgemont, PA

The Center is supported by 19 transformers: 1 pad mounted and 18 pole mounted, three of which are deenergized. The Hevi-Duty Electric pad mounted transformer, serial #GM204699, model #585731T00, manufactured in Goldsboro, NC contains PCBs. The point of contact is John Dockerty at commerical: (919) 590-3211. This transformer should be removed and replaced. The three denergized pole mounted transformers should also be removed. They have not been used of several years. The other 15 pole mounted transformers should be sampled and handled according to Title 40 CFR 761. Cost estimates need to be determined prior to testing.

3. Worchester, PA

The Center is supported by eight transformers: one pad mounted and seven pole mounted. The General Electric pad mounted tranformer contains 780 gallons of Pyranol and should be removed and replaced. The other seven pole mounted transformers should be sampled and handled according to Title 40 CFR 761. Cost estimates need to be determined prior to testing.

4. Horsham, PA

The Center is supported by one large General Electric (GE) pad mounted transformer manufactured in Pittseld, Mass., serial #D276096. It appears to be original to the building and as GE does not operate the Pittseld plant, they suspect it to be PCB; therefore, the transformer should be removed and replaced.

5. Philadelphia, PA

The Center is supported by two large pad mounted transformers. It has not been determined if the content of the dielectrid fluid contains greater then 500 ppm PCB. The manufacturer's information is located inside the unit and without turning off the transformer this information could not be obtained. Research the manufacturer prior to commensing with the sampling.

6. Bristol, PA

The Center is supported by one pad mounted transformer. The manufacturer information is still being tracked down.

7. Lewisburg, PA

The Center is is supported by a transformer that is owned by the utility. There may be another on the property owned by the Center.

- WATER/ WASTEWATER
- SOILS / SOLIDS
- AIR / GASES

Wright Lab Services, Inc.

- ATOMIC ABSORPTION
- GAS CHROMATOGRAPHY
- WET CHEMISTRY

Sample # 10963-1

ATTN: Facility Engineers
Fort Indiantown Gap
Department of the Army DEH
Attn: AFKA-ZQ-DE-E
Annville PA 170035011

July 14, 1989

LAB ANALYSIS REPORT

Job Name	: Fort Indiantown Gap	Customer PO#	: DAKF2789P0930
Job Number	: F5673-AK-MC	Date Sampled	: 06/29/89
Location	: KM 9180-01	Date Received	: 06/29/89
Sample State	: Oil	Date Completed	: 07/12/89
Collector	: Clt	Discard Date	: 07/27/89

TEST/PARAMETER	RESULT	UNITS	DETECTION LIMIT
GAS CHROMATOGRAPH ANALYSES			
PCBs in Oil			
PCB-1242	N.D.	mg/kg	5
PCB-1254	N.D.	mg/kg	5
PCB-1221	N.D.	mg/kg	5
PCB-1232	N.D.	mg/kg	5
PCB-1248	N.D.	mg/kg	5
PCB-1260	N.D.	mg/kg	5
PCB-1016	N.D.	mg/kg	5

N.D. - Not Detected

Respectfully Submitted,
WRIGHT LAB SERVICES

Ian Milnes
Laboratory Manager

- WATER/ WASTEWATER
- SOILS / SOLIDS
- AIR / GASES
- ATOMIC ABSORPTION
- GAS CHROMATOGRAPHY
- WET CHEMISTRY

Wright Lab Services, Inc.

ATTN: Facility Engineers
Fort Indiantown Gap
Department of the Army DEH
Attn: AFKA-ZQ-DE-E
Annville PA 170035011

July 14, 1989

LAB ANALYSIS REPORT

Job Name	: Fort Indiantown Gap	Customer PO#	: DAKF2789P0930
Job Number	: F5673-AK-MC	Date Sampled	: 06/29/89
Location	: KM 9180-02	Date Received	: 06/29/89
Sample State	: Oil	Date Completed	: 07/13/89
Collector	: Clt	Discard Date	: 07/28/89

TEST/PARAMETER	RESULT	UNITS	DETECTION LIMIT
GAS CHROMATOGRAPH ANALYSES			
PCBs in Oil			
PCB-1242	N.D.	mg/kg	5
PCB-1254	N.D.	mg/kg	5
PCB-1221	N.D.	mg/kg	5
PCB-1232	N.D.	mg/kg	5
PCB-1248	N.D.	mg/kg	5
PCB-1260	N.D.	mg/kg	5
PCB-1016	N.D.	mg/kg	5

N.D. - Not Detected

Respectfully Submitted,
WRIGHT LAB SERVICES

Ian Milnes
Laboratory Manager

- Water/ Wastewater
- Soils /Solids
- Air /Gases
- Atomic Absorption
- Gas Chromatography
- Wet Chemistry

Wright Lab Services, Inc.

Sample # 10963-3

ATTN: Facility Engineers
Fort Indiantown Gap
Department of the Army DEH
Attn: AFKA-ZQ-DE-E
Annville PA 170035011

July 14, 1989

LAB ANALYSIS REPORT

Job Name	: Fort Indiantown Gap	Customer PO#	: DAKF2799P0930
Job Number	: F5673-AK-MC	Date Sampled	: 06/29/89
Location	: KM 9180-03	Date Received	: 06/29/89
Sample State	: Oil	Date Completed	: 07/13/89
Collector	: Clt	Discard Date	: 07/28/89

TEST/PARAMETER	RESULT	UNITS	DETECTION LIMIT
GAS CHROMATOGRAPH ANALYSES			
PCBs in Oil			
PCB-1242	N.D.	mg/kg	5
PCB-1254	N.D.	mg/kg	5
PCB-1221	N.D.	mg/kg	5
PCB-1232	N.D.	mg/kg	5
PCB-1248	N.D.	mg/kg	5
PCB-1260	N.D.	mg/kg	5
PCB-1016	N.D.	mg/kg	5

N.D. - Not Detected

Respectfully Submitted,
WRIGHT LAB SERVICES

Ian Milnes
Laboratory Manager

34 Dogwood Lane Middletown, Pa. 17057 (717) 944-5541

EXIDE CORPORATION

December 10, 1992

Paragon Environmental Group, Inc.
131 Wallace Ave.
Downingtown, PA 19335
Attn: Lisa

Dear Lisa:

Exide Corporation has received ballistic sand (12/01/92) and lead shot (11/25/92) from the U. S. Army Reserve (LO-92-120) for the account of Paragon Environmental. This material was received for reclamation.

The Exide facility is Part B permitted. The permit has been issued to:

General Battery Corporation
Spring Valley Road & Nolan Street
Reading, PA 19605

EPA I. D. NO. PAD990753089

This facility operates in compliance with applicable federal, state and local laws and regulations.

The corresponding weight tickets follow.

If you have any questions, I can be reached at (215) 378-0814.

Heidi Heffner
Metals Clerk

HH/hh

645 Penn Street Reading, PA 19601
P.O. Box 14205 Reading, PA 19612-4205
215/378-0500 TWX 510/651-5288 Telecopier 215/378-0616

NOV 3 0 1992

EXIDE BATTERY CORPORATION

TICKET: 38475
IN DATE: 11/25/92
OUT DATE: 11/25/92
IN TIME: 13:17
OUT TIME: 14:31

TRUCK COMPANY NAME: R.F. Trucking Paragon

VEHICLE ID: 4514 PRODUCT: LS

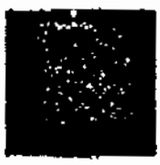
GROSS:	55280 LBS	TRAILER:	9020 LBS
		DRIVES:	11750 LBS
TARE:	28600 LBS	STEERS:	7830 LBS
NET:	26680 LBS		

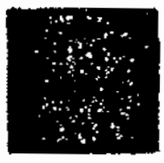
WEIGHMASTER: T6699

SEAL NUMBER: 10427 Po# 1233

OWNER/AGENT/CONSIGNEE: R.F. Trucking Agency Prop. Sale

SIGN Randy DRIVER: Charles Ramos





DEC 11 2 1992

EXIDE BATTERY CORPORATION

TICKET: 38597
IN DATE: 12/01/92
OUT DATE: 12/01/92
IN TIME: 09:31
OUT TIME: 11:02

TRUCK COMPANY NAME: R.F. Tahy Paragon

VEHICLE ID: 4514 PRODUCT: ~~XS~~ Ballistic Sand

GROSS:	53050 LBS	TRAILER:	8920 LBS
TARE:	28690 LBS	DRIVES:	12170 LBS
NET:	24360 LBS	STEERS:	7600 LBS

WEIGHMASTER: 16699

SEAL NUMBER: 10427

Post 1234

OWNER/AGENT/CONSIGNEE: U.S. Army Reserve, Austin / Sm

SIGN Rayn

DRIVER: L. Davis

EWI
an Allwaste Company
P.O. BOX # 1112, HONEY BROOK, PA 19344
(215) 942-2381 • Fax # (215) 942-4921

Sold by DRAGUE GTT | Date 11-20-92

Account # 340.059

Account Name DRAGON ENVIRONMENTAL

Job Location 115 ARMY AVE. PHILA

☐ cash ☐ check ☑ charge

☐ deliver ☐ switch/dump ☐ dump and return

☐ relocate ☑ dump/remove

☐ 12 ☐ 20 ☑ 30 ☐ 40 ☐ 50

☑ open top ☐ comp ☐ asb ☐ storage

☐ recycle

6779

Pull 200.00

Dumping 303.60

Handling

Received by | # 003168

381716

CHESTER COUNTY SOLID WASTE AUTHORITY

LANCHESTER LANDFILL

P.O. BOX 476 • HONEYBROOK, PENNSYLVANIA 19344 • (717) 354-4351 • (215) 273-3771

Account EWI BLDG TRK 10155
Fleet # Tag #
Loop Tag 6779
Transaction # 89830 Site LF

Transtn Type = Disposal with Sticker
Payment Type = Charge
Vehicle Type = Rolloff (20-29cy)
Origin Type = MUNICIPAL SOLID WASTE

	In	Out	
Date	11-20-92	11-20-92	BS IN
Time	13:50	14:12	22
Scale Op	CAD	NIP	
	lbs	tons	
Gross Wt	42,940	21.470	S12
Tare Wt	32,820	16.410	S13
Net Wt	10,120	5.060	TN

E.W.I.

P.O. BOX # 1112, HONEY BROOK, PA 19344
(215) 942-2381 • Fax # (215) 942-4921

Sold by: DUMPSTER GUY | Date: 11-9-92

Account #: 840-1959

Account Name: HARCON ENVIRONMENTAL

Job Location: MAIN AVENUE WISSINOMING

☐ cash ☐ check ☐ charge

☐ deliver ☐ switch/dump ☐ dump and return

☐ relocate ☐ dump/remove

☐ 12 ☐ 20 ☐ 30 ☐ 40 ☐ 50

☐ open top ☐ comp ☐ asb ☐ storage

☐ recycle

CTS FOR GUY

Pull 200.00

Dumping 301.80

Handling

Received by: [signature] 001856

Ticket : 825412 11/09/92 I: 12:05 pm
Customer: E.W.I.
Account : 9003823 LMS# 92 O: 12:15 pm
Truck : 677
Philadelphia County
Roll-Off
Checker : DOUGLAS BAKER
Gr: 21.54 Scale 1
Tare: 16.51 Scale 1 Net: 5.03 tn
Actual: 30.00

Volume		Contents
5.03	TN	DEMOLITION

HAVE A NICE DAY!

EWI
an Allwaste Company
P.O. BOX # 1112, HONEY BROOK, PA 19344
(215) 942-2381 • Fax # (215) 942-4921

Sold by Toto (AOCon) Date 11-27-92

Account # 840-1999

Account Name Paragon Environmental

Job Location 500 W 4th St. Chester

☐ cash ☐ check ☑ charge

☐ deliver ☐ switch/dump ☐ dump and return

☐ relocate ☑ dump/remove

☐ 12 ☐ 20 ☑ 30 ☐ 40 ☐ 50

☑ open top ☐ comp ☐ asb ☐ storage

☐ recycle

Pull 200.00

Dumping 227.40

Handling

Received by # 000902

382561

CHESTER COUNTY SOLID WASTE AUTHORITY

LANCHESTER LANDFILL

P.O. BOX 476 • HONEYBROOK, PENNSYLVANIA 19344 • (717) 354-4351 • (215) 273-3771

Account EWI BLDS TRK 10155
Fleet # Tag #
Loop Tag 8162
Transaction # 90674 Site LF

Transtn Type = Disposal with Sticker
Payment Type = Charge
Vehicle Type = Rolloff (30-39cy)
Origin Type = MUNICIPAL SOLID WASTE

	In	Out	
Date	11-27-92	11-27-92	B3 IN
Time	12:21	12:35	14
Scale Op	WS	WS	
	lbs	tons	
Gross Wt	41,000	20.500	S12
Tare Wt	33,420	16.710	S13
Net Wt	7,580	3.790	-TN

EWI
An Allwaste Company
P.O. BOX # 1112, HONEY BROOK, PA 19344
(215) 942-2381 • Fax # (215) 942-4921

Sold by: Jim Collins 671 | Date: 11/24/92

Account #: 840-1999

Account Name: Schuylkill Environmental

Job Location: 5001 Vine St Landfill

☑ cash ☐ check ☒ charge

☐ deliver ☐ switch/dump ☒ dump and return

☐ relocate ☐ dump/remove

☐ 12 ☐ 20 ☒ 30 ☐ 40 ☐ 50

☒ open top ☐ comp ☐ asb ☐ storage

☐ recycle

PO [illegible]

Pull	200.00
Dumping	371.40
Handling	

Received by: [signature] # 001632

Ticket : A64811 11/24/92 I: 12:53
Customer: EASTERN WASTE INDUSTRIES IN
Account : 0000240 LMS# 24 O: 01:02
Truck : 671
PHILADELPHIA COUNTY
Checker : CMM
Gr: 22.71 Scale 1
Tare: 16.52 Scale 2 Net: 6.19
Capacity: 40.00

Volume Contents

6.19 TIN DEMO

Have a good day!

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

August 1, 2002

Southeast Regional Office

610-832-5949
Fax 610-832-6143

Ms Nancy Flaherty
USACE, Baltimore District
Engineering Division- HTRW Branch
10 South Howard Street Room 10,000
Baltimore, MD 21201

Re: Storage Tank Program
Remedial Action Completion Report
Germantown United States Army Reserve Center
Facility ID 51-40712
5200 Wissahickon Avenue
Philadelphia, Pennsylvania

Dear Ms. Flaherty:

The Department of Environmental Protection has received and completed its review of the Remedial Action Completion Report for the Germantown United States Army Reserve Center, dated May 21, 2002. E.A. Engineering, Science and Technology prepared this report for the United States Army Corp of Engineers.

Based on this information contained in the report and the previous reports, the Department concurs with the findings and recommendation that no additional investigation or remedial action is required.

The onsite monitoring wells should be properly abandoned following the Department's Well Abandonment guidelines (see attachments) unless you are planning to use these monitoring wells for continued ground water monitoring purposes. Should these wells remain, they should be capped and locked, and should be maintained to prevent infiltration of surface runoff. The Department requests written notification of the well abandonment details to complete the case file for this site.

If you have any questions, please call me at 610-832-6172. Thank you.

Sincerely,

Bruce A. McClain

Bruce A. McClain, P.G.
Licensed Professional Geologist
Environmental Cleanup

cc: Mr. Sinding
Ms. Brown
Mr. Day-Lewis
Philadelphia Health Department
Ms. Borka
Ms. Deloatch
Mr. Pontier
Ms. Stringos-Walker
Ms. Sullivan
Re 30 (GJE02)213-6

MAINTENANCE ALLLOCATION CONCEPT

NOTE

This Maintenance Allocation Concept is provided in lieu of a Maintenance Allocation Chart (MAC).

The Asphalt Mixing Plant (AMP) is being bought using a streamlined acquisition strategy. This strategy includes a tailored support concept that makes maximum use of existing commercial support. All maintenance functions will be performed by existing Army organic maintenance using common tools and Test Measurement and Diagnostic Equipment (TMDE).
If repair or some other maintenance function can not be performed using the existing organic maintenance system, the commercial vendor may be contacted and the required assistance can be obtained/purchased by the owning unit. Each vendor section of the maintenance manual starts with a title page that gives the name, address, and phone number of the applicable vendor. If the owning unit is having trouble determining the applicable vendor, WRT Equip. Ltd should be contacted. WRT is the manufacturer of the complete AMP. WRT can be contacted at (306) 244-0423. WRT's address is;

WRT Equipment Ltd.
818 43rd Street East
Saskatoon, Saskatchewan
Canada S7k 3V1

Additional assistance can be obtained from the U.S. Army Tank Auto Command, Maintenance Engineering Division. To obtain information from the Tank-Auto Command use the following address and phone number;

U.S. Army Tank-Auto Command
ATTN: AMSTA-MVC
Warren, Mi 48397-5000
(810) 574-7439

ASPHALT MIXING PLANT
STORAGE PROCEDURES

SURGE BIN

Grease telescoping cylinders
Grease air cylinders
Grease hydraulic lift cylinders on conveyor
Clean boot of hot mix conveyor
Batcher gate to open position
Discharge gate to open position
Drop out gate closed

ALL MACHINES

Lubricate screw jacks if required

DRUM MIXER

Close fuel valves
Run drum mixer until empty
Secure propane tank

BAGHOUSE

Remove drain plug from exhaust fan
Blow dust from baghouse
Close damper
Close exhaust shutter

FOUR BIN FEEDER

Empty all four bins
Grease hydraulic cylinders

GENERAL

Secure plant area
Lock up tool boxes
Lock up overhead hoist
Remove fire extinguishers

CONTROL VAN

ALL breakers to "OFF"
Lock control van

HYDRAULIC POWER PACK

Store in secure location (bolt onto storage location on control van)

GENERATORS

Complete storage PMCS

FEED CONVEYOR

Grease conveyor lift cylinder

ASPHALT TANKER

Close & secure manhole cover
Divert valve in divert position

DEDRUMMER/MELTER

Close doors to melter tank
Secure opening to fuel tank
Secure drum rotator
Close fuel valves at tank

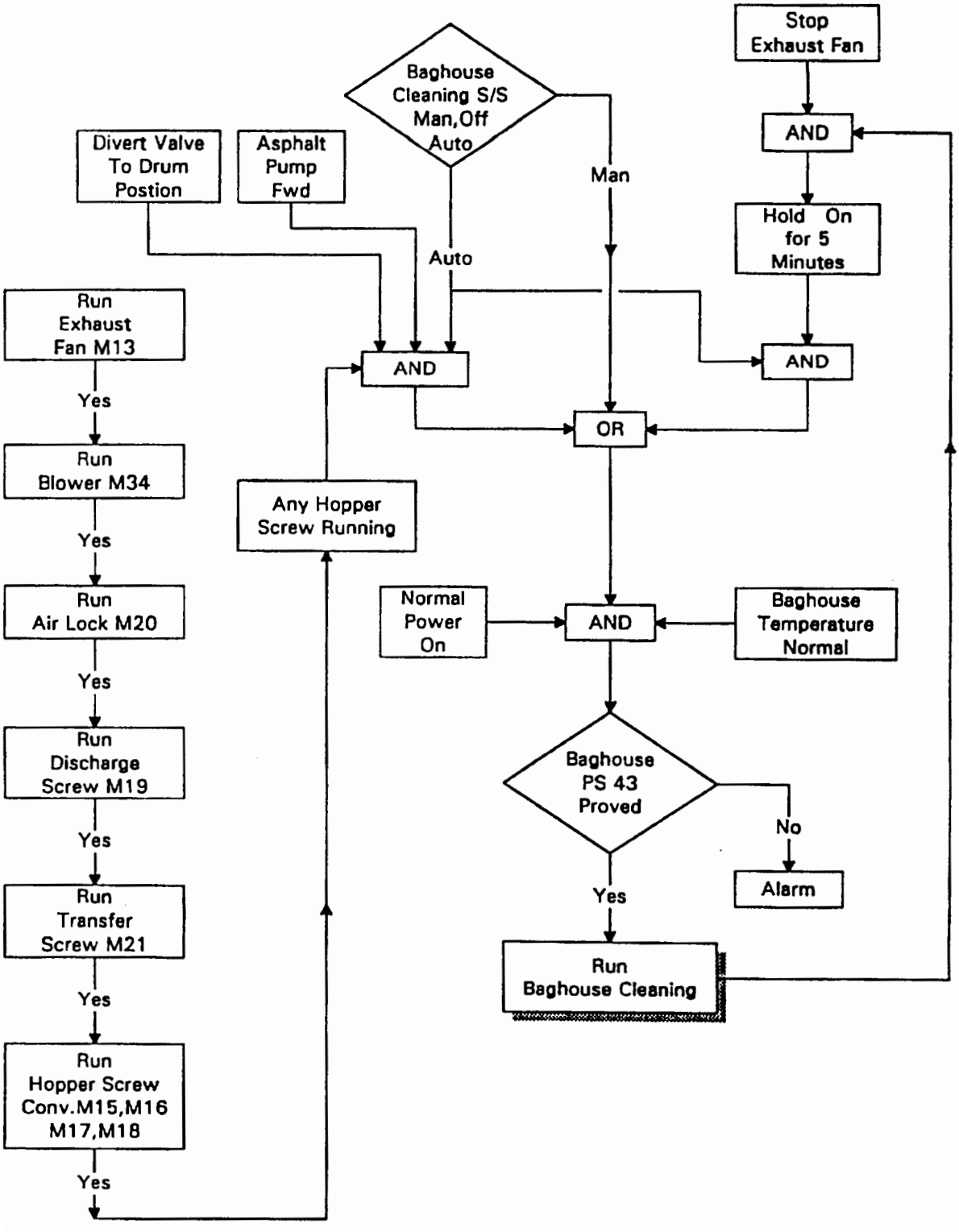


Figure 4-4. Baghouse

4-7. Baghouse

Problem	Cause	Solution/Reference
Motor tripping on auger	Auger overloaded	
	Product not clearing from system	
System not clearing	Overload of dust	
	Blower not operating	
	Air lock not running	
	Fines blower line from airlock to drum mixer plugged	
Bags not cleaning	Select AUTO or baghouse clean	
	Air compressor not operating	
	Pulse system not operating	
	Air pressure too low on cleaning	
Differential pressure high	Bags dirty	
	Exhaust air flow too high	
	Bags wet, caked or coated	
Fire shutter not operating	Air compressor OFF	
	Low air pressure	
	Solenoid valve failed	
	Shutter door jammed	
Baghouse temperature	Reads high	

BADGES, MEDALS (cont'd)

SOUTHAMPTON
JKA Specialties (Advertising Buttons; Mfr.) 609-859-2090

PENNSYLVANIA

ALLENTOWN
■ **WAITZ CORP.....610-437-5409**
1118 Union Blvd., PA 18109-1913 (Plastic, Metal, Laminated, Custom To Specs.; Mfr., Dist.)
AMBLER
Horn Badge Co.....215-653-0123
(Advertising & Identification Badges; Mfr.)
COLUMBIA
Art Crafters Printers (Mfr.) 717-684-0714
CONSHOHOCKEN
Montco Graphics, Inc. (Buttons; Mfr.) 610-825-2525
DUNMORE
Brucelli Advertising Co., Inc. (Dist.) 570-344-6623
EPHRATA
Garden Spot Ribbon & Awards (Mfr.) 717-721-6160
FOLSOM
Sign Concepts, Inc. (A.D.A. Compliance Signs & Plaques, Nameplates, Decals, P.O.P. Displays, Banners, Labels, Vinyl Lettering; Mfr., Dist.; Logo & Graphic Design, Photo Reproductions, Heat Transfer Printing; Svc.) 610-586-7070
HARRISBURG
Biehl Advertising Co.....717-566-8642
(Dist.: Colonial Mint, Nupac, American Badge)
Deb Kay Promotional Advertising Co., Inc., The.....717-561-2600
(Mfr.)
Harrisburg Awards, Inc. (Dist.) 717-232-9188
Marco (Badges; Dist.) 717-545-1060
Mohawk Arts (Dist.) 717-652-3276
HATBORO
■ **KEYSTONE PRINTING SERVICES, INC. 888-703-1586**
445 Jacksonville Rd., PA 19040-4605 (Plastic Or Metal; Mfr.; Screen Printing, Engraving)
HAVERTOWN
Presidential Premiums 610-449-7460
(Logos, Name Tags, Plastic & Metal Buttons; Dist.)
LANCASTER
Weinstock Conestoga, Inc.....717-397-7441
(Brass & Plastic Name Badges; Mfr.)
LANGHORNE
Jet Specialties Co.....215-757-8788
(Buttons; Dist.: Wearables, Hats, Shirts, Jackets)
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Gillespie, A. J. Awards (Mfr.) 215-945-3619
PALMERTON
Storage Unlimited (Metal; Mfr.) 610-824-4966
PHILADELPHIA
Center City Engraving & Awards, Inc.....215-731-0200
(Engraved Badges; Mfr.)
Foster Trophy & Awards Co. (Dist.) 215-236-1155
Lasermation, Inc.....800-523-2759
2629 N. 15th St., R, PA 19132 (Custom & Standard Plastic, Wood, Metal; Mfr., Dist.; Laser Engraving, Personalizing, Barcoding, Chemical Etching, Mechanical Engraving, Screen & Dye Sublimation Printing)
■ **PLASTIC MANUFACTURERS, INC.....888-467-3400**
3510 Scotts Lane, P.O. Box 5677, PA 19129-0677 (Mfr.; SEE OUR AD IN THE COMPANY PROFILE SECTION)
Fax: 215-438-5560
■ **QUINT CO.....800-821-4805**
3725 Castor Ave., PA 19124 (Nameplates, Brass Tags & Stencils; Dist.)
Fax: 215-537-1429
Sign Solutions 215-574-8100
514 N. Second St., PA 19123 (Engraved, Cast, Etched, Die-Struck, Cloisonne & Enamel)
Spikes (Die-Cast, Die-Struck, Engraved, Cloissone, Enamel, Metals. Pins, Badges; Mfr., Dist.) 215-574-8100
PROSPECT PARK
Philadelphia Regalia Co. (Mfr.) 610-237-9757
READING
Keystone Badge Co. (Mfr.) 610-373-1179
REDLION
Rost Brothers, Inc.....717-244-9061
(Custom Engraved Badges; Mfr.)
ROCKLEDGE
Barben Insignia Co.....215-663-8787
(Police Uniform; Dist.: V.H. Blackinton)
ROSEMONT
Main Line Trophies, Inc.....610-525-4262
(Engraved, Imprinted & Identification Badges; Mfr.)
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■ **POST PRECISION CASTINGS, INC. 610-488-1011**
P.O. Box A-2, PA 19559 (Stainless Steel, Carbon, Nickel Base Investment Castings Or Finish Machine, Oz. To 300 Lbs., PED Certified; Mfr.; Complete Foundry, Rapid Prototyping)
WILKES BARRE
Martin, Robert H. Plastic Specialties 570-824-8490
(Achievement, Scholastic, Sports; Mfr.)
WILLOW GROVE
■ **PEERLESS PAPER SPECIALTY, INC. 800-470-9128**
340 N. York Rd., P...

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PENNSYLVANIA

CATASAUQUA
Air & Noise Products, Inc.....866-247-6647
(Enclosures, Metal Panel & Curtain Systems, Absorbers; Rep.)
EASTON
Molded Acoustical Products of Easton, Inc. 610-253-7135
(Mfr.)
TAMAQUA
■ **REMALY MANUFACTURING CO., INC. 888-218-2260**
211 Cedar St., PA 18252 (Custom Perforated & Fabricated, Galvanized, Steel, Aluminum; Mfr.; Built From Design Or Sketch, Custom CAD Drawing)
WIND GAP
■ **BRD NOISE & VIBRATION CONTROL, INC.....610-863-6300**
112 Fairview Ave., P.O. Box 127, PA 18091 (Noise Control Systems; Mfr., Dist., Rep.; Testing, Design, Installation, Turnkey, Problem Solving)

BAFFLES: BOILER

NEW JERSEY

ROBBINSVILLE
McNeil, Inc. (Refractory Materials; Dist., Repair) 973-482-3814
■ **MCNEIL, INC.....800-722-5538**
15-A Marlen Dr., NJ 08691 (Refractory Materials; Dist.; Repair; SEE OUR AD IN THE COMPANY PROFILE SECTION)
Fax: 609-890-1414
SEWELL
Kurth, Edward & Sons, Inc.....800-552-8853
220 Blackwood-Barnsboro Rd., NJ 08080 (Dist.)

PENNSYLVANIA

CATASAUQUA
■ **ALLENTOWN STEEL FABRICATING CO., INC.....800-529-3519**
260 Race St., PA 18032 (Custom Fabricated, Drilled Or CNC Cut In Carbon, Stainless Or Abrasive Steels, Short Or Long Runs; Mfr.; SEE OUR AD IN THE COMPANY PROFILE SECTION)
COATESVILLE
■ **BRANDYWINE VALLEY FABRICATORS, INC.....888-895-1105**
N. 11th Ave., P.O. Box 111-D, PA 19320-0111 (Structural Sheet & Plate, Pipe, Tube, Angles & Channels, Press Brakes; Mfr.; Steel Fabricating, Welding, Bending, Forming, Rolling, CNC & Conventional Machine Work, Flame Cutting Svc.)
KING OF PRUSSIA
Delval Equipment Corp. (Dist., Rep.) 610-275-3599
LEBANON
Delval Equipment Corp. (Dist., Rep.) 717-272-0229
NORRISTOWN
■ **DUFF CO.....610-275-4453**
201 E. Lafayette St., PA 19401-5012 (Dist.)

BAFFLES: ELECTRONIC

NEW JERSEY

RICHLAND
Richland Glass Co., Inc. (Mfr.) 856-691-1697

BAFFLES: FLOATING (See Pollution Control Equipment)

BAFFLES: LIGHT

PENNSYLVANIA

TAMAQUA
■ **REMALY MANUFACTURING CO., INC. 888-218-2260**
211 Cedar St., PA 18252 (Custom Perforated & Fabricated, Galvanized, Steel, Aluminum; Mfr.; Built From Design Or Sketch, Custom CAD Drawing)

BAG PACKAGING EQUIPMENT (See Machinery: Bag Packaging)

BAGHOUSES

NEW JERSEY

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■ **PROCESS SYSTEMS & COMPONENTS, INC.....800-840-4886**
72-78 Washington St., P.O. Box 761, NJ 08060 (Filter Elements For All Applications; Dist., Rep., Svc.)
www.processsys.com

PENNSYLVANIA

ABINGTON
■ **WYNN ENVIRONMENTAL SALES CO. 888-621-2004**
P.O. Box 8, PA 19001 (Dust, Mist, Smoke, Smog, Fume Collection, Air Filtration, Pollution Systems, Centrifugal, Carbon, Down Draft, Cartridge Filters, Cyclones, Wet Scrubbers; Dist.: Aercology, Murphy-Rodgers, Smokemaster, WeldAir, Torit)
BROWNSTOWN
■ **DENTECH, INC.....717-656-0400**
208 E. Main St., P.O. Box 339, PA 17508 (Dust, Smoke, Mist & Fume Collection Systems; Mfr.: Torid; Design, Fabricating, Installation, Part & Filter Replacement, Sheet Metal, Structural, Welding)
CATASAUQUA
■ **ALLENTOWN STEEL FABRICATING CO., INC.....800-529-3519**
260 Race St., PA 18032 (Custom Fabricated To Specs., Carbon, Stainless Or Abrasive Steels; Mfr.; SEE OUR AD IN THE COMPANY PROFILE SECTION)
COLLEGEVILLE
■ **REES INDUSTRIAL, INC.....888-703-1585**
P.O. Box 26835, PA 19426 (Rigging, Millwrighting, Turnkey, Pipefitting, Metal & Skid Fabricating, Structural Steel, Plant Automation, Electrical, Mechanical, Instrumentation, Controls, Panels, Compressors, Conveyors, ASME Welding, Installation)
www.reescompanies.com
■ **THORTEX.....800-578-2772**
12 Iron Bridge Dr., PA 19426 (High Temperature, Anti-Corrosive, Protective Coatings; Dist.: Thortex®; Installation)
www.thortex.com
HARLEYSVILLE
■ **EFFECTIVE CONTROLS EAST 215-256-9530**
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JOHNSTOWN
■ **JWF INDUSTRIES.....814-539-6922**
84 Iron St., P.O. Box 1286, PA 15907 (Pipe Fabrications, Structural Steel Fabrication; Contract Manufacturing; Steel Processing & Service Center, Mechanical Contracting, CNC Machining, Cutting, Fabricating, Welding)
www.jwfi.com
MALVERN
■ **PEACE PRODUCTS CO. 800-292-4222**
143 Pennsylvania Ave., PA 19355-2417 (Poly, Plain & Printed, Wicketed, On Rolls, Lay-Flat Tubing, Ind. Liners & Covers, LDPE, Polypropylene, High-Density, Reclosable; Mfr.; Dist.: Minigrip; Sheeting, Slitting)
WAYNESBORO
Tri Fab, Inc.....717-762-3113
(Components, Weldments, Steel, Stainless Steel & Aluminum; Mfr., Custom Metal Fabrication, Design, Engineering, Metal Forming, Dust Collection, Duct Work, Installation, Svc.)
WILLIAMSPORT
Powerplant Technologies, Inc.....570-494-1683
(For Power Plant & Ind. Facility Requirements; Dist., Svc.)
YORK
■ **AIR DYNAMICS INDUSTRIAL SYSTEMS CORP. 717-854-4050**
300 N. Queen St., PA 17403 (Cartridge & Dust Collectors, Bin Vents, Turnkey Systems; Mfr.; Dist.: Donaldson, Torit, Batech, Airflow Systems, Max Air Systems)
■ **REES SERVICES, INC.....717-755-7337**
144 Roosevelt Ave., PA 17402 (Rigging, Millwrighting, Turnkey, Pipefitting, Metal & Skid Fabricating, Structural Steel, Plant Automation, Electrical, Mechanical, Instrumentation, Controls, Panels, Compressors, Conveyors, ASME Welding, Installation)

BAGS

DELAWARE

WILMINGTON
Winokur, Ben Bag Co. (Dist.) 302-655-0203

NEW JERSEY

EWING
Industrial Power Blasting (Dist.; Installation, Repair Of All Manufactured Dust Collectors, Svc. Contractor) 609-771-8368
HADDONFIELD
Office VAR, The 856-310-1092
(Paper, Plastic, Blister, Canvas, Cotton, Burlap, Sealing, Laminated, Anti-Static, Scented, Hot Stamped, P.O.P., FDA Approval, Janitorial, Advertising Specialties, Custom, Rolls; Dist.; Printing, Screening, Packaging Design, Fulfillment)
MOUNT HOLLY
■ **PROCESS SYSTEMS & COMPONENTS, INC.....800-840-4886**
72-78 Washington St., P.O. Box 761, NJ 08060 (Filter Elements For All Applications; Dist., Rep., Svc.: Sahara, Henderson Engineering, Motivair, StylAir)
www.processsys.com
RIVERTON

PCB MANAGEMENT PLAN

U.S. Army Reserve Centers
Edgemont, North Penn, Horsham
Germantown, Philadelphia, Bristol - Pennsylvania

Prepared for:

Army Corps of Engineers
GeoEnvironmental Branch
ATTN: CENAO-EN-G
803 Front Street
Norfolk, Virginia 23510-1096

Prepared by:

Bay Associates Environmental, Inc.
P.O. Box 21009
Baltimore, Maryland 21228
Phone: 1-800-801-0405

January 2003

BAY ASSOCIATES ENVIRONMENTAL, INC.

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ATTACHMENTS

1.0 PROGRAM OVERVIEW

The policy of the U.S. Army Corps of Engineers - Virginia (USACE-VA) is required to comply with all federal, state, Army, and local regulations pertaining to Polychlorinated Biphenyl (PCB) management. Compliance with environmental regulations will ensure that the USACE-VA conducts operations in a manner that protects human health and the environment. This management plan has been prepared to provide an overview of the regulatory requirements that govern the use and management of PCB-filled equipment, including generation, storage, handling, transportation, and disposal of PCB-wastes. This plan is developed according to guidelines and regulations set forth in the Code of Federal Regulations (CFR) 40 CFR Part 761, Pennsylvania Code 25 Pa Code 288 & 299, and the Army Hazardous Waste Sampling Instructions EM 200-1-3, Appendix D, Section D.2 – Transformer Sampling (February 1, 2001). See **Table 1.0 Federal/Pennsylvania Regulatory Matrix** on the following page.

This plan focuses on six distinct U.S. Army Reserve Centers in southeast Pennsylvania. These centers include 32 army-owned pad and/or pole mounted transformers. The centers, with corresponding type and number of transformers, are as follows:

- Edgemont USARC/AMSA
  2101 S. Delchester Road
  Edgemont, PA 19073
  Transformers: 15 pole/1 pad
- North Penn Memorial USARC
  1625 Berks Road
  Worcester, PA 19490
  Transformers: 7 pole/1 pad
- Horsham Memorial USARC
  936 Easton Road
  Horsham, PA 19044
  Transformers: 1 pad
- Bristol Veterans Memorial USARC
  2501 Ford Road
  Bristol, PA 19007
  Transformers: 4 pole
- Germantown Veterans Memorial USARC
  5200 Wissahickon Avenue
  Philadelphia, PA 19144
  Transformers: 1 pad
- Philadelphia Memorial AFRC
  2828-98 Woodhaven Road
  Philadelphia, PA 19154
  Transformers: 2 pad

T 1.0
Federal/Pennsylv a Regulatory Matrix

Environmental Regulations	Purpose	Approach/Basic Requirements	Implementing Agency	Applicability	Key Deadlines	Permitting/ Inspection Requirements	Data Management Requirements	Critical Coordination Needs	Penalties
FEDERAL Toxic Substances Control Act, U.S.C. 2601 *et seq.* 40 CFR Part 761	To regulate the use, storage, and disposal of PCBs	Establishes labeling, storage, and disposal requirements for PCB-containing material and equipment and establishes "cradle to grave" tracking of PCB waste	USEPA	PCB regulations address the use, storage, and disposal of PCB and PCB-contaminated materials and wastes. Facilities that have equipment and materials containing PCBs at a concentration of 50 ppm or greater must comply with these requirements.	6/4/90: PCB generators are required to have a Generator ID number and must use manifests for disposal of PCB waste. 7/1: Written annual document log must be completed for previous year and maintained at facility.	(1) Generators must notify EPA and have EPA identification number prior to PCB waste handling activities. (2) Quarterly PCB transformer inspections.	(1) Use and storage records (equipment lists). (2) Written annual documents log of disposition of PCBs and PCB items (3) Manifests and certificates of disposal (4) Quarterly inspection logs.	(1) Superfund and RCRA corrective action programs. (2) Land disposal restriction regulations. (3) Clean Water Act regulations.	None
PENNSYLVANIA Residual Waste Management Subchapter A 299.154 *Storage of PCB containing waste material*	To regulate the storage of PCB-containing waste.	PADEP establishes regulations for the storage of PCB-containing waste (4-50ppm PCBs).	PADEP	Applies to a person or municipality storing residual waste.	None.	None.	Maintain sufficient records to ensure compliance.	None.	(1) $500 per acre for applying residual waste to a non-permitted area. (2) $1,000 minimum for obstructing, hindering, threatening, or delaying an employee of the department from performance of duties, including inspections.
PENNSYLVANIA Residual Waste Management 288.191 - *Plan for Disposal of PCBs* & 288.301 - *PCBs*	To regulate solid waste containing PCBs.	PADEP establishes additional requirements for the disposal of PCB-containing waste and equipment.	PADEP	Applies to a person or municipality storing residual waste.	None.	None.	Maintain sufficient records to ensure compliance. For disposal of electrical transformers that previously contained 50-500 ppm PCBs, documentation must contain narrative description and any necessary plans/documents to show compliance with 288.301.	None.	None.

This plan addresses the management of the 32 transformers located at the aforementioned Army Reserve Centers, including:

- Equipment and Waste Characterization
- Equipment Use including Servicing and Retrofilling
- Inspections
- PCB Marking and Labeling
- Waste Storage, Transportation, and Disposal
- Cleanup of Old & New Spills
- Manifest and Land Disposal Restriction Forms
- Reporting and Recordkeeping
- Planning Level Cost Analysis for Upgrade/Replacement of Transformers.

This plan does not address other PCB articles and PCB-contaminated equipment, such as capacitors, circuit breakers, re-closers, voltage regulators, switches, and cables. The 99th RSC Environmental Specialist for the Pennsylvania region will implement this plan for each of the Army Reserve Centers.

To ensure that PCB-filled equipment and PCB wastes are properly managed, the United States Congress passed a law known as the Toxic Substances Control Act (TSCA). In Pennsylvania, TSCA is administered by the United States Environmental Protection Agency (USEPA). In Pennsylvania, the Pennsylvania Department of Environmental Protection (PADEP) has designated PCB waste as a solid waste containing PCBs if the concentration of PCBs is between 4 and 50 ppm. As such, the PCB-containing waste would be handled as a residual waste and may be disposed of at a residual waste disposal facility. In Pennsylvania, PCBs are not designated a hazardous waste. If the waste contains greater than 50 ppm PCBs, it is considered a TSCA regulated waste. As a TSCA regulated waste, PCBs must be managed from the point where the waste is first produced to the point where the waste is disposed of (i.e., "cradle to grave"). Waste generators are responsible for ensuring that the waste is properly handled throughout the cradle to grave process. The waste must be managed while it is on the generator's property. The generator must select a licensed transporter to haul the waste off-site and ensure that the waste is safely disposed of at a licensed commercial disposal facility.

2.0 EQUIPMENT AND WASTE CHARACTERIZATION

Oil-filled electrical equipment, e.g., transformers, switches, voltage regulators, capacitors, circuit breakers, re-closers, and cables, may contain PCBs in varying concentrations. Depending on the equipment type, location, and PCB concentration, certain environmental regulations apply. Equipment containing less than 500 parts per million (ppm) PCBs is generally not subject to PCB regulation while it is in service or while awaiting evaluation to determine whether it will be repaired and returned to service. Transformers and capacitors in service that contain 500 ppm or greater PCBs are subject to regulation. Certain environmental regulations also apply to waste materials containing PCBs, depending on the PCB concentration. Wastes containing less than 50 ppm PCBs, but greater than 4 ppm, are generally not subject to PCB regulation and in Pennsylvania are handled as a residual waste, which requires disposal in a certified residual waste disposal facility. Wastes containing 50 ppm or greater PCBs are subject to regulation and are classified as TSCA regulated wastes. Determining the proper classification of the waste is necessary to determine the proper handling and disposal method for the waste. This section reviews the different equipment and waste classifications; discusses the anti-dilution provision for wastes, and waste sampling/analysis; and provides a brief overview of recordkeeping requirements.

With certain limited exceptions, environmental regulations do not generally require electrical equipment containing PCBs to be removed from service and disposed of prior to the end of the equipment's useful life, except for PCB transformers located ***in or near commercial buildings.*** USAR Centers are not commercial buildings. However, while equipment containing 500 ppm or greater PCBs is in service, several requirements must be followed, including registration and inspection requirements for PCB transformers, emergency response requirements, and servicing requirements.

2.1 Characterization of Electrical Equipment

Oil-filled electrical equipment may be characterized by one of the following categories:

- Non-PCB Electrical Equipment - Contains less than 50 ppm PCBs.
- PCB-Contaminated Electrical Equipment – Contains, or must be assumed to contain, 50 ppm or greater PCBs, but less than 500 ppm PCBs.
- PCB Electrical Equipment – Contains, or must be assumed to contain, 500 ppm or greater PCBs.

These equipment classifications should not be applied to waste materials (see ***Section 2.2, Federal/State Characterization of Waste Materials,*** below).

On April 23-25, 2002, 30 of the 32 transformers were sampled to analyze the oils contained within each unit and to identify those transformers containing PCBs. Two pad-mounted units located at the Philadelphia Reserve Center were discovered to be dry-type transformers (containing no oils) and were therefore not sampled. The sampling program was conducted by Bay Associates Environmental, Inc. (BAE) located in Baltimore, Maryland, in accordance with sampling protocols and procedures outlined in a *Sampling and Analysis Plan (BAE, February 2002).*

Of the 30 transformers sampled by BAE, 26 of those are considered Non-PCB Electrical Equipment (less than 50 ppm PCBs), two are considered PCB-Contaminated (50-500 ppm PCBs), and two are considered PCB Electrical Equipment (greater than 500 ppm PCBs). Of

these last two PCB transformers, both are pad mounted with one located at North Penn and one located at Edgemont. The following table summarizes the analytical results of the identified as containing PCBs above laboratory reporting limits. Copies of laboratory analytical data with chain-of-custody, field trip reports, and photographs of each Army Reserve Center, are provided in Attachments 1 through 6 of this plan. Laboratory QA/QC data is provided in Attachment 7.

Table 2.0 Summary of Sampling Results

Site	Sample ID	Date Analyzed	Parameter	Result (ppb)	Result (ppm)	Reportable Limit (ppb)	Reportable Limit (ppm)
North Penn	NPPAD1	5/17/02	PCB-1254	710,000,000	710,000	7,900,000	7,900
North Penn	NPPOLE1c	5/13/02	PCB-1260	23,000	23	5,700	5.7
Edgemont	EPAD1	5/17/02	PCB-1254	820,000,000	820,000	80,000,000	80,000
Edgemont	EPOLE1a	5/13/02	PCB-1260	27,000	27	9,500	9.5
Edgemont	EPOLE1b	5/13/02	PCB-1260	7,900	7.9	8,500	8.5
Edgemont	EPOLE1c	5/13/02	PCB-1260	7,500	7.5	8,300	8.3
Edgemont	EPOLE4b	5/14/02	PCB-1260	15,000	15	7,600	7.6
Edgemont	EPOLE4c	5/14/02	PCB-1260	56,000	56	8,300	8.3
Edgemont	EPOLE3a	5/14/02	PCB-1260	42,000	42	9,100	9.1
Edgemont	EPOLE3b	5/14/02	PCB-1260	40,000	40	7,000	7.0
Edgemont	EPOLE3c	5/14/02	PCB-1260	43,000	43	9,200	9.2
Edgemont	EPOLE5a	5/14/02	PCB-1260	1,800	1.8	5,200	5.2
Edgemont	EPOLE5b	5/14/02	PCB-1260	9,100	9.1	6,000	6.0
Horsham	HPAD1	5/14/02	PCB-1260	81,000	81	8,400	8.4

Legend:

	50-500ppm
	>500 ppm - subject to regulation

ppb = parts per billion

ppm = parts per million

PCB equipment may be converted to PCB-contaminated or non-PCB equipment, and PCB-contaminated equipment may be converted to non-PCB equipment by draining, refilling, and/or otherwise servicing the equipment. This process is known as *retrofilling*. Refer to ***Section 3.5, Retrofilling and Reclassifying a PCB Transformer,*** for information on retrofilling procedures. Additional information on the management of in-service PCB electrical equipment is discussed in ***Section 4.0, Equipment Marking Requirements***; ***Section 5.0, Transformer Inspections***; and ***Section 13.0, Reporting and Recordkeeping***.

2.2 Federal/State Characterization of Waste Materials

Waste materials may be characterized by one of the following categories:

- PCB-Containing Waste – A solid waste that contains less than 50 ppm PCBs, but more than 4 ppm PCBs. In Pennsylvania, this is considered a "Residual Waste".
- PCB TSCA Regulated Waste – Contains, or must be assumed to contain, 50 ppm or greater PCBs.

Of the 14 transformers sampled by BAE that were identified to contain PCBs above laboratory reporting limits, only four contain greater than 50 ppm PCBs (one at North Penn, two at

Edgemont, and one at Horsham). The oils from these units are considered a PCB TSCA regulated waste and must be disposed of properly (see ***Section 12.0 Disposal***).

Of the remaining 10 transformers, nine contain PCBs between 4 ppm and 50 ppm. The oils from these units by definition must be handled and disposed of as a Pennsylvania residual waste, which requires disposal at a certified residual waste disposal facility.

2.3 Anti-Dilution Provision for PCB Wastes

TSCA regulations state that compliance with a specific PCB waste disposal or storage requirement may not be avoided by intentionally or unintentionally diluting the PCB waste. This provision is known as the ***Anti-Dilution Provision.*** Dilution includes reducing or shifting the PCB concentration from one material or environmental medium to another. The following are several examples.

If a leak occurs from a transformer containing greater than 50 ppm PCBs and the leaked PCB liquid contaminates the surrounding soil, then the soil must be disposed of as a PCB TSCA regulated waste (i.e., 50 ppm or greater PCBs), even though laboratory analysis may have revealed that the soil contains less than 50 ppm PCBs. The PCB concentration in the soil is considered to be equal to the PCB concentration in the leaked material as opposed to the resulting PCB concentration in the soil.

Non-PCB (less than 50 ppm PCBs) liquid or soil cannot be mixed with PCBs that are TSCA regulated waste liquid or soil (50 ppm or greater PCBs). If the two types of wastes are mixed, then the resulting mixture must be disposed of as a PCB TSCA regulated waste, even though the resulting concentration may be below 50 ppm PCBs.

Pads, rags, or absorbent materials that are used to clean up or contain a PCB spill must be disposed of as PCB TSCA regulated waste, even though the PCB contamination on the material is minimal, and sampling and analysis of the material reveals that the PCB concentration is less than 50 ppm PCBs.

2.4 Types of PCB Waste

PADEP regulations have classified waste material that contains 50 ppm or greater PCBs (or that must be managed as if the material contains 50 ppm or greater PCBs because of the Anti-Dilution Provision), as a PCB TSCA regulated waste. Wastes that may be classified as PCB TSCA regulated include, but are not limited to, dielectric fluids, contaminated solvents, used oil, heat transfer fluids, hydraulic fluids, dredge spoils, soil, and materials contaminated as a result of spills (cleanup materials).

Oil in or from electrical equipment whose PCB concentration is unknown (except circuit breakers, re-closers, and cables) must be assumed to contain between 50 and 500 ppm PCBs and is classified as a TSCA regulated waste. Circuit breakers, re-closers, and cables may be assumed to contain less than 50 ppm PCBs, unless the equipment nameplate indicates that the equipment was designed to contain concentrated PCBs, or unless there is a reason to believe that the equipment was filled with dielectric fluid containing 50 ppm or greater PCBs.

Oil-filled electrical equipment, except capacitors, that contain 50 ppm or greater PCBs, but less than 500 ppm PCBs, is no longer classified as PCB TSCA regulated once all free-flowing liquid has been drained from the equipment, the equipment rinsed, and free liquids have been removed utilizing oil absorbent materials. The drained liquid and any solvent used to flush the equipment must be managed as a PCB TSCA regulated waste.

2.5 Determining if Waste is TSCA Regulated

TSCA waste determinations are based on two methods: 1) knowledge of the waste or how the waste was generated (e.g., soil contaminated from a known PCB spill); and 2) sampling and laboratory analysis of the waste. The facility or site manager responsible for compliance is responsible for determining whether a waste is TSCA regulated. Contact the 99th RSC Environmental Specialist for the Pennsylvania region for guidance in performing waste determinations.

All transformers at each of the U.S. Army Reserve Centers, which are the focus of this management plan, have been sampled and tested for PCBs. Sampling was conducted by BAE on April 23-25, 2002. A trip report, Daily Construction Quality Control Report, analytical results with chain-of-custody, and photographs, for each site is included in Attachments 1 through 6. Of the 14 transformers sampled that indicated PCB concentrations in the oils greater than laboratory reportable limits, only two units are considered PCB transformers (greater than 500 ppm PCBs – Waste Code B006). One is located at the North Penn Army Reserve Center and one at Edgemont. Refer to Table 2.0 in Section 2.1 for a summary of the sampling results.

All wastes that have not been determined to be PCB-containing or non-TSCA regulated through the waste determination process discussed above, must be handled as a PCB TSCA regulated waste until analytical results are available to document that the waste is non-TSCA regulated or PCB-containing. For further information on handling known and unknown PCB TSCA regulated wastes, refer to ***Section 6.0, Waste labeling*** and ***Section 7.0, Waste Storage.***

2.6 Recordkeeping

Recordkeeping requirements differ for PCB equipment and PCB TSCA regulated waste. For PCB equipment, a record of the latest test results of all transformers and other electrical equipment must be maintained, either electronically or on hard copy, for at least 3 years after disposing of the equipment. For equipment at the Army Reserve Centers, the records are maintained by the facility. Maintenance records for all transformers must also be maintained.

For PCB TSCA regulated waste, all records of test results, PCB waste analyses, or other determinations must be maintained in a file at the facility or central location for at least 5 years from the date that the PCB waste was last shipped off-site for disposal. These documents should be compiled along with the corresponding manifest(s) that were used to ship the waste off-site (see ***Section 10.0, Manifests***). After 5 years, the facility must archive the files indefinitely.

Additional recordkeeping is required for PCB electrical equipment and spill cleanup events. Refer to ***Section 13.0, Reporting and Recordkeeping*** for additional information.

3.0 PCB EQUIPMENT USE

This section applies to the following transformer units that were determined through sampling to be PCB transformers (containing greater than 500 ppm PCBs):

- North Penn (NPPAD1)
- Edgemont (EPAD1)

With certain limited exceptions, environmental regulations do not require electrical equipment containing PCBs to be removed from service and disposed of prior to the end of the equipment's useful life, except for PCB transformers located in or near commercial buildings. USAR Centers are not commercial buildings. However, while equipment containing 500 ppm or greater PCBs is in service, several requirements must be followed, including registration and inspection requirements for PCB transformers, emergency response requirements, and servicing requirements. This section discusses specific use and servicing requirements for each type of equipment, and provides a brief overview of recordkeeping requirements. This section also discusses phase-out requirements for PCB transformers located in or near commercial buildings, which does not apply to USAR Centers.

3.1 Management of PCB Transformers

The two aforementioned transformers that contain 500 ppm or more PCBs, which are currently in use, must comply with the following requirements:

- They must be registered with the local fire department. The following information must be provided:
  - — The location of each PCB transformer. For indoor PCB transformers, the addresses of the buildings and the physical location of the PCB transformers on the building site must be provided. For outdoor PCB transformers, the location of the outdoor substation must be provided.
  - — The principal constituent of the dielectric fluid in the transformers (e.g., PCBs, mineral oil, or silicone oil).
  - — The name and telephone number of the 99th RSC Environmental Specialist for the Pennsylvania region to contact in the event of a fire involving the equipment.
- If in or near commercial buildings, they must be registered with the building owners within 30 days after discovery. For PCB transformers located inside commercial buildings, the Army must register the transformers with the building owner of record. For PCB transformers located near commercial buildings, the Army must register the transformers with all owners of buildings located within 100 feet (30 meters) of the PCB transformers. The following information must be provided:
  - — The specific locations of the PCB transformers.
  - — The principal constituent of the dielectric fluid in the transformers (e.g., PCBs, mineral oil, or silicone oil).
  - — The types of transformer installations (i.e., voltages).
- Combustible materials, including paints, solvents, plastics, paper, and wood must not be stored within a PCB transformer enclosure (i.e., a transformer vault or a partitioned area housing a transformer), within 15 feet (5 meters) of a transformer enclosure, or if the PCB transformer is not enclosed, within 15 feet (5 meters) of the PCB transformer.
- PCB transformers and transformer locations must be marked to indicate that the

equipment contains 500 ppm or greater PCBs. Marking of PCB-contaminated transformers is not required. Refer to ***Section 4.0, Equipment Marking Requirements*** for additional information on the marking of PCB transformers.

- A visual inspection of each PCB transformer must be performed at least once every 3 months. These inspections may be conducted during the periods of January-March, April-June, July-September, and October-December, as long as there is a minimum of 30 days between inspections. The visual inspection must include an investigation for leaks of dielectric fluid on or around the transformer, for the presence of the PCB mark on the transformer and transformer location, and for the presence of combustible materials stored nearby. The extent of the visual inspection will depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer. An inspection log is required to document PCB transformer inspections. Refer to ***Sector 5.0, PCB Transformer Inspections*** for additional information on inspection requirements. The facility or site manager responsible for compliance must ensure that all required inspections are conducted.
- The frequency of visual PCB transformer inspections can be reduced to at least once every 12 months if the transformer utilizes either of the following risk reduction measures:

  — The PCB transformer is equipped with impervious secondary containment with a capacity of at least 100 percent of the total dielectric fluid volume of all contained transformers.

  — The PCB transformer has been tested and determined to contain less than 60,000 ppm PCBs.

  These inspections may be conducted any time during the calendar year, as long as there is a minimum of 180 days between inspections.
- If a PCB transformer is found to be leaking, which results in any quantity of dielectric fluid running off or about to run off the external surface of the transformer, then the transformer must be repaired or replaced to eliminate the source of the leak. Any leaking material must be cleaned up and properly disposed of as PCB TSCA regulated waste. Cleanup of the released PCBs must be initiated no later than 48 hours after its discovery. Until appropriate action is completed, any active leak of PCBs must be contained to prevent exposure to humans or the environment, and the spill area must be inspected daily to verify containment of the leak. Trenches, dikes, buckets, and pans are examples of proper containment. Refer to ***Section 8.0, Cleanup of New Spills*** for additional spill cleanup information and ***Section 12.0, Disposal*** for additional PCB TSCA regulated waste disposal information.
- If a PCB transformer is involved in a fire-related incident, the facility emergency coordinator or prime contact must immediately report the incident to the 99th RSC Environmental Specialist for the Pennsylvania region. Field personnel who discover such an incident involving the PCB transformer in a street vault or in a customer building or premises should contact their supervisor, who will contact the 99th RSC Environmental Specialist for the Pennsylvania region. The 99th RSC Environmental Specialist for the Pennsylvania region will notify all local and government authorities, the National Response Center (NRC), outside emergency response contractors, and all internal company contacts. Information must be provided regarding the type of PCB transformer installation involved in the incident and the readily ascertainable cause of the incident.

The Army Reserve Center must also take measures as soon as possible to contain and control any potential releases of PCBs and incomplete combustion products into drains or open water. These measures include the following:

— The blocking of all drains in the vicinity of the transformer.
— The containment of water runoff.
— The control and treatment of any water used in cleanup operations.

3.2 Discovery of a New PCB Transformer

United States Environmental Protection Agency (USEPA) regulations required the removal of all known PCB transformers located in or near commercial buildings by no later than October 1, 1990. As noted earlier, USAR Centers are not commercial buildings. In the event that a mineral oil transformer, assumed to contain less than 500 ppm PCBs, is tested and found to contain 500 ppm or greater PCBs, then the transformer will be subject to all regulations applicable to PCB transformers. The following efforts must be initiated:

- Reporting of fire-related incidents involving the transformer is effective immediately after discovery.
- The PCB transformer and its means of access (doorway, fence, hallway) must be marked within 7 days after discovery. Refer to ***Section 4.0, Section Equipment Marking Requirements*** for additional information on the marking of PCB transformers.
- The PCB transformer must be registered in writing with the local fire department within 30 days after discovery.
- If the PCB transformer is located in or near a commercial building, the transformer must be registered with the owners of nearby buildings within 30 days after discovery. In addition, the transformer must be removed and replaced or retrofilled and reclassified to non-PCB or PCB-contaminated transformer status within 18 months after discovery.

The facility or site manager responsible for compliance must ensure that these activities are performed when necessary.

3.3 Servicing of PCB Transformers

Any servicing of PCB transformers that requires the removal of the transformer coil from the transformer casing is prohibited. Dielectric fluid from PCB (500 ppm or greater PCBs) transformers must not be mixed with or added to dielectric fluid from PCB-contaminated electrical equipment. If dielectric fluid containing 500 ppm or greater PCBs is mixed with dielectric fluid containing less than 500 ppm PCBs, the entire mixture must be considered to be greater than 500 ppm PCBs and must be disposed of as PCB TSCA regulated waste by incineration. Refer to ***Section 12.0, Disposal*** for additional information on the disposal of PCB TSCA regulated waste.

3.4 Retrofilling and Reclassifying a PCB Transformer

PCB transformers that are removed from service must either be retrofilled and reclassified as PCB-contaminated or non-PCB, placed in storage for disposal, or disposed of. PCB transformers that have been placed in storage for disposal or that have been removed from service cannot be reinstalled, except if the transformer has been retrofilled and reclassified as a PCB-contaminated or non-PCB transformer.

A PCB transformer may be converted to a PCB-contaminated or non-PCB transformer and a

PCB-contaminated transformer may be converted to a non-PCB transformer by draining and refilling with non-PCB dielectric fluid and/or otherwise servicing the transformer. Once a retrofilled transformer has been installed for reclassification purposes, the transformer must be put in service for a minimum of 3 months and then retested to determine the concentration of PCBs. "In service" means that the transformer is used electrically under loaded conditions that raise the temperature of the dielectric fluid to at least 122° F.

If the PCB concentration is less than 50 ppm, then the transformer can be reclassified as a non-PCB transformer. If the PCB concentration is 50 ppm or greater but less than 500 ppm, then the transformer can be reclassified as a PCB-contaminated transformer. If the PCB concentration remains at 500 ppm or greater, then the entire process must be repeated until the transformer is reclassified as a non-PCB or PCB-contaminated transformer, or the transformer must be removed from service. All PCBs removed from a transformer for reclassification purposes must be properly disposed of as PCB TSCA regulated waste. Refer to ***Section 12.0, Disposal*** for additional information on the disposal of PCB TSCA regulated waste.

If any of the Army Reserve Centers install a transformer for reclassification purposes, then they must maintain a file at the facility with the following information:

- Date of installation of the transformer.
- Type of transformer installed (i.e., radial or lower or higher network).
- PCB concentration at the time of installation (if known).
- Retrofill and reclassification schedule.

3.5 Recordkeeping

The following PCB transformer records must be maintained in a file at the facility where the unit is located:

- Copies of PCB transformer registration letters to the local fire department and nearby commercial building owners. The registered mail receipts for the registration letters must be stapled to the letters.
- Records of inspection and maintenance history for each PCB transformer.
- Records pertaining to the retrofilling and reclassification of PCB transformers (i.e., the date of installation, the type of transformer, the initial PCB concentration, and the retrofill and reclassification schedule).

These files must be made available for inspection upon request of USEPA and must be maintained for at least 3 years after disposing of the PCB equipment. The facility or site manager responsible for compliance must ensure that these records are maintained. Refer to ***Section 13.0, Reporting and Recordkeeping*** for additional information on recordkeeping requirements.

4.0 EQUIPMENT MARKING REQUIREMENTS

While transformers and capacitors containing 500 ppm or greater PCBs are in service, equipment and/or equipment locations must be marked with a specific identification label. This section describes the marking formats that must be used, and identifies the equipment and equipment locations that must be marked.

Marking requirements also exist for PCB containers, article containers, storage areas, and transport vehicles. These requirements are discussed in ***Section 3.0, PCB Equipment Use; Section 6.0, Waste Labeling; Section 7.0, Waste Storage;*** and ***Section 11.0, Transportation***.

4.1 Types of PCB Marks

Two formats may be used as the PCB mark. These marks are known in the environmental regulations as the large PCB mark (M_L) and the small PCB mark (M_S). A description of each mark is as follows:

- Large PCB Mark: The. M_L mark consists of letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life of the transformer (including storage for disposal). The mark is square and must measure at least 6 inches on each side. If the equipment is too small to accommodate this size, the mark may be reduced in size to a minimum of 2 inches on each side.
- Small PCB Mark: The M_S mark consists of letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life of the transformer (including storage for disposal). The mark is rectangular and measures 1 inch by 2 inches. If the equipment is too small to accommodate this size, the mark may be reduced in size to a minimum of 0.4 inch by 0.8 inch.

Figure 4.0 on the following page presents illustrations of the large and small PCB marks.

4.2 Marking Requirements for PCB Equipment & Equipment Locations

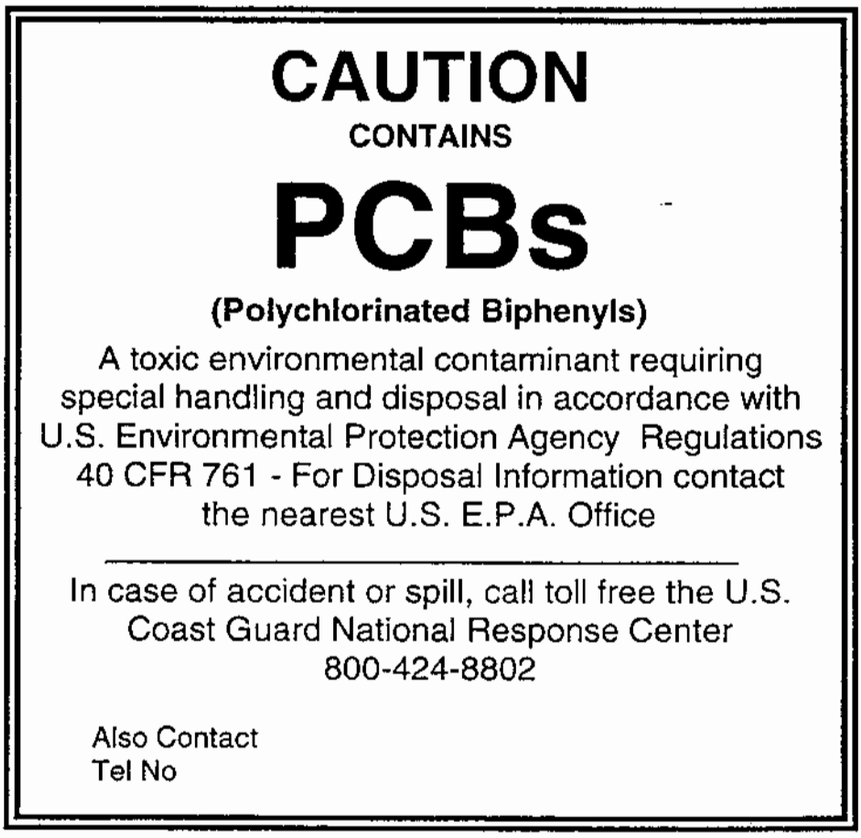
PCB equipment and equipment locations must be marked with the large PCB mark (M_L) in accordance with the following requirements:

- All PCB transformers (transformers containing 500 ppm or greater PCBs) must be marked. Marking of PCB-contaminated transformers (transformers containing between 50 and 500 ppm PCBs) is not required.
- The marks must remain on the PCB transformers while in service and after removed from service.
- All marks must be placed in a position on the exterior of the equipment so that the marks can be easily read by persons inspecting or servicing the equipment.
- If the PCB transformer is too small to accommodate the smallest allowable size of the M_L mark, then the M_S mark may be used.
- The vault door, machinery room door, fence, hallway, or means of access, other than grates and manhole covers, to a PCB transformer must be marked with the M_L mark. The mark must be placed in a location where it can be easily read by emergency response personnel fighting a fire involving the equipment.
- In the event that a mineral oil transformer, assumed to contain less than 500 ppm PCBs, is tested and found to contain 500 ppm or greater PCBs, then the PCB transformer and its means of access (doorway, fence, hallway) must be marked within 7 days after discovery.

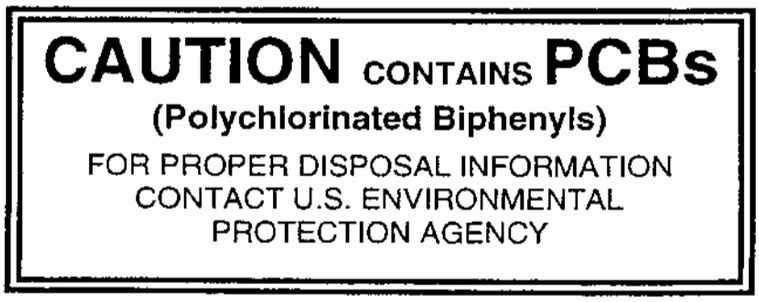
The facility or site manager or area manager responsible for compliance must ensure that all PCB transformers and PCB transformer locations are properly marked.

Figure 4.0 PCB Marks

Large PCB Mark



Small PCB Mark



5.0 PCB TRANSFORMER INSPECTIONS

While transformers containing 500 ppm or greater PCBs are in service or in storage, the transformers must be inspected on a periodic basis to ensure proper management, e.g., proper labeling, no combustible materials stored nearby, and no evidence of leaks. This section describes the PCB transformer inspection schedule, inspection items, and recordkeeping requirements.

5.1 PCB Transformer Inspection Schedule

A visual inspection of each PCB transformer must be performed at least once every 3 months. These inspections may be conducted during the periods of January-March, April-June, July-September, and October-December, as long as there is a minimum of 30 days between inspections. The extent of the visual inspection will depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer. PCB transformer inspections are required to be documented in an inspection log, which must be retained for at least 3 years after the transformer is removed and disposed of.

The frequency of visual PCB transformer inspections can be reduced to at least once every 12 months if the transformer utilizes either of the following risk reduction measures:

- The PCB transformer is equipped with impervious secondary containment with a capacity of at least 100 percent of the total dielectric fluid volume of all contained transformers.
- The PCB transformer has been tested and determined to contain less than 60,000 ppm PCBs.

These inspections may be conducted any time during the calendar year, as long as there is a minimum of 180 days between inspections. The facility or site manager responsible for compliance must ensure that these inspections are conducted.

5.2 PCB Transformer Inspection Items

The visual inspection must include the following observations:

- The presence of the PCB mark on the transformer must be confirmed. In-service transformers containing 500 ppm or greater PCBs must be marked with the large PCB mark (M_L). If the unit is too small to accommodate the M_L mark, then the small PCB mark (M_S) must be used. A description of each mark was provided in ***Section 4.0, Equipment Marking Requirements*** and ***Figure 4.0***.
- The presence of the M_L mark on the transformer location must also be confirmed. The vault door, machinery room door, fence, hallway, or means of access, other than grates and manhole covers, to a PCB transformer must be marked with the M_L mark. The mark must be placed in a location where it can be easily read by emergency response personnel fighting a fire involving the equipment.
- The absence of combustible materials stored near the PCB transformer must be confirmed. Combustible materials, including paints, solvents, plastics, paper, and wood, must not be stored within a PCB transformer enclosure (i.e., a transformer vault or a partitioned area housing a transformer), within 15 feet (5 meters) of a transformer enclosure, or if the PCB transformer is not enclosed, within 15 feet (5 meters) of the PCB transformer.

- An investigation for leaks of dielectric fluid on or around the transformer must be conducted. If a PCB transformer is found to be leaking which results in any quantity of dielectric fluid running off, or about to run off, the external surface of the transformer, then the transformer must be repaired or replaced to eliminate the source of the leak. Leaking material must be cleaned up and properly disposed of as PCB TSCA regulated waste. Cleanup of the released PCBs must be initiated no later than 48 hours after discovery of the leak. Until appropriate action is completed, any active leak of PCBs must be contained to prevent exposure to humans or the environment, and the spill area must be inspected daily to verify containment of the leak. Trenches, dikes, buckets, and pans are examples of proper containment.

Refer to ***Section 8.0, Cleanup of New Spills*** for additional spill cleanup information.

5.3 Recordkeeping

An inspection log and maintenance history for each PCB transformer must be maintained in a file at the facility where the transformer is located. The inspection log must include the following information:

- Name of the facility and the location of the transformer.
- Date of each visual inspection and the date that any leak was discovered, if different from the inspection date.
- Documentation that PCB marks are properly affixed to the transformer and transformer location.
- Documentation that no combustible materials are stored near the transformer.
- Name of the person performing the inspection and his/her signature.
- Location of any leaks.
- Date and description of corrective action, e.g., cleanup, containment, or repair.
- Results of containment and daily inspections required for uncorrected active leaks.

These files must be made available for inspection upon request of the USEPA, and must be maintained for at least 3 years after disposing of the PCB transformer. The facility or site manager responsible for compliance must ensure that these records are maintained.

6.0 WASTE LABELING

Special labeling requirements exist in the regulations for PCB TSCA regulated waste while they are accumulated and stored on-site prior to disposal. All waste PCB articles and PCB containers, which are grouped under the term "PCB item," must be marked with a specific PCB label. The facility or site manager responsible for compliance must ensure that all PCB TSCA regulated wastes are properly labeled. This section describes the labeling requirements for PCB TSCA regulated waste during accumulation and storage, pending laboratory analysis, and for off-site shipment.

6.1 Labeling of PCB TSCA Regulated Waste During Accumulation & Storage

Containers that are used to collect PCB TSCA regulated waste must be **labeled** with the following:

- Words that identify the contents of the drum (e.g., "PCB-Contaminated Soil").
- PCB concentration (if known). If the PCB concentration is unknown, mark the drum **"PCB Content Unknown,"** but assume that the drum contains between 50 and 500 ppm PCBs.
- Accumulation start date. For waste that is collected in a satellite accumulation area, the date that PCB TSCA regulated waste is first placed in the container must be marked on the container. In addition, the date when 55 gallons of PCB TSCA regulated waste has been generated in the satellite accumulation area must also be marked on the container. This date is the accumulation start date. The waste must be removed from the area and shipped to a licensed commercial Treatment, Storage, and Disposal Facility (TSDF) within 3 days after the accumulation start date. For waste that is initially collected in a temporary storage area, the accumulation start date is the date that PCB TSCA regulated waste is first placed in the container. PCB waste must not be stored for more than 30 days from the date that waste is first placed in the container at either a satellite accumulation area or at a temporary storage facility.
- The PCB Mark. Two formats may be used, which are known in the environmental regulations as the large PCB mark (M_L) and the small PCB mark (M_S). A description of each mark is as follows:

Large PCB Mark: The M_L mark consists of letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life of the transformer (including storage for disposal). The mark is square and must measure at least 6 inches on each side. If the container is too small to accommodate this label, the mark may be reduced in size to a minimum of 2 inches on each side.

Small PCB Mark: The M_S mark consists of letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life of the container (including storage for disposal). The mark is rectangular and measures 1 inch by 2 inches. If the container is too small to accommodate this size, the mark may be reduced in size to a minimum of 0.4 inch by 0.8 inch.

Refer to ***Figure 4.0*** in ***Section 4.0, Equipment Marking Requirements*** for an illustration of the M_L and M_S marks.

This information must be placed on the drum just before waste is placed in the drum, and the information must remain on the drum while the drum is being filled and when the waste is shipped off-site.

All information on PCB articles and containers must be clearly marked and visible for

inspection. Preprinted labels may be used, or the information may be clearly written directly onto the drum. Labels must be durable, and the information on the label must be in English. Labels must be placed on the container so that they can be easily read by persons inspecting the waste. If drums are placed against a wall, the information must face outward, not toward the wall. If a label or marking begins to fade and becomes illegible, the label or marking must be replaced or rewritten.

6.2 Labeling of Unknown Waste Pending Analysis

If a waste has been generated and it is not known whether the waste is classified as a PCB TSCA regulated waste, sampling and laboratory analysis of the waste must be performed. During the time period that a facility is awaiting the results of the laboratory analysis, the waste must be labeled as if it is a PCB TSCA regulated waste.

All unknown wastes and wastes suspected to contain PCBs (e.g., soil contaminated with dielectric fluid) must be handled as a PCB TSCA regulated waste until analytical results are available to document that the waste is non-hazardous. While awaiting the results of the laboratory analysis, the facility should continue to manage the waste as if the waste was a PCB TSCA regulated waste. If laboratory analysis reveals that the waste is a PCB TSCA regulated waste, then the facility must continue to manage the waste as a PCB TSCA regulated waste, and all labels and markings must remain. If laboratory analysis reveals that the waste is a non-TSCA regulated waste, then markings must be removed and replaced with the words **"Non-hazardous Waste."** In Pennsylvania, a waste containing between 4 ppm and 50 ppm PCBs is considered a PCB-containing waste and is therefore handled as a Pennsylvania residual waste. It is acceptable to keep the markings that describe how the waste was generated and the accumulation start date. These markings are helpful, but not necessary, for non-hazardous waste.

6.3 Labeling of PCB TSCA Regulated Waste for Off-Site Transportation

Before PCB TSCA regulated waste is shipped off-site from a generator facility to a licensed TSDF, the facility shipping the PCB TSCA regulated waste must ensure that the waste is labeled in accordance with USDOT regulations. Even if a disposal vendor usually prepares the facility waste for shipment, the facility or site manager responsible for compliance is ultimately responsible for ensuring that all labeling requirements are met.

For PCB containers of 110 gallons or less (e.g., pails, buckets, drums, boxes, bags, and totes, but not roll-off containers), two labels are required to be placed on each container: a PCB mark (M_L) and a hazard class label. The M_L mark is only required to be placed on PCB transformers, PCB capacitors, and roll-off containers being shipped off-site for disposal.

The PCB mark is the same mark used during accumulation and storage.

The hazard class label is a diamond-shaped label that describes the hazard class of the waste inside the container. The Class 9 label is used for PCB TSCA regulated waste.

For containers larger than 110 gallons (e.g., roll-off containers), the PCB mark and hazard class must still be marked on the container. Marking of the hazard class is usually accomplished with a placard.

7.0 WASTE STORAGE

Whenever PCB TSCA regulated wastes are generated at a field location, the waste must be transferred to a temporary PCB TSCA regulated waste storage area. This section describes two types of storage areas, provides specific requirements for each area, and discusses waste equipment, container, and recordkeeping requirements.

7.1 Storage Area Requirements

The storage area for PCBs and PCB items designated for disposal must meet the following requirements:

- The area must be equipped with adequate roof and walls or a rain shield to prevent rainwater from reaching the stored PCB-containing waste materials.
- The area must be equipped with floors and continuous curbing constructed of continuous smooth and impervious materials, such as Portland cement, concrete, or steel, to prevent or minimize penetration of PCBs. The curbing must be at least 6 inches high and made of the same type of materials as are required for the floor, and the area must not have drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area.
- The floor and curbing must provide containment equal to at least twice the volume of the largest PCB article or PCB container stored in the area, or 25 percent of the total volume of all PCB articles or PCB containers, whichever is greater.
- The area must not be located within the 100-year floodplain.

Additional requirements under ***Pennsylvania Residual Waste Regulations, §299.154, Storage of PCB-Containing Waste Material,*** for the temporary storage of up to six months of non-liquid PCB-containing waste material include:

- The waste shall be stored in a container, which adequately contains the waste to prevent dispersal into the air and prevent rainwater from reaching the waste.
- The container used to store the waste shall be labeled, indicating the date that the waste was first placed in temporary storage.
- The container used to store the waste may not be located in the 100-year floodplain of the waters of Pennsylvania.
- The person operating the temporary storage facility shall establish and maintain sufficient records to demonstrate compliance.

Non-leaking and structurally undamaged ***PCB-contaminated electrical equipment*** that has not been drained of free-flowing dielectric fluid may be stored on pallets next to the storage area. PCB-contaminated electrical equipment that has been drained of free-flowing dielectric fluid is not subject to these storage requirements. This type of storage is allowed only if the storage area has immediately available unfilled storage space equal to 10 percent of the volume of the equipment stored outside of the area. The equipment stored outside of the facility must be inspected weekly for leaks.

7.2 Temporary Storage Area Requirements

Certain waste PCB items and drums containing PCB TSCA regulated waste materials may be stored in a temporary storage area that does not comply with the above storage area requirements prior to being transferred to a commercial disposal facility. Storage in temporary storage areas is allowed for up to 30 days from the date of the waste PCB item's removal from service or the

date that the PCB TSCA regulated waste materials were initially generated.

The following PCB items may be stored in a temporary storage area:

- Non-leaking waste PCB articles and PCB equipment.
- Leaking waste PCB articles and PCB equipment, provided that they are placed in a container with sufficient sorbent material to absorb residual PCB liquids. Large equipment, such as transformers, must be placed in a containment pan with sorbent material and covered with a tarp to prevent rainwater from entering the pan.
- PCB containers holding solid PCB waste, such as contaminated soil, rags, and debris.
- PCB containers holding liquid PCBs at a concentration between 50 and 500 ppm PCBs, provided that a Spill Prevention, Control, and Countermeasure (SPCC) Plan has been prepared for the temporary storage area.

Each container of liquid PCBs containing between 50 and 500 ppm PCBs must be marked with the words, **"PCB Liquid - 50-500 ppm PCBs."** Dielectric fluid whose PCB concentration is unknown (except from circuit breakers, re-closers, and cables) must be assumed to contain between 50 and 500 ppm PCBs.

Containers of PCB liquids containing 500 ppm or greater PCBs cannot be stored in a temporary storage area. This type of PCB TSCA regulated waste must be shipped to a licensed TSDF.

7.3 Requirements for All Storage Areas

The facility or site manager responsible for compliance must ensure that PCB TSCA regulated wastes is properly stored. The following requirements must be met:

- Storage areas must be managed so that the PCB articles and PCB containers can be located by the date they entered storage for disposal.
- Storage areas must have adequate aisle space around the containers to facilitate inspection and emergency response (if required). A minimum of 2.5 feet of aisle space is recommended.
- Each storage area must be marked with the large PCB mark (M_L). A description of the M_L mark is provided in ***Section 4.0, Equipment Marking Requirements***. The storage area must also be marked "TSCA Regulated Waste."
- Equipment and tools that come into direct contact with PCBs while handling PCBs and PCB items in the storage area cannot be removed from the storage area. The equipment and tools must first be decontaminated by washing with solvent or detergent and wiping dry with rags or sorbent pads. All rags, pads, solvent, and detergent used in the decontamination process must be placed in a drum and labeled as PCB TSCA regulated waste.
- Inspection requirement or non-requirement for Conditionally Exempt Small Quantity Generators. All storage areas must be inspected on a weekly basis. Since PCB wastes (>50 ppm PCBs) are classified as TSCA regulated in Pennsylvania, all storage inspections must follow the requirements for TSCA regulated waste storage area inspections as described in ***Section 5.0, PCB Transformer Inspections***. However, if the Army Reserve Center facility where the storage area is located is classified as a small-quantity generator of hazardous waste, then the inspections can be performed every 30 days. Each inspection must be documented on a weekly inspection log to demonstrate compliance.
- Any leaking PCB articles and PCB containers must be transferred immediately to properly marked non-leaking containers, or the article or container must be placed in an

overpack container. Any spill and/or leaked materials must be immediately cleaned up, and all materials used in the cleanup process must be placed in a drum and labeled as PCB TSCA regulated waste.

7.4 Waste Equipment and Container Requirements

All containers used to store PCB TSCA regulated waste must meet USDOT standards. The following containers must be used:

— 18-gauge, 55-gallon steel drum with non-removable head (closed-head or tight-head drum); USDOT Class 17E; used for liquid hazardous waste.
— 85-gallon steel drum with snap ring and removable lid (overpack drum); used for overpacking 55-gallon drums.
— 1 6-gauge, 55-gallon steel drum with 15-mn liner, snap ring, and removable lid (open-head drum); USDOT Class 17C; used for PCB waste (50 ppm or more PCBs).

In addition, all waste containers must adhere to the following:

- A container of PCB TSCA regulated waste must not be opened, handled, or stored in a manner that may rupture the container or cause it to leak.
- PCB containers must be labeled or marked identifying the contents of the container (e.g., "PCB-Contaminated Soil").
- Marking and labeling information must be placed on the container before PCB TSCA regulated waste is placed in the container. If containers are placed against a wall, the information must face outward, not toward the wall. If a label or marking begins to fade and becomes illegible, the label or marking must be replaced or rewritten.
- Each PCB item or PCB container (containing the PCB item) must be marked with the date the item was removed from service. Containers of liquid or solid PCB waste must be marked with the date that the waste was initially generated.
- Containers must always be tightly closed during storage, except when adding or removing waste. Lids and rings must be tightly fastened, and bungs must be replaced. The general rule is that if a drum is accidentally tipped over and no leakage from the drum occurs, then the drum is tightly closed.

7.5 Recordkeeping

The facility or site manager responsible for compliance must ensure that records concerning waste storage areas (e.g., inspection logs, annual document logs) are maintained in a file at the facility or a central location.

8.0 CLEANUP OF NEW SPILLS

The USEPA PCB spill policy addresses the cleanup of new PCB spills. The policy requires the prompt cleanup of PCBs to different levels depending on location (i.e., residential, industrial, or rural), the potential for exposure, the concentration of PCBs initially spilled, and the nature and size of the population potentially at risk. Surface concentrations of PCBs on hard surfaces, such as concrete, wooden poles, and asphalt, are determined by a standard wipe test. Compliance with the spill policy (i.e., timely notification and cleanup) creates a presumption against enforcement action for penalties and the need for further cleanup under TSCA; however, USEPA reserves the right to compel additional cleanup or impose penalties if decontamination levels in the policy have not been achieved. This section provides an overview of the spill cleanup policy, and reviews reporting, PCB spill cleanup, and post-cleanup sampling requirements.

8.1 Exclusions of the Spill Policy

The following spills are subject to notification requirements, but not to cleanup standards of the Spill Policy:

- Spills that result in the direct contamination of surface waters.
- Spills that result in the direct contamination of sewers and sewage treatment plants.
- Spills that result in the direct contamination of private or public sources of drinking water or distribution systems.
- Spills that migrate to and contaminate surface waters, sewers, and drinking water supplies before cleanup has been completed in accordance with the spill policy.
- Spills that contaminate animal grazing areas (e.g., horse/cow pastures, zoos, etc.).

In these situations, the USEPA regional offices are to determine site-specific cleanup requirements.

8.2 Spill Reporting Requirements

The following reporting requirements apply to all spills of PCBs:

- All spills involving 10 pounds or greater PCBs must be reported to the USEPA Region III office of the Office of Pesticides and Toxic Substances Branch in the shortest possible time after discovery of the spill, but no later than 24 hours after discovery. Decontamination of the spill area must be initiated immediately.
- Spills confined within enclosed structures and facilities with no possibility of escape to the environment must be reported if 10 pounds or more PCBs were spilled.
- Spills of one pound or more of PCBs to the environment (i.e., soil, water, or sewers) must be reported to the National Response Center (NRC).
- Where any spill directly contaminates surface water, sewers, drinking water supplies, or animal grazing areas, the USEPA Region III office of the Office of Pesticides and Toxic Substances Branch must be notified in the shortest possible time after discovery of the spill, but no later than 24 hours after discovery, to obtain guidance on appropriate cleanup measures.

Spills of 10 pounds or less that do not directly contaminate surface water, sewers, or drinking water supplies must be cleaned up in accordance with the PCB spill policy, but notification to USEPA is not required.

Whenever a PCB spill is discovered, the emergency coordinator or primary contact at a facility

must immediately notify the 99th RSC Environmental Specialist for the Pennsylvania region, who will perform all required government notifications and internal company contacts. Field personnel should contact their supervisor.

8.3 Sampling Requirements

PCB concentrations on solid surfaces are determined by a standard wipe test. A 10-centimeter by 10-centimeter surface area isolated with a template is wiped with a gauze pad or glass wool of known size that has been saturated with hexane. It is important that the wipe be performed very quickly before the hexane evaporates. USEPA strongly recommends that the wiping medium be prepared with hexane in the laboratory and placed in a sealed vial or jar prior to use. The wiping medium is then submitted to a laboratory for analysis, and results are reported in micrograms per 100 square centimeters.

When performing post-cleanup sampling of a spill area, the following is required:

- The sampling area must consist of the area cleaned plus an additional 1-foot boundary, or an area 20 percent larger than the original area of contamination, whichever is larger.
- Random grab sampling or grid sampling may be performed.
- Samples must be spaced no more than 2 feet apart.
- The minimum of samples to be collected is 3, and the maximum number of samples is 40.
- USEPA may also collect samples from a spill site. Based on USEPA's sampling results, additional cleanup may be required.

Cleanup Requirements for Spills of Less Than 1 Pound of ***Low-Concentration PCBs*** (i.e., less than 500 ppm PCBs) or Less Than 270 Gallons of Untested Mineral Oil

- Solid surfaces must be double washed/rinsed, except that indoor residential surfaces other than vault areas must be cleaned to 10 ug PCBs/100 cm^2. Do not hose down an oil spill.
- All soil within the spill area must be excavated, and the area must be returned to original grade by backfilling with clean soil (less than 1 ppm PCBs).
- Cleanup must be completed within 48 hours after discovery of the spill. Completion of the cleanup may be delayed beyond 48 hours because of civil emergency, adverse weather conditions, lack of site access, or emergency operating conditions. Completion of the cleanup may only be delayed for the duration of the adverse weather conditions.

Cleanup Requirements for Spills of ***High-Concentration PCBs*** (i.e., 500 ppm PCBs or Greater); Spills Greater Than 1 Pound of Low Concentration PCBs; or 270 Gallons or Greater of Untested Mineral Oil

- Cleanup of visible traces of contamination must be initiated within 24 hours (or 48 hours for PCB transformers) after discovery of the spill. Initiation of the cleanup may be delayed beyond 24 hours because of civil emergency, adverse weather conditions, lack of site access, or emergency operating conditions. Completion of the cleanup may be delayed only for the duration of the adverse weather conditions.
- All visible traces of the spill plus at least a 3-foot buffer must be cordoned off.
- Signs advising persons to avoid the area must be clearly posted. PCB signs shall not be used in areas accessible to the public.
- The facility must record and document the center and the extent of the area of visible contamination. If visible traces are not evident, this fact must be documented, and the

USEPA regional office must be contacted for guidance.

- No time limit has been specified in the spill cleanup policy to complete the cleanup. However, USEPA expects cleanup to be achieved promptly and will consider promptness in determining whether a good faith effort has been made to clean up the spill.
- Do not hose down an oil spill.
- Spills in outdoor electrical substations that are located more than 325feet from residential/commercial areas must be cleaned up as follows:
  - Contaminated impervious solid surfaces and non-impervious solid surfaces must be cleaned to100 ug PCBs/100 cm^2.
  - Contaminated soil must be cleaned to either 25 ppm PCBs or to 50 ppm PCBs, provided that a label or notice is visibly placed in the area.
- Spills in restricted access areas other than outdoor electrical substations (i.e., industrial facilities) that are located more than 325 feet from residential/commercial areas must be cleaned up as follows:
  - High-contact industrial surfaces must be cleaned to 10 ug PCBs/100 cm^2.
  - Low-contact indoor impervious solid surfaces must be cleaned to 10 ug PCBs/100 cm^2.
  - Low-contact indoor non-impervious solid surfaces must be cleaned to 10 ug PCBs/100cm^2 or, with USEPA's approval, to 100 ug PCBs/100 cm^2 and encapsulated.
  - Low-contact outdoor solid surfaces (both impervious and non-impervious) must be cleaned to 100 ug PCBs/100 cm^2.
  - Contaminated soil must be cleaned to 25 ppm PCBs.
- Spills in non-restricted access areas (i.e., residential and commercial areas) must be cleaned up as follows:
  - Easily replaceable household items (e.g., toys, furniture) must be disposed of and replaced.
  - Indoor solid surfaces and outdoor ***high-contact residential, commercial surfaces*** must be cleaned to 10 ug PCBs/100 cm^2.
  - Indoor vault areas and low-contact residential/commercial outdoor impervious surfaces must be cleaned to 10 ug PCBs/100 cm^2 or, with USEPA's approval, to 100 ug PCBs/100 cm^2 and encapsulated.
  - Contaminated soil must be cleaned to 10 ppm PCBs, provided that the area is excavated to a minimum depth of 10 inches, the excavated soil is replaced with clean soil (less than 1 ppm PCBs), and the area is returned to its original condition (e.g., turf replacement). USEPA's interpretation of this standard is that for residential and other non-restricted access areas, the recommended soil cleanup level from the ground surface to 10 inches below ground surface is less than 1 ppm PCBs.

8.4 Recordkeeping

The facility or site manager responsible for compliance must ensure that written and signed cleanup and decontamination records are maintained in a file at the facility. The records must consist of the following:

- Identification of the source of the spill, e.g., type of equipment.
- Estimated or actual date and time of the spill.
- The date and time cleanup was completed or terminated. If the cleanup was delayed by

emergency or adverse weather, then the nature and duration of the delay must be recorded.

- A brief description of the spill location and the nature of the materials contaminated. This information should include whether the spill occurred in an outdoor electrical substation, other restricted access location, or non-restricted access location.
- Pre-cleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of the sampling methodology.
- A brief description of the solid surfaces cleaned and of the double wash/rinse method used (if applicable).
- Approximate depth of soil excavation and the amount of soil removed.
- Post-cleanup verification sampling data, and a brief description of the sampling methodology.
- A signed certification statement from the facility or site manager responsible for compliance that the cleanup requirements have been achieved and that the information is true to the best of his/her knowledge.

These records must be maintained at the facility or central location for a period of 5 years and then archived indefinitely.

9.0 CLEANUP OF OLD SPILLS

Old (or existing) PCB spills are defined as any release of materials containing 50 ppm or greater PCBs that occurred before May 4, 1987. An old spill also includes any PCB release since May 4, 1987 that was not initially thought to be a PCB spill, but new information indicates that 50 ppm or greater PCBs was released, and the 24-hour time period for notification to government authorities has expired. No established guidelines (e.g., USEPA spill cleanup policy for new PCB spills) exist for the cleanup of old spills. Cleanup standards for old spills are established by USEPA and/or the PADEP on a case-by-case basis. Additional cleanup is not necessarily required for old spills that have been cleaned up. Old spills are likely to involve more pervasive PCB contamination than are new spills and are generally more difficult to clean. This section discusses how to assess PCB contamination from an old spill, and how to establish site-specific cleanup guidelines with USEPA authorities.

Old PCB spills are excluded from the USEPA PCB spill cleanup policy by TSCA for the following reasons:

- The policy was not intended to require additional cleanup where a cleanup had already been performed in accordance with requirements imposed by the USEPA regional office, nor was the policy intended to interfere with ongoing litigation of enforcement actions concerning PCB spill cleanup.
- Old spills require a site-by-site evaluation because of the likelihood that an old spill site involves more pervasive PCB contamination and would generally be more difficult to remediate than new spills.

Old spills must be decontaminated in accordance with requirements established at the discretion of the USEPA Region III office.

Facilities are not required to notify USEPA of the discovery of an old spill. However, if no remedial action has been performed to address an old spill, the USEPA Region III office should be contacted for guidance.

9.1 Assessment of PCB Contamination from an Old Spill

If an old spill area is suspected at one of the U.S. Army Reserve Centers, the facility or site manager responsible for compliance must ensure that the possible presence of PCBs is determined through PCB sampling and analysis.

Discrete grab (not composite) soil samples should be collected and submitted to a certified analytical laboratory for analysis. Refer to ***Section 2.0, Equipment and Waste Characterization*** for guidance on sampling unknown PCB wastes.

Solid surfaces must be sampled by a standard wipe test. A 10-centimeter by 10-centimeter surface area is wiped with a gauze pad or glass wool of known size that has been saturated with hexane. It is important that the wipe be performed very quickly before the hexane evaporates. USEPA strongly recommends that the wiping medium be prepared with hexane in the laboratory and placed in a sealed vial or jar prior to use. The wiping medium is then submitted to a laboratory for analysis, and results are reported in micrograms per 100 square centimeters.

If PCBs have soaked into a non-impervious solid surface, such as concrete, the wipe test may reveal a relatively low result. The material may exhibit higher PCB concentrations below the surface. Inadvertently shipping PCB-contaminated concrete to a municipal landfill may result in future environmental liability. Upon initial inspection of the pad-mounted transformer at the

Edgemont facility, a very small old spill was observed on the concrete below the transformer. This spill should be cleaned as stated in this section.

9.2 Development of Cleanup Strategy

Once it is determined that a cleanup may be required, the USEPA Region III and the PADEP should be contacted.

U.S. EPA REGION III

U.S. Environmental Protection Agency, Region III
1650 Arch Street
Mail Code 3 WC00
Philadelphia, PA 19103-2029
215-814-3110 Tel
215-814-3114 Fax

PADEP CENTRAL OFFICE CONTACTS

PA Department of Environmental Protection
14th Floor Rachel Carson State Office Building
P.O. Box 8471
Harrisburg, PA 17105-8471
717-787-6239 Tel

10.0 WASTE MANIFESTS

Before PCB TSCA regulated waste can be shipped from a U.S. Army Reserve Center to a licensed commercial TSDF, a waste manifest form must be completed. The manifest is a document that accompanies the waste from the time it leaves the generator's facility until it reaches its final destination. The manifest requires information about the waste generator, the transporter, the disposal facility, and the waste. The purpose of this document is to track the waste shipment from the point of generation to the final destination (i.e., cradle to grave). This section discusses the regulatory requirements for manifests and how to complete and distribute a manifest, required training, and recordkeeping requirements.

10.1 When to Use a Manifest

A manifest is required whenever a PCB TSCA regulated waste is shipped from a U.S. Army Reserve Center to a commercial TSDF.

10.2 Who is Authorized to Complete, Review, and Sign the Manifest

Typically a regulated waste disposal vendor would provide a nearly complete manifest. However, it is the Reserve Center's responsibility to ensure that the manifest is completed correctly, regardless of who prepares the manifest. Special training is required by the USDOT for employees who review and sign the manifest. Contact the 99th RSC Environmental Specialist for the Pennsylvania region for training course information. In order to sign a manifest, employees must have received training. Only a U.S. Army Reserve Center employee can sign a manifest for the company. USDOT regulations require that refresher training be given every 2 years to remain authorized to review and sign manifests. The facility or site manager responsible for compliance must ensure that the Army Reserve Center personnel who sign manifests have been properly trained.

10.3 How to Select the Proper Manifest

The general rule in selecting a manifest is that the generator must use the manifest that is supplied by the state to which the PCB TSCA regulated waste is being sent. Each state has its own manifest based on the version that was originally developed by the USEPA. The USEPA version is known as Form 8700-22, and all states' versions are similar. If the disposal vendor cannot provide the proper manifest from another state, the manifest may be obtained by contacting the environmental regulatory agency of that state.

If the state to which the PCB TSCA regulated waste will be shipped does not have its own form, then a Pennsylvania manifest must be used. Copies of the manifest can be obtained from the 99th RSC Environmental Specialist for the Pennsylvania region or they can be ordered from the PADEP web site at **www.dep.state.us/dep/deputate/airwaste/wm/drfc/info/manifest.htm**.

A manifest has adequate space to list four different wastestreams on one form. If there is shipment of more than four wastestreams, another manifest or a continuation manifest (Form 8700-22A) can be used. The regular manifest and continuation manifest are similar, but the continuation manifest has space to enter approximately twice as many wastestreams. Continuation manifests are also used if more than two transporters are used to ship waste, or if the required information cannot fit on one manifest form.

Most manifests consist of a top page and seven copies (eight pages total). It is preferable to type

the information onto the manifest to ensure that the information appears on all of the copies. However, if the information cannot be typed onto the manifest, use a ballpoint pen, press hard when writing and signing, and check the last copy to make sure that all copies are legible.

10.4 How to Complete the Manifest

The one-page manifest form consists of numerous sections identified by the numbers 1 to 20 (shaded areas) and the letters A to K (unshaded areas). All unshaded sections of the manifest must be completed. The shaded portions are not required by Federal law to be completed, but most states require that you provide some of the information requested in the shaded areas.

The following instructions are based on completing a typical eight-page manifest. Other states' manifests may differ slightly, so check the instructions on the back of the manifest for assistance. As of May 1, 1999, Pennsylvania adopted a six page manifest, effectively eliminating copies 3 & 4 relating to "Generator: Mail to Destination" and "Generator: Mail to Generator State," respectively. If you have any questions, contact the 99th RSC Environmental Specialist for the Pennsylvania region.

Item 1: Enter the US EPA identification number that is assigned to the generator facility. This ID number usually begins with "PAD" followed by nine numbers. Under Manifest Document Number, enter a five-digit number that is unique to each manifest. The disposal vendor may have already completed this section. If not, you can use this section to track your manifests throughout the calendar year. For example, your first manifest in 2002 can have a Manifest Document Number of "02001", the second manifest is "02002", and so on.

Item 2: Enter the total number of manifests used. In almost every case, enter "1". If more than one manifest is used in the same shipment, enter "1" on each of the manifests. Enter a number other than 1 only if a continuation manifest is used.

Item 3: Enter the generator's name and the mailing address. This may not necessarily be the address of the generating facility. For example, if an unmanned facility generates the PCB TSCA regulated waste, do not enter that address; instead, enter the address for the person responsible for managing the completed manifests. If the mailing address is a large facility, be sure to include the name of the department or person (e.g., the facility or site manager responsible for compliance) that manages the manifests. This will help to avoid manifests getting lost in the mail.

Item 4: Enter the generator's telephone number. It is advised to enter the telephone number for the facility or site manager responsible for compliance.

Items 5 and 6: Enter the transporter's name and USEPA identification (ID) number.

Items 7 and 8: These sections are usually not required to be completed, but will be completed by the transporter if a second transporter is needed to complete the transportation of your waste.

Items 9 and 10: Enter the name, address, and USEPA ID number of the disposal facility.

Item 11: Enter the proper USDOT shipping name for the waste.

For Liquids: Polychlorinated Biphenyls Solution, 9, UN231 5, PG III
For Solids: Polychlorinated Biphenyls Mixture, 9, UN231 5, PG III

If the quantity of PCBs in the waste exceeds the reportable quantity for PCBs (which is 10 pounds), then the initials "RQ" must be entered before the shipping name.

Item 12: Enter the number and code for the type of containers being shipped. When entering the

number of containers, be sure to fill in all three boxes; e.g., one container would be entered as "001". The codes for the most common types of containers are as follows:

CM: Roll-off container or dumpster.
OW: Wooden box.
DF: Plastic or fiber drums.
DM: Metal drums.
DT: Dump truck.
TT: Tank truck.

Other codes are found on the back of the manifest.

Item 13: Enter the total weight in kilograms of PCB TSCA regulated waste being shipped (1 kilogram = 2.2 pounds). If the weight cannot be accurately determined, the abbreviation "Est." may be entered above the quantity to signify that the weight is an estimate.

Item 14: Enter the code for the unit of measurement for the number in Item 13. Use "K" for kilograms. Other codes are found on the back of the manifest.

Item 15: Enter a 24-hour emergency telephone number that may be used to notify the 99th RSC Environmental Specialist for the Pennsylvania region in case of a transportation accident. Other PCB information that must be entered in this section includes the following:

- For bulk loads of PCBs, enter the identity of the PCB waste and the earliest date that any of the waste in the bulk load was generated.
- For containers of PCB waste or PCB articles, enter the unique identification number, the type of PCB waste (e.g., soil, debris, small capacitors), and the earliest date of removal from service for disposal. The continuation manifest form must be used when a large number of drums and/or articles are being disposed and there is not enough space on the first-page manifest form for all of the required information.
- For each PCB article not in a container, enter the serial number if available or other identification number if there is no serial number, and the date of removal from service for disposal.

Other information, such as disposal approval numbers or work order numbers, may also be entered here. If the required information cannot fit on one manifest form, then the information must be entered on a continuation manifest.

Item 16: The authorized U.S. Army Reserve Center representative must print and sign his/her name. The date of receipt by the transporter must also be entered.

Item 17: The transporter must print and sign his/her name before the PCB TSCA regulated waste leaves the Army Reserve Center facility. The date of receipt by the transporter must also be entered.

Item 18: If required, the second transporter must print and sign his/her name. The date of receipt by the second transporter must also be entered.

Item 19: This section will be completed by the disposal facility if discrepancies are discovered, e.g., incorrect weight.

Item 20: This section will be signed by the disposal facility as proof that the PCB TSCA regulated waste reached its final destination.

Item A: No action required. This section contains a preprinted manifest number.

Item B: If the address where the PCB TSCA regulated waste was generated is different from the mailing address entered in Item 3, then enter the address where the waste was actually generated. If the facility and mailing addresses are the same, enter "same".

Item C: Enter the state of registration and the license plate number of the waste-carrying portion of the vehicle. Some states may require entering different information, such as a special transporter ID number.

Item D: Enter the transporter's telephone number.

Items E and F: If required, enter the same information as in Items C and D, but for the second transporter.

Item G: Not required.

Item H: Enter the telephone number for the disposal facility.

Item I: Enter the waste code for the PCB TSCA regulated waste being transported.

Item J: If a general term or N.O.S. (not otherwise specified) is used in Item 11 for the shipping name, then enter a description of the waste, e.g., "PCB-Contaminated Soil." The specific gravity of the waste is assumed to be 1.00 unless indicated otherwise in the lower right corner of the box.

Item K: Each material must be assigned an ultimate disposal method code. Both the generator and the disposal facility should agree on the code. Use "L" for landfill, "B" for incineration, or "T" for treatment.

10.5 Distribution of Manifest

Each standard manifest consists of a top page and seven copies (eight pages total), and the page numbers are printed on the bottom of each page. After the generator and the transporter sign the manifest, the generator retains Copy Nos. 3, 4, and 8, and the transporter keeps the remaining manifest copies.

The generator must manage the manifest copies as follows:

Copy No. 3: Mail within 5 business days to the state environmental regulatory agency of the disposal facility. The address may be found on the front of the manifest. You **do not** need to mail a copy to the PADEP.

Copy No. 4: Mail within 5 business days to the state environmental regulatory agency address on the front of the manifest. You **do not** need to mail a copy to the PADEP.

Copy No. 8: Keep in the facility's environmental files.

Copy No. 5: The disposal facility will mail Copy No. 5, with a handwritten signature, back to the generator as proof that the PCB TSCA regulated waste reached its final destination. Attach this copy to the corresponding Copy No. 8 and keep in the environmental files at the facility.
Some states provide only six copies of each manifest, not eight copies. If you ship your waste to a state whose manifest has only six copies, you must make a photocopy of the manifest copy that you keep when the waste leaves your facility and a photocopy of the manifest copy that is returned by the disposal facility. These photocopies must be mailed promptly to the PADEP.

10.6 Confirmation of Waste Receipt

When a U.S. Army Reserve Center uses an independent transporter to transport the PCB waste to a commercial storage or disposal facility, the Reserve Center must confirm by telephone, or by

other means agreed to by both parties, that the disposal facility actually received the manifested waste. A record of the telephone conversation must be maintained at the facility. The generator must confirm receipt of the waste by close of business the day after the disposal facility mails back Copy No. 5 of the manifest with a handwritten signature.

10.7 Exception Reports

If a generator does not receive a signed Manifest Copy No. 5 from the disposal facility within 35 days of the date of shipment, the generator must immediately contact the transporter and/or disposal facility to determine the status of the shipment. If within 45 days of the date of shipment the generator has not received a signed copy of the manifest, then the generator facility must submit an exception report to USEPA, PADEP, and in the case of an out-of-state shipment, to the state environmental regulatory agency of the disposal facility (but only if that state also classifies PCB waste as a TSCA regulated waste). The exception report must include the following information:

- A legible copy of the manifest in question.
- A cover letter signed by the generator that explains the efforts taken and the results of determining the status of the shipment.

Written telephone conversation logs must be maintained in a file at the facility as part of the annual document log. The 99th RSC Environmental Specialist for the Pennsylvania region must also be notified if a signed manifest copy has not been received within 45 days. These actions must be taken so penalties can be avoided. The facility or site manager responsible for compliance is responsible for exception reporting.

10.8 Certificate of Disposal

For each shipment of manifested PCB TSCA regulated waste that a disposal facility accepts from a U.S. Army Reserve Center facility, the disposal facility is required to prepare a certificate of disposal and send the certificate to the Army Reserve Center facility that shipped the waste. The certificate must be sent within 30 days from the date that disposal of the waste was completed (e.g., the date that the waste was incinerated, treated, or landfilled).

Under USEPA regulations, PCB waste must be destroyed within 1 year after the waste was generated. For that reason, U.S. Army Reserve Center purchase orders with disposal facilities require that Army Reserve Center shipments be destroyed within relatively short time periods. If a disposal facility does not provide a certificate of disposal within the time specified in the purchase order, then contact the 99th RSC Environmental Specialist for the Pennsylvania region.

10.9 Recordkeeping

Completed manifests (Copies 5 and 8 of each manifest), exception reports, and certificates of disposal must be retained by the generator at the facility for a period of 5 years. However, since the manifest is an important document, completed manifests over 5 years old must not be discarded. After 5 years, the records must be archived indefinitely.

11.0 WASTE TRANSPORTATION

TSCA regulated waste that is shipped off-site over public roadways for storage or disposal must be transported by a licensed waste transporter and must be accompanied by a hazardous waste manifest and land disposal restriction form. The vehicle transporting the waste must also be equipped with the proper placards. PCB TSCA regulated waste must be transported directly from the U.S. Army Reserve Center facility to a commercial TSDF by a licensed hazardous waste transporter. This section describes the regulatory requirements for transportation of PCB TSCA regulated waste and provides procedures that generators must follow to ensure safe transportation of waste.

11.1 Preshipment Vehicle Inspection

Prior to shipment of TSCA regulated waste off-site to a commercial TSDF, the facility or site manager responsible for compliance must ensure that the following vehicle inspection is performed:

- If containerized waste (drums, pails, bags, etc.) is being shipped, ensure that all containers are tightly sealed to prevent spills or leaks inside the box trailer during transport. Also, inspect the box trailer to ensure that it is equipped with a liquid-tight seal at the end of the trailer to prevent spilled liquid from leaking out the rear of the vehicle during transport.
- If bulk waste (e.g., roll-off container, tank truck, or dump truck) is being shipped, inspect the interior of the bulk container and the plastic liner to ensure that no foreign waste is present in the container.
- Ensure that roll-off container and dump truck shipments are tightly covered with a tarp and bungee cords and that manways on tank trucks are tightly sealed to prevent the escape of waste during transport.
- Inspect the exterior of the vehicle to ensure that it is clean and free from waste residues that may become loose during transport.

11.2 Preshipment Requirements for Generators

The facility or site manager responsible for compliance must ensure that the following actions are performed:

- Ensure that all PCB containers are properly labeled and marked with the PCB mark (M_L), and the Class 9 hazard class label (white with black stripes).
- Ensure that all applicable sections of the manifest are completed, including the generator's certification in Section 16. If containers are being shipped, the exact number of containers must be entered in Section 12 of the manifest. In Section 13, the total weight of waste being shipped must be estimated in kilograms to within 10% (1 kilogram = 2.2 pounds). In Section 15, the unique identification number and the date of removal from service for each drum must be listed on the manifest and (if necessary) the continuation sheet. For waste PCB equipment, the serial number and date of removal from service must be listed in Section 15 of the manifest and (if necessary) the continuation sheet.
- Ensure that a 24-hour emergency response telephone number and other information is entered in Section 15 of the manifest.
- Ensure that the transporter signs the transporter certification on the manifest before the

Army Reserve Center retains its manifest copies.

- Retain three copies of the manifest (Copy Nos. 3, 4 and 8 on a Pennsylvania manifest) and give all other manifest copies to the transporter.
- Confirm that the transporter has been assigned a USEPA ID Number.
- Confirm that the transporter is carrying in the vehicle a copy of the transporter's current and valid PADEP transporter permit.
- Confirm that the transporter is carrying in the vehicle a copy of the latest "Emergency Response Guide (ERG)," which is a pocket-sized book that describes emergency response procedures for hazardous materials or wastes according to United Nations (UN) number. For example, for UN 2315 (PCB) wastes, ERG Number 31 must be followed during an emergency response. The applicable ERG number may also be entered in Section 15 of the manifest.

11.3 Transport Vehicle Requirements

The vehicle transporting the PCB waste must comply with the following requirements:

- The vehicle must be equipped with Class 9 (miscellaneous hazardous wastes or materials) placards (white with black stripes). Placards, like hazard class labels, are used to graphically communicate a cargo's hazards. Placards are diamond-shaped, and may be made of plastic, metal, or other durable materials. They are placed on the outside and at the ends and sides of trucks, railcars, or roll-off containers. Before transporting TSCA regulated waste or offering TSCA regulated waste for transportation off-site, the generator must placard the transport vehicle or offer the transporter the appropriate placards.
- The vehicle must be marked on each end and side with the M_L mark if it is loaded with PCB containers holding more than 99.4 pounds of liquid PCB waste (i.e., contains 50 ppm or greater PCBs) or if the vehicle is loaded with one or more PCB transformers (i.e., contains 500 ppm or greater PCBs). The PCB marks must be positioned on the exterior of the transport vehicle so that the marks can be easily read by any persons inspecting or servicing the vehicle.
- The vehicle must be marked with its Pennsylvania waste transporter permit number on its sides and rear.

11.4 Preshipment Requirements for Transporters

Prior to shipment of PCB TSCA regulated waste off-site, the transporter is required to perform the following:

- Determine that the generator sections of the manifest are completed and that the generator has signed the manifest in Section 16.
- Sign the transporter's certification in Section 17 of the manifest.
- Accept all five copies of the manifest that are not retained or distributed by the generator.

11.5 Undeliverable Shipments

If the transporter cannot deliver the waste to the intended TSDF, either because of an emergency situation on the road or because the waste is rejected by the TSDF, the transporter must contact the U.S. Army Reserve Center representative designated on the manifest for further instructions. The transporter must obtain authorization from the U.S. Army Reserve Center representative to

deliver the shipment to an alternative TSDF or return the shipment to the Army Reserve Center facility. A new manifest must be sent to the new TSDF, and a letter must be submitted to the PADEP explaining the disposition of the first manifest.

12.0 WASTE DISPOSAL

Facilities that generate PCB TSCA regulated waste must ensure that the waste is ultimately shipped to a licensed commercial disposal facility for disposal. The U.S. Army Reserve Center must ensure that the disposal facility has been assigned a USEPA ID Number, and that the disposal facility possesses the proper permits and equipment to handle the waste. This section discusses the disposal requirements for each type of PCB TSCA regulated waste and commercial disposal facility requirements.

12.1 Disposal Requirements for PCB TSCA Regulated Waste

Disposal of PCB TSCA regulated waste is typically handled through arrangements with a disposal vendor under a term contract. The contract is designed to ensure compliance with the requirements specified in the TSCA regulations. The contract usually specifies the types of PCB TSCA regulated wastes that have been pre-approved for disposal at a commercial disposal facility. TSCA regulations provide the following four disposal options for use, depending on PCB concentration, physical state, and other characteristics:

- A TSCA- approved high-temperature incinerator.
- A TSCA-approved chemical waste landfill.
- A high efficiency boiler.
- A TSCA-approved alternative disposal method.

High-temperature incineration is the primary acceptable means of disposal for PCB TSCA regulated waste; however, in certain cases, chemical waste landfills or an alternative method (e.g., dechlorination) may be used for disposal. Although allowed by the regulations, high-efficiency boilers are not commonly used for PCB disposal.

In general, PCB TSCA regulated waste containing 50 ppm or greater PCBs must be disposed of in a TSCA-approved incinerator, except as provided for the following types of PCB TSCA regulated waste:

- Liquids containing 50 ppm or greater PCBs but less than 500 ppm must be disposed of in a TSCA-approved incinerator or by a TSCA-approved alternative method.
- Solids in the form of contaminated soil, rags, or other debris containing 50 ppm or greater PCBs must be disposed of in a TSCA-approved incinerator or TSCA-approved landfill.
- **PCB transformers** must be disposed of in a TSCA-approved incinerator, but may also be disposed of in a TSCA-approved landfill, provided that the transformer is first drained and rinsed of all free flowing liquids, filled with solvent, allowed to stand for at least 18 hours, and then drained thoroughly. Solvents may include kerosene, xylene, toluene, or other solvent in which PCBs are readily soluble. The fluids and flush solvents drained from the transformers must be disposed of in a TSCA-approved incinerator or by a TSCA-approved alternative method.
- PCB-contaminated electrical equipment, except capacitors, containing 50 ppm or greater PCBs but less than 500 ppm, must be disposed of by draining all free-flowing liquid from the electrical equipment. The liquid must be disposed of as a PCB TSCA regulated waste, but the drained equipment is not regulated. For electrical transformers, an application for the disposal of the units that previously contained between 50 ppm and 500 ppm PCBs must contain a narrative description and necessary plans and drawings to show how the facility will comply.
- Other PCB articles containing 500 ppm or greater PCBs must be disposed in a TSCA-approved incinerator, but may also be disposed of in a TSCA-approved landfill, provided

that all free-flowing liquid PCBs have been thoroughly drained, and the drained liquids are disposed of in a TSCA-approved incinerator.

- Other PCB-contaminated articles containing 50 ppm or greater PCBs, but less than 500 ppm, must be disposed of by draining all free-flowing liquid from the electrical equipment. The liquid must be disposed of as PCB TSCA regulated waste, but the drained equipment is not regulated.
- PCB containers (e.g., drums) that previously held a PCB waste with a concentration of 50 ppm or greater PCBs must be disposed of in a TSCA-approved incinerator or TSCA-approved landfill. If the container is being landfilled, all liquids must be drained and disposed of as PCB TSCA regulated waste.
- Sp ill materials must follow the disposal requirements for PCB liquids and solids.

12.2 Commercial Disposal Facility Requirements

U.S. Army Reserve Center facilities must not ship PCB TSCA regulated waste to a commercial disposal facility that has not been assigned a USEPA identification number and has not received TSCA authorization from USEPA and any additional state permits for the disposal of PCBs. The facility or site manager responsible for compliance must verify that the disposal facility has received a USEPA identification number. Verification must be performed before shipment of PCB TSCA regulated waste before issuing a purchase order to the disposal facility.

Prior to shipment of waste to a disposal facility, the facility or site manager responsible for compliance must confirm by written communication that the disposal facility is authorized to dispose of PCB waste, the facility has the disposal capacity to manage the waste shipment, and the facility will ensure that the ultimate disposal method will be followed. Verification should be performed before issuing a purchase order to the vendor.

The disposal facility must comply with all manifesting requirements. Refer to ***Section 10.0, Manifests*** for further information.

For each shipment of manifested PCB TSCA regulated waste that a disposal facility accepts from a U.S. Army Reserve Center facility, the disposal facility can prepare a certificate of disposal and send the certificate to the Army Reserve Center facility that shipped the waste, if requested. The certificate must be sent within 30 days from the date that disposal of the waste was completed (e.g., the date that the waste was incinerated).

13.0 REPORTING AND RECORDKEEPING

Environmental regulations require specific reports to be submitted to federal and state regulatory agencies. In addition, specific documents and papers must be maintained in a file at the generator's facility or central location to document that PCB TSCA regulated wastes are properly managed. These records must be available upon request to federal or state inspectors, officer, employee, or representative. This section describes all reports that are required to be submitted to regulatory agencies and all records that are required to be maintained at the facility.

13.1 Reporting Requirements

PCB wastes containing greater than 50 ppm PCBs are classified as TSCA regulated wastes in Pennsylvania; therefore, all reporting requirements for TSCA regulated wastes must be followed for PCB wastes. The facility or site manager responsible for compliance must ensure that all required reports are submitted to the PADEP and the USEPA.

The following reports may be required to be submitted to regulatory agencies depending on the facility's regulatory status:

- Notification of Regulated Waste Activity - This form must be completed by large-quantity generators (LQGs) and small-quantity generators (SQGs) of hazardous waste. The form must be submitted to the USEPA in order to obtain a USEPA Identification (ID) Number. This two-page form is designated by the USEPA as Form 8700-12. The form requires information such as the facility name, street address, and mailing address; contact person, job title, and telephone number; the name, address, and telephone number of the facility's legal owner; the generator status of the facility (LQG or SQG); and the types of hazardous wastes generated at the facility. All facilities that have been assigned a USEPA ID number have already completed this form. If information on the form has changed, the USEPA does not require the generator to resubmit an updated form.
- Exception Reports - If a facility, regardless of generator status, does not receive a signed manifest copy from a commercial storage or disposal facility for a PCB waste shipment within 35 days of the date of shipment, the facility must immediately contact the transporter and/or disposal facility to determine the status of the shipment. If within 45 days of the date of shipment, the facility has not received a signed copy of the manifest, the facility must submit an exception report to USEPA Region III, the PADEP, and, in the case of an out-of-state shipment, to the state environmental regulatory agency of the storage or disposal facility (but only if that state also classifies PCB waste as a hazardous waste). The exception report must include a legible copy of the manifest in question, and a cover letter signed by the generator that explains the efforts taken and results of determining the status of the shipment. The 99th RSC Environmental Specialist for the Pennsylvania region must also be notified if a signed manifest copy has not been received within 45 days.
- Incident Reports - Whenever an LQG's contingency plan is implemented in response to an emergency situation involving hazardous waste (including PCB TSCA regulated waste), such as a spill, fire, or explosion, the facility or site manager responsible for compliance must record the time, date, and any details of the incident. Within 15 days after the incident, a written incident report must be submitted to the PADEP, including: name, address, and telephone number of the owner or operator and facility; date, time, and type of incident; nature and quantity of materials involved; any injuries that resulted from the incident; an assessment of the actual or potential hazards to human health and/or

the environment; and an estimated quantity of recovered material from the incident and the current status of the material.

- Hazardous Waste Reduction Plans - LQGs that generate greater than 25 tons of hazardous waste per year are required to prepare and submit to the PADEP a written Hazardous Waste Reduction Plan (HWRP) that describes the facility's waste minimization activities. The initial HWRP must be prepared, implemented, and submitted to the PADEP by July 1, 1996, and the plan must be updated every other year and resubmitted to the PADEP. Annual status reports are also due to the PADEP by March 1 of every year with the facility's annual hazardous waste generator report.
- Annual Hazardous Waste Generator Reports - Any LQG that ships PCB TSCA regulated waste off-site to a commercial storage or disposal facility must submit an annual report every March 1 for the preceding calendar year. The report must include the facility's USEPA ID number; the calendar year covered by the report; the name, address, and USEPA ID number for each off-site storage or disposal facility to which PCB waste was shipped during the year; the name and USEPA ID number for each transporter used during the calendar year; a description, PCB waste code, hazard class, and quantity of each PCB waste shipped to a commercial storage or disposal facility; a description of waste minimization activities during the preceding year; and a certification signed by a generator representative.

13.2 Annual Document Log

Each facility using or storing at any time at least 99.4 pounds of PCBs contained in PCB containers, or one or more PCB transformers, must develop and maintain at the facility a written annual document log concerning PCB waste handling at the facility. The annual document log must be prepared for each facility by July 1 covering the previous calendar year, and must be available for inspection at the facility. The log is not required to be submitted to USEPA or the PADEP. The annual document log includes the following:

- The name, address, USEPA ID number, and the calendar year covered.
- The unique manifest number of every manifest generated by the facility during the calendar year.

From each manifest and for unmanifested waste that may be stored at the facility, the annual document log must also include the following:

- For bulk waste, its weight (in kilograms), the first date it was removed from service for disposal, the date it was transported for off-site disposal or storage, and the date of disposal (if known).
- The serial number or other means of identifying each PCB article, the weight (in kilograms) of the PCB waste in each transformer, the date it was removed from service, the date it was transported for off-site disposal or storage, and the date of disposal (if known).
- A unique number for each PCB container, a description of the contents of each PCB container, the total weight of the material (in kilograms) for each container, the first date that material placed in each PCB container was removed from service for disposal, the date each container was transported for off-site storage or disposal, and the date of disposal (if known).
- A unique number for each PCB article container, a description of the contents of each container, the total weight (in kilograms) of each container, the first date that a PCB

article placed in each container was removed from service for disposal, the date the container was transported for off-site storage or disposal, and the date of disposal (if known).

- The total number of PCB articles and the total weight (in kilograms) of PCBs in PCB articles, the total number and the total weight (in kilograms) of PCB article containers, the total number of PCB containers and the total weight (in kilograms) of the contents of PCB containers, and the total weight of bulk PCB waste that was placed into storage for disposal or disposed of during the calendar year.
- The total number of PCB transformers and the total weight (in kilograms) of PCBs contained in the transformers remaining in service at the end of the calendar year.
- The total weight (in kilograms) of any PCBs and PCB items in PCB containers, including the identification of container contents, remaining in service at the facility at the end of the year.
- A record of each telephone call or other means of verification to confirm receipt of PCB waste by the designated disposer.

13.3 Inspection and Maintenance Records

Records of inspection and maintenance history for each PCB transformer in service must be maintained in the form of a log. The log must contain the following information:

- The location of each PCB transformer.
- The date of each visual inspection and the date that any leak was discovered (if different from the inspection date).
- The person performing the inspection.
- Verification of the PCB mark on the transformer.
- Verification of the lack of combustible materials stored near the transformer.
- The location of any leaks.
- An estimate of the amount of dielectric fluid released from any leak.
- The date and description of any cleanup, containment, repair, or replacement performed.
- The results of any containment and daily inspection required for uncorrected active leaks.

The log must be maintained at the facility for at least 3 years after disposing of the PCB transformers, and must be made available for inspection upon request by the USEPA.

13.4 Recordkeeping Requirements

The facility or site manager responsible for compliance must ensure that all required records are maintained in a file at the facility. After 3 or 5 years, depending on the document, the files may be archived. No environmental files are to be discarded without first contacting the 99th RSC Environmental Specialist for the Pennsylvania region.

The following records may be required to be maintained on file at the facility depending on the facility's regulatory status:

- Proof of SQG Status - **Required of SQGs and conditionally-exempt SQGs**; must be maintained at the facility for at least 3 years.
- Hazardous Waste Determination Records - **Required of all generators**; must be maintained at the facility for at least 5 years.
- Weekly Inspection Logs for PCB Waste - **Required of all LQGs and SQGs**; must be maintained at the facility for at least 3 years.

FIGURE 13.0
SAMPLE Inspection Checklist

Inspector_____ Title_____ Date_____ Time_____

Signature_____ Location_____ Weather Conditions_____

Item	Yes	No	N/A	Comments	Follow-Up Actions Planned	Date Follow-Up Actions Completed
PCB Mark present on transformer?						
Area free of combustible materials?						
Is transformer in good condition?						
Any evidence of staining on the pad or ground around the transformer?						
Is the transformer leaking? (Note in Comments location of leak and estimate amount of dielectric fluid released)						

- Weekly Inspection Logs for PCB Transformers - **Required of all facilities**; must be maintained at the facility for at least 3 years after disposing of the PCB transformers.
- Hazardous Waste Manifests - **Required of all generators**; must be maintained at the facility for at least 5 years, then archived indefinitely.
- Exception Reports - **Required of all generators**; must be maintained at the facility for at least 5 years.
- Contingency Plan - **Required of LQGs**; must be maintained at the facility at all times.
- Personnel Training Documentation - **Required of LQGs**; must be maintained at the facility for at least 3 years.
- Hazardous Waste Reduction Plan - **Required of LQGs that generate greater than 25 tons of hazardous waste per year**; must be maintained at the facility at all times.
- Annual Hazardous Waste Generator Reports - **Required of LQGs**; must be maintained at the facility for at least 3 years, then archived indefinitely.
- Certificates of Disposal - **Required of all generators**; must be maintained at the facility for at least 3 years after the facility ceases using or storing PCBs and PCB items, then archived indefinitely.
- Annual Document Log - **Required of large-volume PCB waste generators**; must be maintained at the facility for at least 3 years after the facility ceases using or storing PCBs and PCB items.

14.0 PLANNING LEVEL COST ANALYSIS

The following are planning level cost estimates for the recycling, disposal, and replacement of transformers located at the aforementioned Army Reserve Centers in southeast Pennsylvania. The recycling and disposal of transformers, including oils, is typically determined on a cost per weight basis with the following approximations being made:

- 10 KVA = 225lbs/each
- 25 KVA = 300lbs/each
- 75 KVA = 500lbs/each
- 112 KVA = 800lbs/each
- 240 KVA = 1,500lbs/each

Typically, the unit cost per pound of disposal increases with higher PCB concentrations. Based on these assumptions and assuming the transformers are in good condition with no leaking oil, the following table presents estimated costs for the disposal and replacement of each of the transformers located at the Army Reserve Centers in southeast Pennsylvania. In addition, the table reflects the corresponding regulations (i.e., Residual Waste or TSCA regulated), if any, that apply to each transformer based on the sampling results. Please refer to the appropriate sections (i.e., labeling, storage, marking, disposal etc.) of this plan for detailed information.

PECO Energy provides electric power to each of the Army Reserve Centers. Their charge to take-over ownership of the service will depend upon their proprietary calculation of the pay-back period for the costs involved. The charge can vary from $0 to the full cost of replacement service, depending upon the anticipated rate at which power will be consumed in the future (the pay-back period). This is a recent change in the way PECO does business, a result of utility privatization. Versar has estimated the cost to purchase and install new transformers based on R.S. Means construction cost data, which will be the "worst case" scenario. Specific historic data and future projections on the consumption of power would be required to estimate more accurately the privatization costs.

Additional information for each transformer including gallonage, condition, and dimensions of each unit, would present a more accurate cost analysis. However, the above planning level cost estimates can be used for providing a ball park estimate for budgeting purposes.

Table 14.0 Estimated Disposal & Replacement Cost

Site	Identifier	Xformer Type	KVA	Sample No.	PCBs (ppm)	Disposal Cost[a]	Replacement Cost	Action Required
Edgemont	Pole #1	Pole	10	EPOLE1a	27	$750	$14,185	Residual Waste[c]
Edgemont	Pole #1	Pole	10	EPOLE1b	7.9	$750	$14,185	Residual Waste[c]
Edgemont	Pole #1	Pole	10	EPOLE1c	7.5	$750	$14,185	Residual Waste[c]
Edgemont	Pole #2	Pole	25	EPOLE2a	ND	$750	$14,185	None
Edgemont	Pole #2	Pole	25	EPOLE2b	ND	$750	$14,185	None
Edgemont	Pole #2	Pole	25	EPOLE2c	ND	$750	$14,185	None
Edgemont	Pole #4	Pole	25[b]	EPOLE4a	ND	$750	$14,185	None
Edgemont	Pole #4	Pole	25[b]	EPOLE4b	15	$750	$14,185	Residual Waste[c]
Edgemont	Pole #4	Pole	25[b]	EPOLE4c	56	$750	$14,185	TSCA Regulated
Edgemont	Pole #3	Pole	10	EPOLE3a	42	$750	$14,185	Residual Waste[c]
Edgemont	Pole #3	Pole	10	EPOLE3b	40	$750	$14,185	Residual Waste[c]
Edgemont	Pole #3	Pole	10	EPOLE3c	43	$750	$14,185	Residual Waste[c]
Edgemont	Pole #5	Pole	10	EPOLE5a	1.8	$750	$14,185	None
Edgemont	Pole #5	Pole	10	EPOLE5b	9.1	$750	$14,185	Residual Waste[c]
Edgemont	Pole #5	Pole	10	EPOLE5c	ND	$750	$14,185	None
Edgemont	Pad	Pad	240[b]	EPAD1	820,000	$1,500	$13,055	TSCA Regulated
North Penn	Pole #1	Pole	10	NPPOLE 1a	ND	$750	$14,185	None
North Penn	Pole #1	Pole	25	NPPOLE 1b	ND	$750	$14,185	None
North Penn	Pole #1	Pole	25	NPPOLE 1c	23	$750	$14,185	Residual Waste[c]
North Penn	Pole #2	Pole	25	NPPOLE 2a	ND	$750	$14,185	None
North Penn	Pole #2	Pole	25	NPPOLE 2b	ND	$750	$14,185	None
North Penn	Pole #2	Pole	25	NPPOLE 2c	ND	$750	$14,185	None
North Penn	Pole #3	Pole	25	NPPOLE 3	ND	$750	$14,185	None
North Penn	Pad	Pad	240[b]	NPPAD1a	710,000	$1,500	$13,055	TSCA Regulated
Germantown	Pad	Pad	240[b]	GVPAD1	ND	$1,500	$13,055	None
Philadelphia	Dry	Pad	240	Not Sampled	Not Sampled	N/A	N/A	N/A
Philadelphia	Dry	Pad	240	Not Sampled	Not Sampled	N/A	N/A	N/A
Bristol	Pole #1	Pole	25	BPOLE1	ND	$750	$14,185	None
Bristol	Pole #2	Pole	75	BPOLE2a	ND	$750	$14,185	None
Bristol	Pole #2	Pole	75	BPOLE2b	ND	$750	$14,185	None
Bristol	Pole #2	Pole	75	BPOLE2c	ND	$750	$14,185	None
Horsham	Pad	Pad	112.5	HPAD1	81	$1,500	$9,990	TSCA Regulated
					TOTALS	$25,500	$417,965	

[a]Disposal costs include transportation and labor costs.
[b]These transformers were estimated to be 25 KVA for pole mounted and 240 KVA for pad mounted.
[c]Waste may be disposed of at a residual waste disposal facility.

15.0 DEFINITIONS

Annual Document Log: Detailed information maintained by the generator concerning PCB waste handling at the facility.

Anti-Dilution Provision: Compliance with a specific PCB waste disposal requirement may not be avoided by intentionally or unintentionally diluting the PCB waste. Dilution includes reducing or shifting the PCB concentration from one material or environmental medium to another. For example, the PCB concentration in soil or bluestone from a spill is determined by the PCB concentration in the spilled material as opposed to the resulting PCB concentration in the soil or bluestone.

Certificate of Disposal: Documentation provided by a commercial disposal facility that PCB TSCA regulated waste was properly disposed of. The certificate must be sent within 30 days from the date that disposal of the waste was completed.

Exception Report: A report that a generator must send to the PADEP and the disposal facility's state regulatory agency if a signed manifest copy has not been received by the generator within 45 days of shipping the waste to an off-site commercial storage or disposal facility.

Fire-Related Incident: Any incident involving a PCB transformer that involves the generation of sufficient heat and/or pressure to result in the rupture of a PCB transformer and the release of PCBs.

High-Concentration PCBs: PCBs that contain 500 ppm or greater PCBs, or those materials that USEPA requires to be assumed to contain 500 ppm or greater PCBs in the absence of testing, such as capacitors or transformers with nameplates indicating the presence of Askarel, Pyranol, Inerteen, or other high concentration PCB dielectric fluids.

High-Contact Industrial Surface: A surface, generally made of impervious solid material, in an industrial setting that is repeatedly touched, often for relatively long periods of time. Examples include manned machinery and control panels. Examples of low-contact industrial surfaces include ceilings, walls, floors, roofs, roadways, and sidewalks in an industrial area; utility poles; unmanned machinery; concrete pads beneath electrical equipment; curbing; exterior structural building components; indoor vaults; and pipes.

High-Contact Residential/Commercial Surface: A surface in a residential/commercial setting that is repeatedly touched, often for relatively long periods of time. Examples include doors, wall areas below 6 feet high, uncovered flooring, windowsills, fencing, banisters, stairs, automobiles, children's play areas, and sidewalks. Examples of low-contact residential/commercial surfaces include interior ceilings, interior wall areas above 6 feet high, roofs, asphalt or concrete roadways, wooden utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components (e.g., aluminum/vinyl siding, cinder block, asphalt tiles), and pipes.

Impervious Solid Surfaces: Solid surfaces that are nonporous and unlikely to absorb spilled PCBs within the short period of time required for spill cleanup under USEPA's spill cleanup policy. Impervious surfaces include, but are not limited to, metals, glass, aluminum siding, and

enameled or laminated surfaces.

In or Near Commercial Buildings: Within the interior of, on the roof of, attached to the exterior wall of, in the parking area serving, or within 100 feet (30 meters) of a non-industrial non-substation building. Commercial buildings are typically accessible to both members of the general public and employees, and include public assembly properties, educational properties, institutional properties, residential properties, stores, office buildings, and transportation centers (e.g., airport terminal buildings, subway stations, bus stations, or train stations).

Leak or Leaking: Any instance in which a PCB article, PCB container, or PCB equipment has any PCBs on any portion of its external surface.

Low-Concentration PCBs: PCBs that are tested and found to contain less than 500 ppm PCBs, or those PCB-containing materials that USEPA requires to be assumed to be at concentrations PCBs below 500 ppm (i.e., untested mineral oil dielectric fluid).

Manifest: The document that acts as a tracking mechanism and travels with the waste from the time the waste leaves the generator's facility until the waste reaches its final destination. The manifest contains information on the generator, the transporter, the storage or disposal facility, and the waste.

Marked: The marking of PCB items, storage areas, and transport vehicles by means of applying a legible mark by painting, by fixation of an adhesive label, or by any other method that meets the requirements of these regulations. The PCB mark provides the descriptive name, cautions, and emergency instructions.

Non-impervious Solid Surfaces: Solid surfaces that are porous and more likely to absorb spilled PCBs prior to completion of USEPA's spill cleanup requirements. Non-impervious surfaces include, but are not limited to, wood, concrete, asphalt, and plasterboard.

Outdoor Electrical Substations: Outdoor, fenced-off, and restricted access areas used in the transmission and/or distribution of electrical power that are located at least 325 feet (0.1 kilometer) from a residential/commercial area. Outdoor, fenced-off, and restricted access areas used in the transmission and/or distribution of electrical power that are located less than 325 feet from a residential/commercial area are considered to be residential/commercial areas.

PCBs: Polychlorinated biphenyl chemical compounds, which are toxic, persistent (i.e., do not break down in the environment) chemicals used in transformers, capacitors, and other electrical equipment for insulating purposes, and in gas pipeline systems as a lubricant. The sale of PCBs was banned by law in 1979.

PCB Article: Any manufactured article, other than a PCB container (i.e., a drum, bag, tank, etc.), that contains or must be assumed to contain 50 ppm or greater PCBs and whose surfaces have been in direct contact with such PCBs. Examples include, but are, not limited to, capacitors, transformers, electric motors, circuit breakers, re-closers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, cable, hydraulic machines, pumps, and pipes.

PCB Container: Any package, e.g., can, bottle, bag, barrel, drum, or tank, that contains or must be assumed to contain 50 ppm or greater PCBs, or PCB articles and whose surfaces have been in

direct contact with such PCBs.

PCB- Containing Waste: A solid waste containing PCBs in the following concentrations:

(i) More than 4 parts per million, but less than 50 parts per million.

(ii) 50 parts per million or more, if the following are met:

(A) Regulations promulgated under the Toxic Substances Control Act (15 U.S.C.A. § § 2601—2629) provide that the waste may be disposed of as municipal solid waste.

(B) The waste is not a hazardous waste under the act.

(C) The Resource Conservation and Recovery Act (42 U.S.C.A. §6901—6991) does not impose specific standards or requirements for the disposal of the waste.

PCB-Contaminated Electrical Equipment: Any electrical equipment, including but not limited to transformers, capacitors, circuit breakers, re-closers, voltage regulators, switches, and cable, which contains 50 ppm or greater PCBs, but less than 500 ppm PCBs. Oil-filled electrical other than circuit breakers, re-closers, and cables, whose PCB concentration is unknown must be assumed to be PCB-contaminated electrical equipment. Circuit breakers, re-closers, and cable may be assumed to contain less than 50 ppm PCBs, unless the equipment nameplate indicates that the equipment was designed to contain concentrated PCBs, or unless there is a reason to believe that the equipment is filled with dielectric fluid containing 50 ppm or greater PCBs.

PCB Equipment: Any manufactured item, except for a PCB container or PCB article container, which contains a PCB article. Examples of PCB equipment include microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.

PCB TSCA Regulated Waste: Any waste material that contains 50 ppm or greater PCBs or that must be managed as if the material contains 50 ppm or greater PCBs because of the Anti-Dilution Provision.

PCB Item: Any PCB article, PCB article container, PCB container, or PCB equipment that contains PCBs.

Residential/Commercial Areas: Areas where people live or reside, or areas where people work in other than manufacturing or farming industries. Residential areas include housing and the property, on which housing is located, as well as playgrounds, roadways, sidewalks, parks, and other similar areas within a residential community. Commercial areas are typically accessible to both members of the general public and employees and include public assembly and institutional properties, store, office buildings, and transportation centers.

Residual Waste Code: The numeric code developed by the PADEP that is assigned to each type of residual waste. For example, 502 is the waste code for a waste containing 4 to 50 ppm PCBs.

Retrofill: To remove PCB or PCB-contaminated dielectric fluid and replace it with non-PCB dielectric fluid.

Satellite Accumulation Area: Can accumulate hazardous waste in or at the point of generation and under the control of the operator. Can accumulate a maximum of 55-gallons of hazardous

waste or 1-quart of acutely hazardous waste.

Soil: All vegetation, soils, and other ground media, including but not limited to, sand, grass, gravel, and oyster shells. It does not include concrete and asphalt.

Spill: Both intentional and unintentional spills, leaks, and other uncontrolled discharges, where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases. USEPA's spill cleanup policy applies to spills of 50 ppm or greater PCBs. The concentration of PCBs spilled is determined by the PCB concentration in the material spilled, as opposed to the PCB concentration in the material onto which the PCBs were spilled. Where a spill of untested mineral oil occurs, the oil is presumed to contain greater than 50 ppm PCBs, but less than 500 ppm PCBs, and is subject to USEPA's spill cleanup policy.

Spill Area: The area of soil on which visible traces of the PCB spill can be observed, plus a buffer zone of 1 foot beyond the visible traces. Any surface or object (e.g., concrete sidewalk or automobile) within the visible traces area or on which visible traces of the spilled material are observed is included in the spill area. The area represents the minimum area assumed to be contaminated by PCBs in the absence of pre-cleanup sample results, and is the minimum area that must be cleaned.

TSCA Regulated Waste Determination: The procedure that is used to determine whether a waste is a TSCA regulated waste. The determination can be made either through knowledge of the waste or the process generating the waste, or through sampling and laboratory analysis of the waste.

USEPA Identification (ID) Number: The facility-specific number assigned by the USEPA to each hazardous waste generator, transporter, and storage or disposal facility.

16.0 REFERENCES

Toxic Substances Control Act, 42 U.S.C. §2601 et seq.

Title 40, Code of Federal Regulations, Part 761 – *Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.*

25 Pennsylvania (PA) Code Residual Waste Management 288.191 – *Plan for Disposal of PCBs*

25 PA Code Residual Waste Management 288.301 – *PCBs*

25 PA Code Subchapter A – Residual Waste Management 299.154 – *Storage of PCB-Containing Waste Material.*

ATTACHMENT 1

North Penn Survey & Sampling Documentation

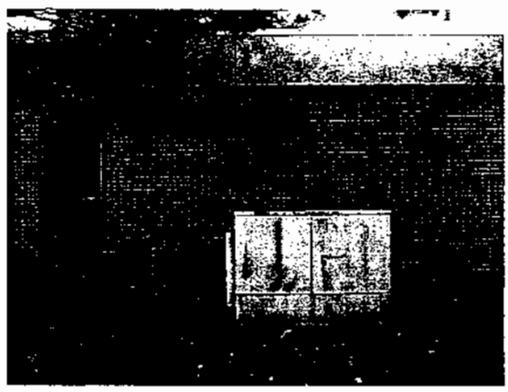
North Penn Memorial USARC

NPPad1
04/24/2002

Pad mount transformer located next to the main USARC building (in the background). Prior to the site visit someone had labeled the transformer as containing PCBs.

BAE labeled the transformer with a paint marker as NPPad1.

IDW was placed in a plastic bag, labeled as NPPad1 and placed in a DOT-shippable 5-gallon pail for North Penn IDW.

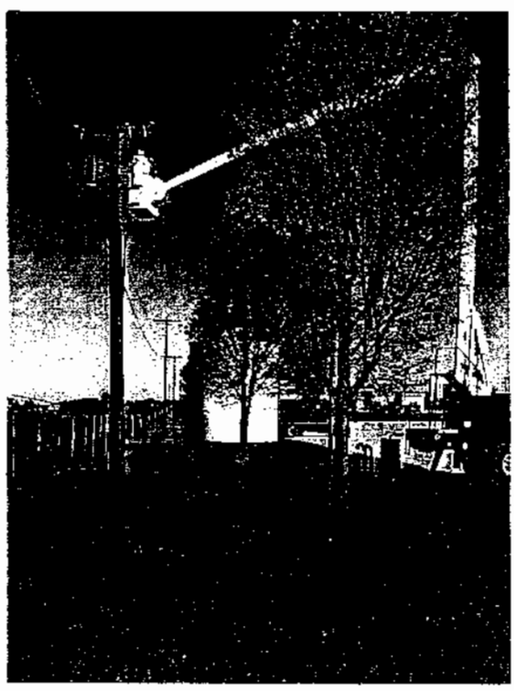


NPPole1
04/24/2002

Three transformers mounted on a pole, left of the second parking area and near a small water treatment plant (in background of picture).

BAE labeled the transformers with a paint marker as a, b, and c. 'a' is the transformer on the right of the photo, 'b' is obscured by the pole, and 'c' is the black transformer on the left of the picture.

IDW was placed in a plastic bag, labeled as NPPole1 and placed in the DOT-shippable 5-gallon pail for North Penn IDW.



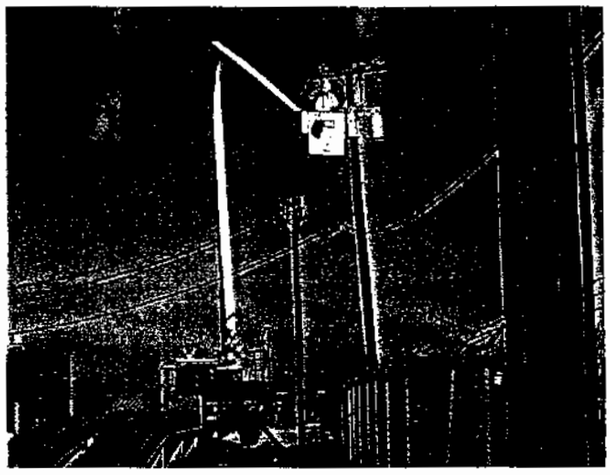
North Penn Memorial USARC

NPPole2
04/24/2002

Three transformers mounted on a pole just outside of the fence enclosing the military equipment parking (MEP) area. This photo was taken facing away from the main USARC building.

BAE labeled the transformers with a paint marker as a, b, and c. 'a' is obscured by the bucket, 'b' is the transformer in line with the pole, and 'c' is the transformer on the right of the picture.

IDW was placed in a plastic bag, labeled as NPPole2 and placed in the DOT-shippable 5-gallon pail for North Penn IDW.



NPPole3
04/24/2002

Single transformer mounted on a pole also outside of the fence enclosing the military equipment parking (MEP) area. The transformer was not connected, and appears to be linked to the waste water treatment plant to the left of the pole (out of range of the photo)

BAE labeled the transformers with a paint marker as NPole3

IDW was placed in a plastic bag, labeled as NPPole3 and placed in the DOT-shippable 5-gallon pail for North Penn IDW.

North Penn Memorial USARC

The 5-gal pail of IDW was placed in the storage building within the MEP area. Kendra Borka's business card was affixed to the top of the pail and included her phone numbers.

GPL LABORATORIES, LLLP

North Penn

Summary of Analytical Results

Client ID NPPAD1
GPL ID: 204159-001-001-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/15/2002
Time Analyzed 02:32
Analysis Batch 53886

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	7900000	ug/kg	U	1000
PCB-1221	BQL	7900000	ug/kg	U	1000
PCB-1232	BQL	7900000	ug/kg	U	1000
PCB-1242	BQL	7900000	ug/kg	U	1000
PCB-1248	BQL	7900000	ug/kg	U	1000
PCB-1254	340000000	7900000	ug/kg	P	1000
PCB-1260	BQL	7900000	ug/kg	U	1000

Summary of Analytical Results

Client ID NPPAD1
GPL ID: 204159-001-001-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/17/2002
Time Analyzed 12:06
Analysis Batch 53886

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	79000000	ug/kg	U	10000
PCB-1221	BQL	79000000	ug/kg	U	10000
PCB-1232	BQL	79000000	ug/kg	U	10000
PCB-1242	BQL	79000000	ug/kg	U	10000
PCB-1248	BQL	79000000	ug/kg	U	10000
PCB-1254	710000000	79000000	ug/kg		10000
PCB-1260	BQL	79000000	ug/kg	U	10000

Summary of Analytical Results

Client ID NPPOLE1a
GPL ID: 204159-002-002-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 17:48
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	6700	ug/kg	U	1
PCB-1221	BQL	6700	ug/kg	U	1
PCB-1232	BQL	6700	ug/kg	U	1
PCB-1242	BQL	6700	ug/kg	U	1
PCB-1248	BQL	6700	ug/kg	U	1
PCB-1254	BQL	6700	ug/kg	U	1
PCB-1260	BQL	6700	ug/kg	U	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID NPPOLE1b
GPL ID: 204159-003-003-I/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 18:16
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	6600	ug/kg	U	1
PCB-1221	BQL	6600	ug/kg	U	1
PCB-1232	BQL	6600	ug/kg	U	1
PCB-1242	BQL	6600	ug/kg	U	1
PCB-1248	BQL	6600	ug/kg	U	1
PCB-1254	BQL	6600	ug/kg	U	1
PCB-1260	BQL	6600	ug/kg	U	1

Summary of Analytical Results

Client ID NPPOLE1c
GPL ID: 204159-004-004-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 18:44
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	5700	ug/kg	U	1
PCB-1221	BQL	5700	ug/kg	U	1
PCB-1232	BQL	5700	ug/kg	U	1
PCB-1242	BQL	5700	ug/kg	U	1
PCB-1248	BQL	5700	ug/kg	U	1
PCB-1254	BQL	5700	ug/kg	U	1
PCB-1260	23000	5700	ug/kg	P	1

Summary of Analytical Results

Client ID NPPOLE3
GPL ID: 204159-005-005-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 19:12
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	8500	ug/kg	U	1
PCB-1221	BQL	8500	ug/kg	U	1
PCB-1232	BQL	8500	ug/kg	U	1
PCB-1242	BQL	8500	ug/kg	U	1
PCB-1248	BQL	8500	ug/kg	U	1
PCB-1254	BQL	8500	ug/kg	U	1
PCB-1260	BQL	8500	ug/kg	U	1

Summary of Analytical Results

Client ID NPPOLE2a
GPL ID: 204159-006-006-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 19:40
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	7700	ug/kg	U	1
PCB-1221	BQL	7700	ug/kg	U	1
PCB-1232	BQL	7700	ug/kg	U	1
PCB-1242	BQL	7700	ug/kg	U	1
PCB-1248	BQL	7700	ug/kg	U	1
PCB-1254	BQL	7700	ug/kg	U	1
PCB-1260	BQL	7700	ug/kg	U	1

Summary of Analytical Results

Client ID NPPOLE2b
GPL ID: 204159-007-007-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 21:32
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	9900	ug/kg	U	1
PCB-1221	BQL	9900	ug/kg	U	1
PCB-1232	BQL	9900	ug/kg	U	1
PCB-1242	BQL	9900	ug/kg	U	1
PCB-1248	BQL	9900	ug/kg	U	1
PCB-1254	BQL	9900	ug/kg	U	1
PCB-1260	BQL	9900	ug/kg	U	1

GPL *LABORATORIES, LLLP*

Summary of Analytical Results

Client ID NPPOLE2c
GPL ID: 204159-008-008-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 22:00
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	9100	ug/kg	U	1
PCB-1221	BQL	9100	ug/kg	U	1
PCB-1232	BQL	9100	ug/kg	U	1
PCB-1242	BQL	9100	ug/kg	U	1
PCB-1248	BQL	9100	ug/kg	U	1
PCB-1254	BQL	9100	ug/kg	U	1
PCB-1260	BQL	9100	ug/kg	U	1

DAILY CONSTRUCTION QUALITY CONTROL REPORT

CONTRACTORS NAME: **BAY ASSOCIATES ENVIRONMENTAL, INC.** DATE: 4/24/02

CONTRACTORS ADDRESS: **P.O. Box 21009**
Baltimore, MD 21228

REPORT NO: 20424-1

CONTRACT NO: **DACA65-01-D-0017**
D.O. #0005

PROJECT NAME: **PCB SURVEY - various locations in Pennsylvania**

LOCATION OF WORK: **North Penn Memorial USARC, Pennsylvania**

WEATHER: Cold/Sunny RAIN: NONE INCHES TEMP: 45 MAX. 38 MIN.

WIND DIRECTION: _____ OTHER WEATHER CONDITIONS: WINDY.

1)

	CONTRACTORS OR SUBCONTRACTOR	C = CONT S = SUB	AREA OF RESPONSIBILITY
1	BAY ASSOCIATES ENVIRONMENTAL, INC.	C	ENVIRONMENTAL CONTRACTOR
2	HARRY B. MILLER CO., INC.	S	ELECTRICAL

2) WORK PERFORMED TODAY (INDICATE IDENTITY OF CONTRACTOR AND SUB-CONTRACTORS, LOCATION AND DESCRIPTION OF WORK):

N. Penn. USARC 7 pole mounts, 1 pad mounts

Angela Peyton
John - from Harry B. Miller
Jessica Lackey
Chris Seymour
Hendra Barker Start 7:46
Finish 10:00

3) SAMPLES COLLECTED:

PCB - 8, 7 pole + 1 pad

See Sample Log / COC

DAILY CONSTRUCTION QUALITY CONTROL REPORT

4) RESULTS OF SURVEILLANCE (INCLUDE SATISFACTORY WORK COMPLETED, OR DEFICIENCIES WITH ACTION TO BE TAKEN):

No problems encountered

5) VERBAL INSTRUCTIONS GIVEN BY GOVERNMENT PERSONNEL (INCLUDE NAME, TIME, PLACE, INSTRUCTIONS AND RESULTANT ACTIONS):

None to report

DAILY CONSTRUCTION QUALITY CONTROL REPORT

6) JOB SAFETY (INCLUDE DEFICIENCIES AND CORRECTIVE ACTIONS):

no deficiencies to report.

Sampling Log Transformer Sampling at North Penn Memorial USARC, Pennsylvania

Sample No.	Sample Location	Date	Sample Location		Sample Collection		Sampler's Initials	Sample Size	Type of Analysis	Pole or Pad Mounted	Photo Taken & Logged	Sample Labeled	COC Complete	Decon. Complete
			Start Time	End Time	Start Time	End Time								
NPPAD1	NP PAD 1	4/24	7:55	8:29	8:15	8:21	CS	40ml	PCB	PAD	✓	✓	✓	✓
NPPOLE 1a	NPPOLE 1	4/24	8:30	9:05	8:40	8:45	CS	40ml	PCB	Pole	✓	✓	✓	✓
NPPOLE 1b	NPPOLE 1	4/24	8:30	9:05	8:48	8:50	CS	40ml	PCB	Pole	✓	✓	✓	✓
NPPOLE 1c	NPPOLE 1	4/24	8:30	9:05	8:51	8:55	CS	40ml	PCB	Pole	✓	✓	✓	✓
NP POLE 3	NPPOLE 3	4/24	9:11	9:20	9:14	9:17	CS	40ml	PCB	Pole	✓	✓	✓	✓
NPPOLE 2a	NPPOLE 2	4/24	9:24	9:50	9:30	9:40	CS	40ml	PCB	Pole	✓	✓	✓	✓
NPPOLE 2b	NPPOLE 2	4/24	9:24	9:50	9:30	932	CS	40ml	PCB	Pole	✓	✓	✓	✓
NPPOLE 2c	NPPOLE 2	4/24	9:24	9:50	9:41	9:45	CS	40ml	PCB	Pole	✓	✓	✓	✓

Samples collected by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

Photographic Log Transformer Sampling at North Penn Memorial, Pennsylvania

Date	Time	Roll Number	Picture Number	Photographer (Initials)	Site Location	Direction facing	Sample No. Documented	Additional Comments
4/24	7:46	DIGIT	#17	jdl	NORTH PENN	ENE	NPPAD 1 Yes	already labelled PCB
4/24	8:40	DIGIT	#18	jdl	NORTH PENN	NW	NPPOLE 1 YES	H2O tower in background parking lot on Right
4/24	9:15	DIGIT	#19	jdl	NORTH PENN	E/ESE	NPPOLE3 YES	Single transformer
4/24	9:29	DIGIT	#20	jdl	NORTH PENN	W	NPPOLE 2 YES	triple - facing rear of property
4/24	9:35	DIGIT	21	jdl	"			Storage area (Dw

Photos taken by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

GPL LABORATORIES, LLLP

202 Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference: North Penn Memorial UND-005

1 of 1 Pgs.

North Penn Memorial USARC

Project: PCB sampling and analysis
Client: US Army Corps of Engineers
Send Results To: Bay Associates Environmental
Address: PO Box 21009
Baltimore MD 21228
Phone: 410-418-4880

Turnaround Time: Norm
# of Containers: 1pc
Container Type: 40ml
Preservative Used: 4°C
Type of Analysis: PCB

NPM Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	PCB	Lab Cooler No.	CLIENT COMMENTS
NPPAD 1	4/24	8:20	oil	CS	✓	1	
NPPOLE1a		8:44	oil	CS	✓		
NPPOLE1b		8:50	oil	CS	✓		
NPPOLE1c		8:55	oil	CS	✓		
NPPOLE3		9:17	oil	CS	✓		
NPPOLE2a		9:40	oil	CS	✓		
NPPOLE2b		9:32	oil	CS	✓		
NPPOLE2c		9:45	oil	CS	✓		

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	4/25/12 3:30			[signature]	4/25/12 3:30pm
Relinquished By:	Date/Time	Received By:	Date/Time / Shipper:	Airbill No.:	
Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:	

G.P. W.O. _____

ATTACHMENT 2

Edgemont Survey & Sampling Documentation

Edgemont U.S. Army Reserve Center

EPole2
04/23/2002

Three transformers mounted on a pole south of EPole1. The pole is located next to a military equipment park that is downgrade from The Area Maintenance Support Activity #31, which is the building in the background of this picture.

Transformers were labeled with a black marker as a, b, and c. The transformer in the foreground of the picture is 'a', the middle one is 'b', and the one farthest in the back is 'c'.

IDW was placed in a plastic bag, labeled as EPole2 and placed in the DOT-shippable 5-gallon pail for Edgemont IDW.

EPole4
04/23/2002

Three transformers mounted on a pole next to the Organizational Maintenance Shop (OMS), which is the building in the right of this picture.

Transformers were labeled with a marker as a, b, and c (from left to right, as viewed in this photo). 'a', and 'b' are visible, 'c' is blocked from view by the bucket truck.

IDW was placed in a plastic bag, labeled as EPole4 and placed in the DOT-shippable 5-gallon pail for Edgemont IDW.

Edgemont U.S. Army Reserve Center

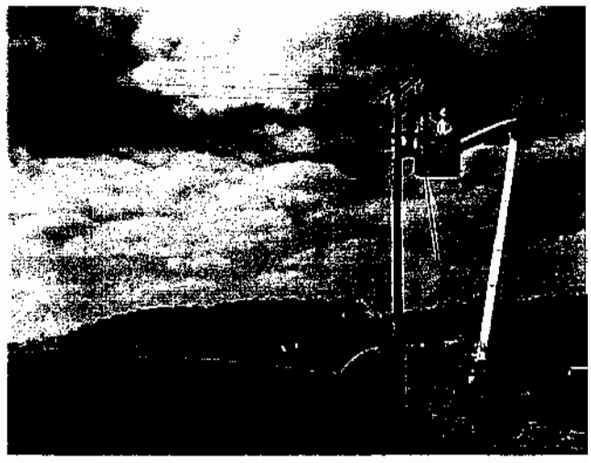
EPole3
04/23/2002

Three transformers mounted on a pole next to the Area Maintenance Support Activity (AMSA) building, which is the building in the left of this picture.

Transformers were labeled with a marker as a, b, and c (from right to left, as viewed in this photo). 'a', and 'c' are visible, 'b' is mostly blocked from view by the pole.

IDW was placed in a plastic bag, labeled as EPole3 and placed in the DOT-shippable 5-gallon pail for Edgemont IDW.

EPole5
04/23/2002



Three transformers mounted on a pole at the end of the road leading from the USARC main parking lot. The road passes the K-Span building (the dome Shaped building in the background of the picture) The pole is located off to the right just before the Road dead ends.

Transformers were labeled with a marker as a, b, and c . 'a' is not visible, because the pole is in the way. 'b' is in the left of the picture and 'c' is the transformer that is being sampled in the picture. If looking at the transformers from the road, the labeling goes from right to left (a,b,c).

IDW was placed in a plastic bag, labeled as EPole5 and placed in the DOT-shippable 5-gallon pail for Edgemont IDW.

Edgemont U.S. Army Reserve Center

The 5-gal pail of IDW was placed in the storage building between the AMSA & OMS buildings. Kendra Borka's business card was affixed to the top of the pail and included her phone numbers.

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPAD1
GPL ID: 204159-009-009-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/17/2002
Time Analyzed 12:34
Analysis Batch 53886

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	80000000	ug/kg	U	10000
PCB-1221	BQL	80000000	ug/kg	U	10000
PCB-1232	BQL	80000000	ug/kg	U	10000
PCB-1242	BQL	80000000	ug/kg	U	10000
PCB-1248	BQL	80000000	ug/kg	U	10000
PCB-1254	820000000	80000000	ug/kg		10000
PCB-1260	BQL	80000000	ug/kg	U	10000

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE1a
GPL ID: 204159-010-010-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 22:57
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	9500	ug/kg	U	1
PCB-1221	BQL	9500	ug/kg	U	1
PCB-1232	BQL	9500	ug/kg	U	1
PCB-1242	BQL	9500	ug/kg	U	1
PCB-1248	BQL	9500	ug/kg	U	1
PCB-1254	BQL	9500	ug/kg	U	1
PCB-1260	27000	9500	ug/kg	P	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE1b
GPL ID: 204159-011-011-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 23:24
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	8500	ug/kg	U	1
PCB-1221	BQL	8500	ug/kg	U	1
PCB-1232	BQL	8500	ug/kg	U	1
PCB-1242	BQL	8500	ug/kg	U	1
PCB-1248	BQL	8500	ug/kg	U	1
PCB-1254	BQL	8500	ug/kg	U	1
PCB-1260	7900	8500	ug/kg	JP	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE1c
GPL ID: 204159-012-012-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/13/2002
Time Analyzed 23:52
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	8300	ug/kg	U	1
PCB-1221	BQL	8300	ug/kg	U	1
PCB-1232	BQL	8300	ug/kg	U	1
PCB-1242	BQL	8300	ug/kg	U	1
PCB-1248	BQL	8300	ug/kg	U	1
PCB-1254	BQL	8300	ug/kg	U	1
PCB-1260	7500	8300	ug/kg	JP	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE2a
GPL ID: 204159-013-013-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 00:20
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	7900	ug/kg	U	1
PCB-1221	BQL	7900	ug/kg	U	1
PCB-1232	BQL	7900	ug/kg	U	1
PCB-1242	BQL	7900	ug/kg	U	1
PCB-1248	BQL	7900	ug/kg	U	1
PCB-1254	BQL	7900	ug/kg	U	1
PCB-1260	BQL	7900	ug/kg	U	1

Summary of Analytical Results

Client ID EPOLE2b
GPL ID: 204159-014-014-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 00:48
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	6000	ug/kg	U	1
PCB-1221	BQL	6000	ug/kg	U	1
PCB-1232	BQL	6000	ug/kg	U	1
PCB-1242	BQL	6000	ug/kg	U	1
PCB-1248	BQL	6000	ug/kg	U	1
PCB-1254	BQL	6000	ug/kg	U	1
PCB-1260	BQL	6000	ug/kg	U	1

Summary of Analytical Results

Client ID EPOLE2c
GPL ID: 204159-015-015-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 01:16
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	8700	ug/kg	U	1
PCB-1221	BQL	8700	ug/kg	U	1
PCB-1232	BQL	8700	ug/kg	U	1
PCB-1242	BQL	8700	ug/kg	U	1
PCB-1248	BQL	8700	ug/kg	U	1
PCB-1254	BQL	8700	ug/kg	U	1
PCB-1260	BQL	8700	ug/kg	U	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE4a
GPL ID: 204159-016-016-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 01:44
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	7500	ug/kg	U	1
PCB-1221	BQL	7500	ug/kg	U	1
PCB-1232	BQL	7500	ug/kg	U	1
PCB-1242	BQL	7500	ug/kg	U	1
PCB-1248	BQL	7500	ug/kg	U	1
PCB-1254	BQL	7500	ug/kg	U	1
PCB-1260	BQL	7500	ug/kg	U	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE4b
GPL ID: 204159-017-017-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 03:08
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	7600	ug/kg	U	1
PCB-1221	BQL	7600	ug/kg	U	1
PCB-1232	BQL	7600	ug/kg	U	1
PCB-1242	BQL	7600	ug/kg	U	1
PCB-1248	BQL	7600	ug/kg	U	1
PCB-1254	BQL	7600	ug/kg	U	1
PCB-1260	15000	7600	ug/kg	P	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE4c
GPL ID: 204159-018-018-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 03:36
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	8300	ug/kg	U	1
PCB-1221	BQL	8300	ug/kg	U	1
PCB-1232	BQL	8300	ug/kg	U	1
PCB-1242	BQL	8300	ug/kg	U	1
PCB-1248	BQL	8300	ug/kg	U	1
PCB-1254	BQL	8300	ug/kg	U	1
PCB-1260	56000	8300	ug/kg	P	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE3a
GPL ID: 204159-019-019-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 04:04
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	9100	ug/kg	U	1
PCB-1221	BQL	9100	ug/kg	U	1
PCB-1232	BQL	9100	ug/kg	U	1
PCB-1242	BQL	9100	ug/kg	U	1
PCB-1248	BQL	9100	ug/kg	U	1
PCB-1254	BQL	9100	ug/kg	U	1
PCB-1260	42000	9100	ug/kg	P	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE3b
GPL ID: 204159-020-020-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 00:00
Prep Batch 54304

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 04:32
Analysis Batch 53864

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	7000	ug/kg	U	1
PCB-1221	BQL	7000	ug/kg	U	1
PCB-1232	BQL	7000	ug/kg	U	1
PCB-1242	BQL	7000	ug/kg	U	1
PCB-1248	BQL	7000	ug/kg	U	1
PCB-1254	BQL	7000	ug/kg	U	1
PCB-1260	40000	7000	ug/kg	P	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE3c
GPL ID: 204159-021-021-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 05:56
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	9200	ug/kg	U	1
PCB-1221	BQL	9200	ug/kg	U	1
PCB-1232	BQL	9200	ug/kg	U	1
PCB-1242	BQL	9200	ug/kg	U	1
PCB-1248	BQL	9200	ug/kg	U	1
PCB-1254	BQL	9200	ug/kg	U	1
PCB-1260	43000	9200	ug/kg	P	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE5a
GPL ID: 204159-022-022-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 07:20
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	5200	ug/kg	U	1
PCB-1221	BQL	5200	ug/kg	U	1
PCB-1232	BQL	5200	ug/kg	U	1
PCB-1242	BQL	5200	ug/kg	U	1
PCB-1248	BQL	5200	ug/kg	U	1
PCB-1254	BQL	5200	ug/kg	U	1
PCB-1260	1800	5200	ug/kg	JP	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE5b
GPL ID: 204159-023-023-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 18:36
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	6000	ug/kg	U	1
PCB-1221	BQL	6000	ug/kg	U	1
PCB-1232	BQL	6000	ug/kg	U	1
PCB-1242	BQL	6000	ug/kg	U	1
PCB-1248	BQL	6000	ug/kg	U	1
PCB-1254	BQL	6000	ug/kg	U	1
PCB-1260	9100	6000	ug/kg	P	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID EPOLE5c
GPL ID: 204159-024-024-1/1
Matrix: Liquid
Date Collected: 04/23/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 19:04
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	9300	ug/kg	U	1
PCB-1221	BQL	9300	ug/kg	U	1
PCB-1232	BQL	9300	ug/kg	U	1
PCB-1242	BQL	9300	ug/kg	U	1
PCB-1248	BQL	9300	ug/kg	U	1
PCB-1254	BQL	9300	ug/kg	U	1
PCB-1260	BQL	9300	ug/kg	U	1

DAILY CONSTRUCTION QUALITY CONTROL REPORT

CONTRACTORS NAME: **BAY ASSOCIATES ENVIRONMENTAL, INC.** DATE: 4-23-2002

CONTRACTORS ADDRESS: **P.O. Box 21009**
Baltimore, MD 21228

REPORT NO: 20423-1

CONTRACT NO: **DACA65-01-D-0017**
D.O. #0005

PROJECT NAME: **PCB SURVEY - various locations in Pennsylvania**

LOCATION OF WORK: **Edgemont USARC, Pennsylvania**

WEATHER: Sunny, windy RAIN: _____ INCHES TEMP: _____ MAX. 40 MIN.

WIND DIRECTION: Varies OTHER WEATHER CONDITIONS: _____

1)

	CONTRACTORS OR SUBCONTRACTOR	C = CONT S = SUB	AREA OF RESPONSIBILITY
1	BAY ASSOCIATES ENVIRONMENTAL, INC.	C	ENVIRONMENTAL CONTRACTOR
2	HARRY B. MILLER CO., INC.	S	ELECTRICAL

2) WORK PERFORMED TODAY (INDICATE IDENTITY OF CONTRACTOR AND SUB-CONTRACTORS, LOCATION AND DESCRIPTION OF WORK): H+ Safety meeting 8:34.

Harry B Miller - Sub
John Pontier
Chris Seymour
Angela Peyton
Keldra Bortka
Jessica Lackey
} Edgemont USARC 8:00 start electrical sub arrive 8:30

Start pad mount
Then 16 pole mount

3) SAMPLES COLLECTED:

E Pad 1 - 8:55 done
E Pole 1 - 9:25 done
E Pole 2 - 10:50 done
E Pole 3 - 12:20 done → LUNCH
E Pole 4 - 3:00 done

DAILY CONSTRUCTION QUALITY CONTROL REPORT

4) RESULTS OF SURVEILLANCE (INCLUDE SATISFACTORY WORK COMPLETED, OR DEFICIENCIES WITH ACTION TO BE TAKEN):

Satisfactory work completed
15 pole & transformer.
1 pad

Start 8AM
Complete 3PM

plan to meet at N. Penn.
4/24 at 7:45 AM.

5) VERBAL INSTRUCTIONS GIVEN BY GOVERNMENT PERSONNEL (INCLUDE NAME, TIME, PLACE, INSTRUCTIONS AND RESULTANT ACTIONS):

→ DO NOT REENERGIZE Edge Pole 2
(took picture of connecting piece)
per Kendra Borka 99th Regional Environmental Specialist.

→ Count actually 16 total (per her recollection - Kendra Borka)
15 pole + 1 pad

DAILY CONSTRUCTION QUALITY CONTROL REPORT

6) JOB SAFETY (INCLUDE DEFICIENCIES AND CORRECTIVE ACTIONS):

Safety meeting performed,
NO INCIDENTS TO REPORT

Sampling Log Transformer Sampling at Edgemont USARC, Pennsylvania

Sample No.	Sample Location	Date	Sample Location		Sample Collection		Sampler's Initials	Sample Size	Type of Analysis	Pole or Pad Mounted	Photo Taken & Logged	Sample Labeled	COC Complete	Decon. Complete
			Start Time	End Time	Start Time	End Time								
EPAD1	Edge-Pad 1	4/23	8:45	9:02	8:58	9:00	CS	40ml	PCB	PAD	✓	✓	✓	✓ bagged
EPole1 a	Edge Pole 1a	4/23	9:15	9:50	9:36	9:38	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole1 b	Edge Pole 1b		9:15	9:50	9:30	9:35	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole1 C	Edge Pole 1c		9:15	9:50	9:25	9:28	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole2 A	Edge Pole 2		10:00	10:50	10:05	10:07	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole2 B	Edge Pole 2		10:00	10:50	10:10	10:13	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole2 C	Edge Pole 2		10:00	10:50	10:25	10:28	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole4 A	Edge Pole 4		11:00	11:45	11:30	11:38	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole4 B	Edge Pole 4		11:00	11:45	11:20	11:25	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole4 C	Edge Pole 4		11:00	11:45	11:11	11:18	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole3 A	Edge Pole 3		11:45	12:30	12:09	12:14	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole3 B	Edge Pole 3		11:45	12:30	12:04	12:08	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole3 C	Edge Pole 3		11:45	12:30	NOON	12:02	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole5 A	Edge Pole 5		2:00	2:30	2:08	2:09	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole5 B	Edge Pole 5		2:00	2:30	2:09	2:13	CS	40ml	PCB	Pole	✓	✓	✓	✓
EPole5 C	Edge Pole 5		2:00	2:30	2:14	2:25	CS	40ml	PCB	Pole	✓	✓	✓	✓

Samples collected by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

Photographic Log Transformer Sampling at Edgemont USARC, Pennsylvania

Date	Time	Roll Number	Picture Number	Photographer *(Initials)*	Site Location	Direction facing	Sample No. Documented	Additional Comments
4/23	9:45	DIGIT	#10	jdl	Pad #1 Edgem	SE	EPad 1	
4/23	9:21	DIGIT	#11	jdl	Pole #1 Edgem	ENE	EPole 1a " " 1b " " 1c	
4/23	10:04	DIGIT	#12	jdl	Pole #2 Edge.	SE	EPole 2	
4/23	11:12	DIGIT	#13	jdl	Pole #4 Edge	NE	EPole 4	
4/23	11:15	DIGIT	#14	jdl	Pole #3 Edge.	S	EPole 3	
4/23	2:15	DIGIT	#15	jdl	Pole #5 Edge	W	EPole 5	K-span USARC in background
4/23		DIGIT	16	jdl				storage IDW

Photos taken by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

GPL LABORATORIES, LLLP

202 Perry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference: EDGEMONT USARC UNO-0005

1 of 2 Pgs.

EDGEMONT USARC / AMSA

Project: PCB Sampling & Analysis
Client: US Army Corps of Engineers
Send Results To: Bay Associates Environmental
Address: PO Box 21009
Baltimore, MD. 21228
Phone: 410-418-4880

Turnaround Time	Normal
# of Containers	1ea
Container Type	40ml
Preservative Used	4°C
Type of Analysis	PCB

EDGEMONT Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	PCB	Lab Cooler No.	CLIENT COMMENTS
EPAD1	4/26	8:55	Oil	CS	X		
EPole1a		9:38					
EPole1b		9:34					
EPole1c		9:25					
EPole2a		10:07					
EPole2b		10:23					
EPole2c		10:28					
EPole4a		11:38					
EPole4b		11:25					
EPole4c		11:17					
EPole3a		12:14					
EPole3b		12:08					

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	4/27/16 5:30			[signature]	4/27/16 3:30pm
Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
Relinquished By:	Date/Time	Received By:	Lab Comments:		Temp:

G.P. W.O. _____

GPI LABORATORIES, LLLP

20 [illegible]ry Parkway
Gaithers[illegible]g, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference: EDGEMONT USARC UND-0005

2 of 2 Pgs.

EDGEMONT USARC / AMSA

Project: PCB Sampling & Analysis
Client: US Army Corps of Engineers
Send Results To: Bay Associates Environmental
Address: PO Box 21009
Baltimore MD 21228
Phone: 410-418-4880

Turnaround Time	Normal
# of Containers	1 eq.
Container Type	40ml
Preservative Used	4°C
Type of Analysis	PCB

EDGEMONT Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	PCB	Lab Cooler No.	CLIENT COMMENTS
EPb63c	4/23/02	12:02	oil	CS	✓		
EPb65a		2:09			✓		
EPb65b		2:13			✓		
EPb65c		2:25			✓		

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	4/24/02 3:31			[signature]	4/25/02 7:50
Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
Relinquished By:	Date/Time	Received By:	Lab Comments:		Temp:

G.P. W.O.

ATTACHMENT 3

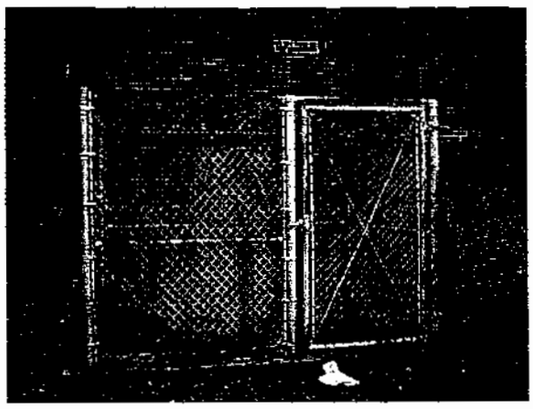
Horsham Survey & Sampling Documentation

Horsham Memorial USARC

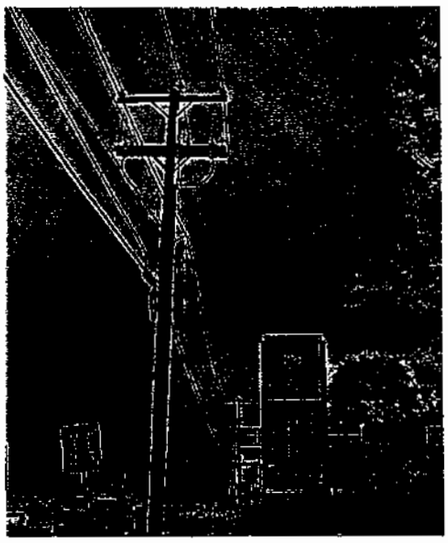
HPad1
04/25/2002

Pad mount transformer located next to the main USARC building

IDW was placed in a plastic bag, labeled as HPad1 and placed in a DOT-shippable 5-gallon pail for Horsham IDW.



Disconnects for the pad mount located on the pole by Easton Street, next to the Coastal gas station



The 5 gallon pail of IDW was placed in the haz-shed in the sub shop, located in the AMSA maintenance building. Kendra Borka's business card was affixed to the top of the pail and included her phone numbers.

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID HPAD1
GPL ID: 204159-029-029-1/1
Matrix: Liquid
Date Collected: 04/25/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 21:24
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	8400	ug/kg	U	1
PCB-1221	BQL	8400	ug/kg	U	1
PCB-1232	BQL	8400	ug/kg	U	1
PCB-1242	BQL	8400	ug/kg	U	1
PCB-1248	BQL	8400	ug/kg	U	1
PCB-1254	BQL	8400	ug/kg	U	1
PCB-1260	81000	8400	ug/kg	P	1

DAILY CONSTRUCTION QUALITY CONTROL REPORT

CONTRACTORS NAME: **BAY ASSOCIATES ENVIRONMENTAL, INC.** DATE: 3-28-2002

CONTRACTORS ADDRESS: **P.O. Box 21009**
Baltimore, MD 21228

REPORT NO: ~~3477~~ 020125-1

CONTRACT NO: **DACA65-01-D-0017**
D.O. #0005

PROJECT NAME: **PCB SURVEY - various locations in Pennsylvania**

LOCATION OF WORK: **Horsham Memorial USARC, Pennsylvania**

WEATHER: Cloudy RAIN: 0 INCHES TEMP: _____ MAX. 40 MIN.

WIND DIRECTION: _____ OTHER WEATHER CONDITIONS: _____

1)

	CONTRACTORS OR SUBCONTRACTOR	C = CONT S = SUB	AREA OF RESPONSIBILITY
1	BAY ASSOCIATES ENVIRONMENTAL, INC.	C	ENVIRONMENTAL CONTRACTOR
2	HARRY B. MILLER CO., INC.	S	ELECTRICAL

2) WORK PERFORMED TODAY (INDICATE IDENTITY OF CONTRACTOR AND SUB-CONTRACTORS, LOCATION AND DESCRIPTION OF WORK):

disconnect and sample 1 pad mount

Jess, John, Chris } 7:30

Kendra - 7:50

3) SAMPLES COLLECTED:

1 Pad mount

DAILY CONSTRUCTION QUALITY CONTROL REPORT

4) RESULTS OF SURVEILLANCE (INCLUDE SATISFACTORY WORK COMPLETED, OR DEFICIENCIES WITH ACTION TO BE TAKEN):

Pole with disconnects on 611 near abandoned gas station.

Electrician contacting PECO to see if we can disconnect

PECO Electrician arrives at 9:00 AM

5) VERBAL INSTRUCTIONS GIVEN BY GOVERNMENT PERSONNEL (INCLUDE NAME, TIME, PLACE, INSTRUCTIONS AND RESULTANT ACTIONS):

Meeting taking place, can't disconnect until 9 AM

DAILY CONSTRUCTION QUALITY CONTROL REPORT

6) JOB SAFETY (INCLUDE DEFICIENCIES AND CORRECTIVE ACTIONS):

No deficiencies

Sampling Log Transformer Sampling at Horsham Memorial USARC, Pennsylvania

Sample No.	Sample Location	Date	Sample Location		Sample Collection		Sampler's Initials	Sample Size	Type of Analysis	Pole or Pad Mounted	Photo Taken & Logged	Sample Labeled	COC Complete	Decon. Complete
			Start Time	End Time	Start Time	End Time								
HPAD1	HPAD1	4/25	9:10	9:20	9:13	9:15	CS	40ml	PCB	PAD	✓	✓	✓	✓

Samples collected by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

Photographic Log Transformer Sampling at Horsham Memorial USARC, Pennsylvania

Date	Time	Roll Number	Picture Number	Photographer *(Initials)*	Site Location	Direction facing	Sample No. Documented	Additional Comments
4/25	7:40	DIGIT	33	JdI	Horsham	W	HPAD1	transformer
4/25	7:42	DIGIT	34	JdI	Horsham	W	HPAD1	disconnects
4	9:20	4	35	JdI	4			PECCO
4	9:25	4	36	JdI	4			PECCO

Photos taken by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

GPI LABORATORIES, LLP

20 ry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference: Horsham Memorial UNO-005

1 of 1 Pgs.

Horsham MEMORIAL USARC

Project: PCB sampling + Analysis
Client: US Army Corps of Engineers
Send Results To: Bay Associates Environmental
Address: PO Box 21009
Baltimore MD 21228
Phone:

Turnaround Time	NORM
# of Containers	1
Container Type	40M
Preservative Used	4°C
Type of Analysis	PCB

Hm Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	PCB	Lab Cooler No.	CLIENT COMMENTS
HPAD1	4/25	9:15	OL	CS	✓		

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	4/25/01 3:30			[signature]	4/25/01 3:39
Relinquished By:	Date/Time	Received By:	Date/Time / Shipper:	Airbill No.:	
Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:	

G.P. W.O. _____

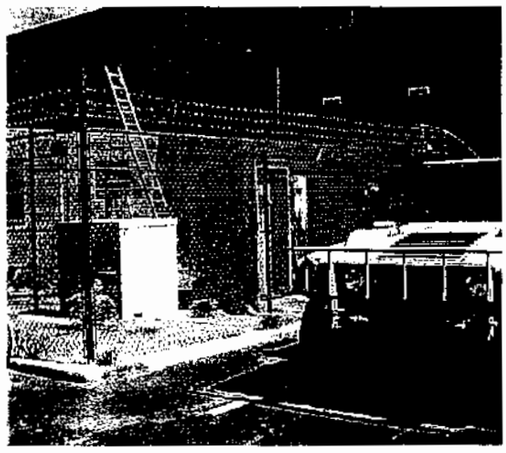
ATTACHMENT 4

Germantown Survey & Sampling Documentation

Germantown Veterans Memorial USARC

GVPad1
04/24/2002

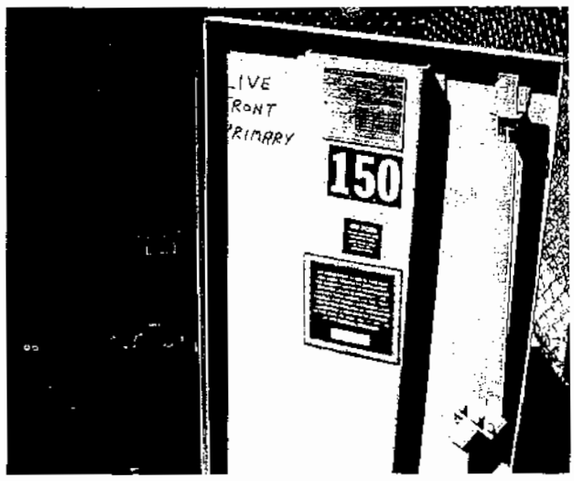
Pad mount transformer located behind the main USARC building. Transformer is the newer unit on the left of the photo.



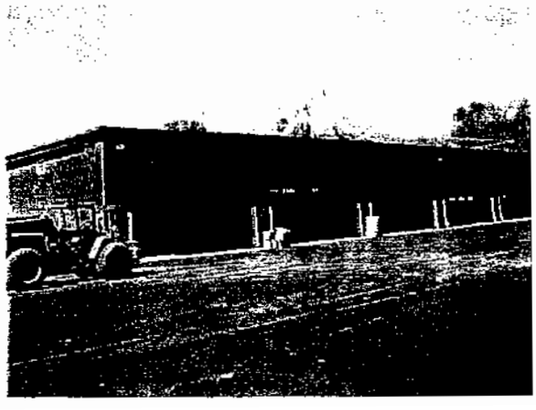
BAE labeled the transformer with a paint marker as GVPad1.

IDW was placed in a plastic bag, labeled as GVPad1 and placed in a DOT-shippable 5-gallon pail for Germantown IDW.

Prior to BAE arriving on-site, the transformer had been labeled on the inside of the cabinet door as containing NO PCBs.



The 5-gal pail of IDW was placed in a storage building to the left of the facility's large parking area.



GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID GVPAD1
GPL ID: 204159-030-030-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 21:52
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	6800	ug/kg	U	1
PCB-1221	BQL	6800	ug/kg	U	1
PCB-1232	BQL	6800	ug/kg	U	1
PCB-1242	BQL	6800	ug/kg	U	1
PCB-1248	BQL	6800	ug/kg	U	1
PCB-1254	BQL	6800	ug/kg	U	1
PCB-1260	BQL	6800	ug/kg	U	1

DAILY CONSTRUCTION QUALITY CONTROL REPORT

CONTRACTORS NAME: **BAY ASSOCIATES ENVIRONMENTAL, INC.** DATE: 4/24/02

CONTRACTORS ADDRESS: **P.O. Box 21009**
Baltimore, MD 21228

REPORT NO: 020424-2

CONTRACT NO: **DACA65-01-D-0017**
D.O. #0005

PROJECT NAME: **PCB SURVEY - various locations in Pennsylvania**

LOCATION OF WORK: **Germantown Veterans Memorial USARC, Pennsylvania**

WEATHER: Sunny RAIN: _____ INCHES TEMP: 50 MAX. 40 MIN.

WIND DIRECTION: _____ OTHER WEATHER CONDITIONS: windy

1)

	CONTRACTORS OR SUBCONTRACTOR	C = CONT S = SUB	AREA OF RESPONSIBILITY
1	BAY ASSOCIATES ENVIRONMENTAL, INC.	C	ENVIRONMENTAL CONTRACTOR
2	HARRY B. MILLER CO., INC.	S	ELECTRICAL

2) WORK PERFORMED TODAY (INDICATE IDENTITY OF CONTRACTOR AND SUB-CONTRACTORS, LOCATION AND DESCRIPTION OF WORK):

Kendra
Angela
John
Chris
Jess. } arrive 10:55

3) SAMPLES COLLECTED:

PCB - 1 pad.

DAILY CONSTRUCTION QUALITY CONTROL REPORT

4) RESULTS OF SURVEILLANCE (INCLUDE SATISFACTORY WORK COMPLETED, OR DEFICIENCIES WITH ACTION TO BE TAKEN):

Satisfactory work completed

5) VERBAL INSTRUCTIONS GIVEN BY GOVERNMENT PERSONNEL (INCLUDE NAME, TIME, PLACE, INSTRUCTIONS AND RESULTANT ACTIONS):

None to report

DAILY CONSTRUCTION QUALITY CONTROL REPORT

6) JOB SAFETY (INCLUDE DEFICIENCIES AND CORRECTIVE ACTIONS):

No deficiencies to report

Sampling Log Transformer Sampling at Germantown Veterans Memorial, Pennsylvania

Sample No.	Sample Location	Date	Sample Location		Sample Collection		Sampler's Initials	Sample Size	Type of Analysis	Pole or Pad Mounted	Photo Taken & Logged	Sample Labeled	COC Complete	Decon. Complete
			Start Time	End Time	Start Time	End Time								
GV PAD1	GV PAD1	4/24	10:57	11:20	11:13	11:16	CS	40ml	~~8~~ PCB	PAD	✓	✓	✓	✓

Samples collected by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

Photographic Log Transformer Sampling at Germantown Veterans Memorial USARC, Pennsylvania

r behind USARC bld

Date	Time	Roll Number	Picture Number	Photographer *(Initials)*	Site Location	Direction facing	Sample No. Documented	Additional Comments
4/24	10:58	DIGIT ~~22~~	23	jdl	Germantown	W	GVPAD1	close-up MEP ab wrong Thing
4/24	10:58	DIGIT ~~23~~	24	jdl	Germantown	NW	GVPAD1	~~older~~ newer unit on MEP ~~left~~ left
4/24	11:10	DIGIT	25	jdl	Germantown	S	GVPAD1	actual transformer "No PCB" Labels
4/24	11:10	DIGIT	26	jdl	Germantown	S	GVPAD1	farther away
4/24	11:15	DIGIT	27 ~~28~~	jdl	"			27 close-up, 28, oms bldg wide view DW Storage

Photos taken by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

GPJ LABORATORIES, LLLP

20 ry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

GERMANTOWN VETERANS MEMORIAL USARC

Contract #/Billing Reference: GERMANTOWN VETERANS MEMORIAL UNO-005

1 of 1 Pgs.

Project: PCB Sampling & Analysis
Client: US Army Corps of Engineers
Send Results To: Bay Associates Environmental
Address: PO Box 21009
Baltimore MD 21228
Phone: 410-418-4880

GPJ Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Turnaround Time: NORM	# of Containers: 1 ea	Container Type: 40ml	Preservative Used: 4°C	Type of Analysis: PCB	Lab Cooler No.	CLIENT COMMENTS
GVPAD1	4/24	11:16	Oil	CS					✓		

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	4/25/06 3:30			[signature]	4/25/06 3:30 pm
Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
Relinquished By:	Date/Time	Received By:	Lab Comments:		Temp:

G.P. W.O. _____

ATTACHMENT 5

Philadelphia Survey & Sampling Documentation

DAILY CONSTRUCTION QUALITY CONTROL REPORT

CONTRACTORS NAME: **BAY ASSOCIATES ENVIRONMENTAL, INC.** DATE: 04/24/07

CONTRACTORS ADDRESS: **P.O. Box 21009**
Baltimore, MD 21228

REPORT NO: 20424-3

CONTRACT NO: **DACA65-01-D-0017**
D.O. #0005

PROJECT NAME: **PCB SURVEY - various locations in Pennsylvania**

12:45

LOCATION OF WORK: **Philadelphia Memorial AFRC, Pennsylvania**

WEATHER: Sunny RAIN: 0 INCHES TEMP: 65 MAX. 60 MIN.

WIND DIRECTION: Calm OTHER WEATHER CONDITIONS:

1)

	CONTRACTORS OR SUBCONTRACTOR	C = CONT S = SUB	AREA OF RESPONSIBILITY
1	BAY ASSOCIATES ENVIRONMENTAL, INC.	C	ENVIRONMENTAL CONTRACTOR
2	HARRY B. MILLER CO., INC.	S	ELECTRICAL

2) WORK PERFORMED TODAY (INDICATE IDENTITY OF CONTRACTOR AND SUB-CONTRACTORS, LOCATION AND DESCRIPTION OF WORK):

Angela
John - S/D
Kendra
Jess
Chris

3) SAMPLES COLLECTED:

None - two dry type transformers in electrical room

DAILY CONSTRUCTION QUALITY CONTROL REPORT

4) RESULTS OF SURVEILLANCE (INCLUDE SATISFACTORY WORK COMPLETED, OR DEFICIENCIES WITH ACTION TO BE TAKEN):

NO WORK COMPLETED

Transformers were dry types and did not need to be sampled

5) VERBAL INSTRUCTIONS GIVEN BY GOVERNMENT PERSONNEL (INCLUDE NAME, TIME, PLACE, INSTRUCTIONS AND RESULTANT ACTIONS):

Angelee Peyton - USACE - Norfolk - NO SAMPLING — Dry type transformer

DAILY CONSTRUCTION QUALITY CONTROL REPORT

6) JOB SAFETY (INCLUDE DEFICIENCIES AND CORRECTIVE ACTIONS):

Transformers not properly identified prior to Sitting
- Site missed during site visit ~~[illegible]~~ Improperly Identified by USACE / 99th

ATTACHMENT 6

Bristol Survey & Sampling Documentation

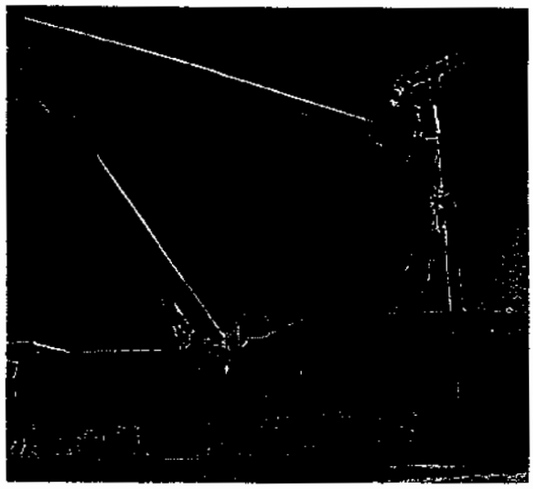
Bristol Veterans Memorial USARC

BPole1
04/24/2002

Pole mount single transformer located in the Organizational Maintenance Shop (OMS) area.

BAE labeled the transformer with a paint marker as BPole1.

IDW was placed in a plastic bag, labeled as BPole1 and placed in a DOT-shippable 5-gallon pail for Bristol IDW.

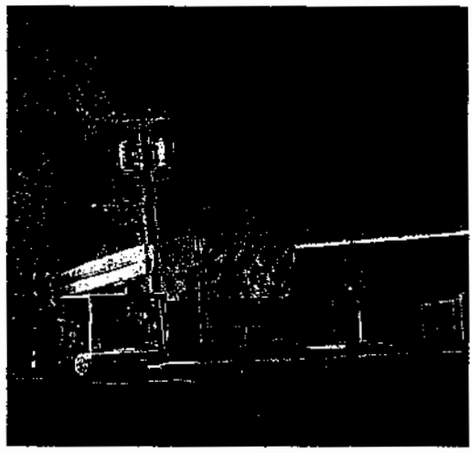


BPole2
04/24/2002

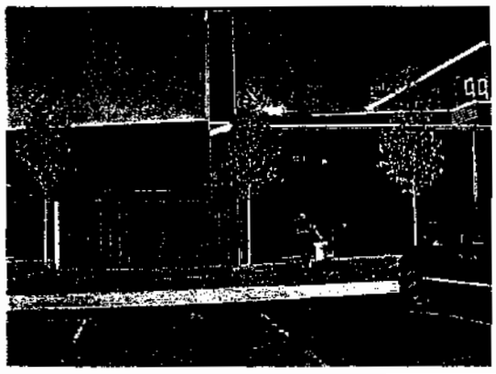
Pole mount triple transformers located next to the main USARC building.

BAE labeled the transformer with a marker as a, b, and c (from right to left, as viewed in this photo). 'a' is to the right in the photo, 'c' is to the left of the photo, and 'b' is in line with the pole, but is mostly blocked from view by the pole.

IDW was placed in a plastic bag, labeled as BPole2 and placed in a DOT-shippable 5-gallon pail for Bristol IDW.



The 5 gallon pail of IDW was placed in the mechanical room located next to the wood fence. Kendra Borka's business card was affixed to the top of the pail and included her phone numbers.



GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID BPOLE1
GPL ID: 204159-025-025-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 19:32
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	9300	ug/kg	U	1
PCB-1221	BQL	9300	ug/kg	U	1
PCB-1232	BQL	9300	ug/kg	U	1
PCB-1242	BQL	9300	ug/kg	U	1
PCB-1248	BQL	9300	ug/kg	U	1
PCB-1254	BQL	9300	ug/kg	U	1
PCB-1260	BQL	9300	ug/kg	U	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID BPOLE2a
GPL ID: 204159-026-026-1/I
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 20:00
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	7800	ug/kg	U	1
PCB-1221	BQL	7800	ug/kg	U	1
PCB-1232	BQL	7800	ug/kg	U	1
PCB-1242	BQL	7800	ug/kg	U	1
PCB-1248	BQL	7800	ug/kg	U	1
PCB-1254	BQL	7800	ug/kg	U	1
PCB-1260	BQL	7800	ug/kg	U	1

Summary of Analytical Results

Client ID BPOLE2b
GPL ID: 204159-027-027-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 20:28
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	7800	ug/kg	U	1
PCB-1221	BQL	7800	ug/kg	U	1
PCB-1232	BQL	7800	ug/kg	U	1
PCB-1242	BQL	7800	ug/kg	U	1
PCB-1248	BQL	7800	ug/kg	U	1
PCB-1254	BQL	7800	ug/kg	U	1
PCB-1260	BQL	7800	ug/kg	U	1

GPL LABORATORIES, LLLP

Summary of Analytical Results

Client ID BPOLE2c
GPL ID: 204159-028-028-1/1
Matrix: Liquid
Date Collected: 04/24/2002
Date Received: 04/26/2002

Prep Method: SW3580A
Prep Date: 04/30/2002
Prep Time: 12:05
Prep Batch 54309

Analytical Method: SW8082
Date Analyzed: 05/14/2002
Time Analyzed 20:56
Analysis Batch 53873

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
PCB-1016	BQL	6500	ug/kg	U	1
PCB-1221	BQL	6500	ug/kg	U	1
PCB-1232	BQL	6500	ug/kg	U	1
PCB-1242	BQL	6500	ug/kg	U	1
PCB-1248	BQL	6500	ug/kg	U	1
PCB-1254	BQL	6500	ug/kg	U	1
PCB-1260	BQL	6500	ug/kg	U	1

DAILY CONSTRUCTION QUALITY CONTROL REPORT

CONTRACTORS NAME: **BAY ASSOCIATES ENVIRONMENTAL, INC.** DATE: 04-24-02

CONTRACTORS ADDRESS: **P.O. Box 21009**
Baltimore, MD 21228

REPORT NO: 20424-4

CONTRACT NO: **DACA65-01-D-0017**
D.O. #0005

PROJECT NAME: **PCB SURVEY - various locations in Pennsylvania**

LOCATION OF WORK: **Bristol Veterans Memorial USARC, Pennsylvania**

WEATHER: _____ RAIN: _____ INCHES TEMP: _____ MAX. _____ MIN.

WIND DIRECTION: _____ OTHER WEATHER CONDITIONS: _____

1)

	CONTRACTORS OR SUBCONTRACTOR	C = CONT S = SUB	AREA OF RESPONSIBILITY
1	BAY ASSOCIATES ENVIRONMENTAL, INC.	C	ENVIRONMENTAL CONTRACTOR
2	HARRY B. MILLER CO., INC.	S	ELECTRICAL

2) WORK PERFORMED TODAY (INDICATE IDENTITY OF CONTRACTOR AND SUB-CONTRACTORS, LOCATION AND DESCRIPTION OF WORK):

John-Sub
Chris
Jody
Angela
Kendra } arrive 7:00 finish sampling 3:00

3) SAMPLES COLLECTED:

PCB samples- See sample log
start BPOLE1 (single)
BPOLE2 (triple)

DAILY CONSTRUCTION QUALITY CONTROL REPORT

4) RESULTS OF SURVEILLANCE (INCLUDE SATISFACTORY WORK COMPLETED, OR DEFICIENCIES WITH ACTION TO BE TAKEN):

All work completed satisfactory

5) VERBAL INSTRUCTIONS GIVEN BY GOVERNMENT PERSONNEL (INCLUDE NAME, TIME, PLACE, INSTRUCTIONS AND RESULTANT ACTIONS):

None to report

DAILY CONSTRUCTION QUALITY CONTROL REPORT

6) JOB SAFETY (INCLUDE DEFICIENCIES AND CORRECTIVE ACTIONS):

No deficiencies

Sampling Log Transformer Sampling at Bristol Veterans Memorial USARC, Pennsylvania

Sample No.	Sample Location	Date	Sample Location		Sample Collection		Sampler's Initials	Sample Size	Type of Analysis	Pole or Pad Mounted	Photo Taken & Logged	Sample Labeled	COC Complete	Decon. Complete
			Start Time	End Time	Start Time	End Time								
BPOLE1	BPOLE1	4/24	2:00	2:25	2:15	2:20	CS	40ml	PCB	Pole	✓	✓	✓	✓
BPOLE2 a	BPOLE 2	4/24	2:30	3:00	2:40	2:45	CS	40ml	PCB	Pole	✓	✓	✓	✓
BPole2 b	BPOLE 2	4/24	2:30	3:00	2:45	2:50	CS	40ml	PCB	Pole	✓	✓	✓	✓
BPole2 c	BPOLE 2	4/24	2:30	3:00	2:50	2:58	CS	40ml	PCB	Pole	✓	✓	✓	✓

Samples collected by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

Photographic Log Transformer Sampling at Bristol Veterans Memorial USARC, Pennsylvania

Date	Time	Roll Number	Picture Number	Photographer *(Initials)*	Site Location	Direction facing	Sample No. Documented	Additional Comments
4/24	2:01	DIGIT	29	jdl	Bristol	North	BPOLE2 a,b,c	USARC - on right. triple
4/24	2:05	DIGIT	30	jdl	Bristo	SW	BPOLE1	single MEP
4/24	2:10	DIGIT	31	jdl	Bristol	—	BPOLE1	picture as truck + guys
4/24	2:15	"	32	jdl	"			IDW storage

Photos taken by: Bay Associates Environmental, Inc. for the US Army Corps of Engineers – Norfolk District

GPI LABORATORIES, LLLP

202 [illegible]y Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference: Bristol Veterans Memorial UVD-005

Page 1 of 1 Pgs.

BRISTOL VETERANS MEMORIAL USACE

Project: PCB Sampling & Analysis
Client: US Army Corps of Engineers
Send Results To: Bay Associates Environmental
Address: Po Box 21009
Baltimore MD 21228
Phone: 410-418-4880

BVM Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	PCB	Lab Cooler No.	CLIENT COMMENTS
BPDE1	4/24	2:20	Oil	CS	✓		
BPDE2a	4/24	2:45	Oil	CS	✓		
BPDE2b	4/24	2:50	Oil	CS	✓		
BPDE2c	4/24	2:58	Oil	CS	✓		

Turnaround Time: 1 WEEK
# of Containers: 1 ea
Container Type: 40ml
Preservative Used: HCl
Type of Analysis:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
Chris Seyer	4/25/08 3:30				4/25/08 3:30
Relinquished By:	Date/Time	Received By:	Date/Time / Shipper:	Airbill No.:	
Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:	

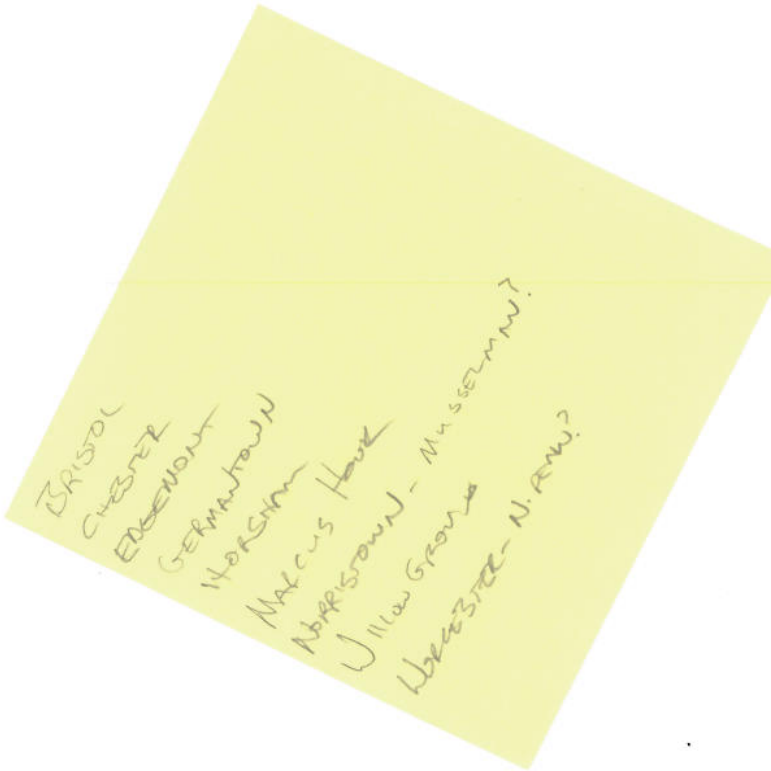
G.P. W.O. _____

ATTACHMENT 7

Laboratory QA/QC Data

US Army Corps
of Engineers
Baltimore District

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN 79TH ARMY RESERVE COMMAND PENNSYLVANIA



Prepared for:

79th U.S. Army Reserve Command
Naval Air Station
Willow Grove, Pennsylvania 19090-5110

Prepared By:

U.S. Army Corps of Engineers
Baltimore District (CENAB-PL-EM)
Baltimore, Maryland 21203-1715

1 August 1995

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN

79TH ARMY RESERVE COMMAND

PENNSYLVANIA

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
79TH ARMY RESERVE COMMAND
PENNSYLVANIA

INTRODUCTION

The Natural Resource Management Plan (NRMP) is mandated by Army Regulation (AR) 420-74 which prescribes policies, procedures, and standards for the conservation, management, and restoration of land and the renewable natural resources of that land, consistent with, and in support of the military mission and national policies. The scope of the NRMP includes the conservation, management, and utilization of soils, water areas, croplands, rangelands, forests, fish and wildlife. The objective of the NRMP is to comply with environmental protection and enhancement policies and procedures as outlined in AR 200-1 (Environmental Protection and Enhancement) and to protect and improve the landscape including its flora and fauna.

This Programmatic NRMP has been prepared for the 79th Army Reserve Command (ARCOM) to address the conservation, utilization, and management of renewable natural resources at 32 U.S. Army Reserve sites located in Pennsylvania. This plan incorporates specific resource management plans for five resource categories where applicable within the 32 sites:

- Parts I and II - Land Management (general and grounds maintenance)

- Part III - Forest Management

- Part IV - Fish and Wildlife Management

- Part V - Outdoor Recreation and Cultural Values

A comprehensive approach will be used to address these categories on a broad command-wide scale. The information contained in this document can be combined with information in Technical Manuals 5-630, 5-631, 5-633, and 5-635 to develop site-specific NRMPs if desired. Sites will be grouped according to physiographic region so that best management practices (BMPs) can be addressed for sites with similar physical and biological conditions. According to AR 420-74, Parts I and II will be prepared by installations having 500 or more acres of improved, semi-improved and unimproved grounds combined, or 50 or more acres of improved grounds; Part III will be prepared by installations having 100 or more acres of commercial forest land; Part IV will be prepared by installations having land and water areas suitable for the management of fish and wildlife resources; and Part V will be prepared by installations with outdoor recreation programs which depend on maintenance and management of the natural resources. Because the 79th ARCOM sites do not meet the acreage requirements of AR 420-74, the preparation of a NRMP is not required. However, a NRMP is highly desirable. Therefore, a NRMP that addresses BMPs for grounds maintenance, forest management, fish and wildlife management, and recreational or cultural values, where applicable, is presented here.

The NRMP will also incorporate the requirements of the National Environmental Policy Act (NEPA; 40 CFR, Parts 1500 - 1508) and include preparation of an Environmental Assessment (EA). The effects of implementing the NRMP will be combined in one document which also addresses the effects of operating the USARC facilities. This document is entitled *79th Army Reserve Command Programmatic Environmental Assessment, Pennsylvania* August 1995. No previous NRMP has been prepared for the 79th ARCOM base operations (BASOPS) supported facilities.

CONTENTS

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART I
GENERAL

TABLE OF CONTENTS

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART I - GENERAL

The General aspects of the Natural Resource Management Plan (NRMP) will incorporate baseline environmental and natural resource inventory information which will be useful in identifying appropriate management measures. Technical Manual 5-630 is the guide that should be referenced for further information pertaining to Part I (General) and Part II (Land Management and Grounds Maintenance).

1.0 ARCOM DESCRIPTION

1.1 Mission.

This NRMP addresses 32 facilities including U. S. Army Reserve Centers (USARC), Armed Forces Reserve Centers (AFRC) and Area Maintenance Support Activities (AMSA) administered by the 79th ARCOM in central and eastern Pennsylvania. (See Appendix A, Figure 1). Army Reserve combat units, combat support and combat service support units occupy thirty-two facilities, conducting administrative, classroom, maintenance and limited training activities. Tenant units include Army Reserve, Navy and U. S. Marine Corps Reserve (USMCR) units.

The mission of the 79th ARCOM is to support the unit readiness objectives of the U. S. Army Reserve Command and the United States Army. The continued operation of the 79th ARCOM has a direct affect on national security. The Army Reserves, in conjunction with the National Guard, comprise a majority of the Army force structure under the "Total Army" concept. The 79th ARCOM provides its subordinate units aid to deployment and combat readiness missions. (A list of 79th ARCOM facilities in Pennsylvania is provided in Appendix C, Table 1).

1.2 Location Description.

The 79th ARCOM has BASOPS responsibility for facilities throughout central and eastern Pennsylvania and New Jersey. As a basis for analysis, the thirty-two sites in Pennsylvania have been sub-divided into five geographic regions. These regions were defined based on physiographic province, political boundaries, air quality regions, and dominant urban centers.

1.2.1 Philadelphia-Piedmont Upland Region.

This region lies in the extreme southeast corner of Pennsylvania. It includes the City and County of Philadelphia and Bucks, Montgomery, Chester and Delaware Counties. This region includes a narrow band of Atlantic Coastal Plain which incorporates lowlands and intermediate uplands just west of the Delaware River. Bristol, Chester, Marcus Hook, and Philadelphia are located in the Coastal Plain. Ten reserve facilities ("reserve facility" refers to Army Reserve hosted facilities) lie within this region:

FACILITY LOCATION	COUNTY	TYPE OF UNITS ASSIGNED
Bristol, PA	Philadelphia	Artillery unit
Chester, PA	Delaware	Medical replacement units
Edgemont, PA	Delaware	AMSA, Transportation units
Germantown, PA	Philadelphia	Three Infantry units
Horsham, PA	Montgomery	Infantry Brigade HQ
Marcus Hook, PA	Delaware	Marine AMSA
Norristown, PA	Philadelphia	Civil Affairs and Medical units
Willow Grove, PA	Montgomery	ARCOM HQ, AMSA and Aviation units
Worcester, PA	Montgomery	Transportation and Engineer units

1.2.2 Piedmont Lowlands Region.

This region is part of the Piedmont Province (Piedmont Lowland Section and Gettysburg-Newark Lowland Section). It encompasses Adams, York and Lancaster Counties. Three reserve facilities lie within this region:

FACILITY LOCATION	COUNTY	TYPE OF UNITS ASSIGNED
Gettysburg, PA	Adams	Infantry unit
Lancaster, PA	Lancaster	Transportation and Medical units
York, PA	York	Supply unit

1.2.3 Great Valley Region.

This region is part of the Ridge and Valley Physiographic Province. This region encompasses Franklin, Cumberland, Perry, Dauphin, Lebanon, Berks, Lehigh, Northampton Counties and portions of York County within the Harrisburg-Carlisle-Hershey Metropolitan Statistical Area (MSA). Six reserve facilities lie within this region:

FACILITY LOCATION	COUNTY	TYPE OF UNITS ASSIGNED
Bethlehem, PA	Lehigh	Armor and Military Police units
Chambersburg, PA	Franklin	Infantry unit
Greencastle, PA	Franklin	AMSA

FACILITY LOCATION	COUNTY	TYPE OF UNITS ASSIGNED
Harrisburg, PA	Dauphin	USAR School, Judge Advocate General (JAG), Infantry and Medical units, as well as Navy and Marines Corps Reserve units
New Cumberland, PA	York	AMSA, Engineer and Public Affairs units
Reading, PA	Berks	Transportation and Military History units

1.2.4 Eastern Appalachian Region.

This region is the northeastern quadrant of the Ridge and Valley Physiographic Province (Appalachian Mountain Section). This region encompasses Juniata, Snyder, Northumberland, Columbia, Schuylkill, Luzerne, Wyoming, Carbon, Monroe and Lackawanna Counties. Seven reserve facilities lie within this region:

FACILITY LOCATION	COUNTY	TYPE OF UNITS ASSIGNED
Ashley, PA	Luzerne	Military Police and Medical units
Bloomsburg, PA	Columbia	Supply unit
Schuylkill Haven, PA	Schuylkill	Engineer and Armor units
Scranton, PA	Lackawanna	Engineer, Medical, Supply units and a USAR School
West Hazelton, PA	Luzerne	Engineer unit
Wilkes-Barre, PA	Luzerne	AMSA
Wilkes-Barre, PA	Luzerne	Engineer and Cavalry units

1.2.5 Western Appalachian.

This region is in the northwestern quadrant of the Ridge and Valley Physiographic Province (Appalachian Mountain Section). This region encompasses Mifflin, Centre, Clinton, Lycoming, Union and Sullivan Counties. Six reserve facilities lie within this region:

FACILITY LOCATION	COUNTY	TYPE OF UNITS ASSIGNED
Bellefonte, PA	Centre	Quartermaster and PAARNG units
Lewisburg, PA	Union	Supply unit
Lewiston, PA	Mifflin	Service Support unit
FACILITY LOCATION	COUNTY	TYPE OF UNITS ASSIGNED

Lock Haven, PA	Clinton	AMSA and an Infantry Battalion HQ
State College, PA	Centre	Maintenance unit
Williamsport, PA	Lycoming	Infantry, Maintenance and Quartermaster units

1.3 Site Description.

Most sites contain only a few acres of impervious area within their boundaries surrounded by a maintained lawn. All USARCs and AMSAs have some degree of landscaping including deciduous/evergreen trees and shrubs. Army Reserve Centers are generally located in areas zoned for commercial activities. USARCs are built on sites ranging from three (3) to twenty-seven (27) acres and contain two buildings including the reserve center and organizational maintenance shop (OMS). Area Maintenance Support Activities (AMSA) and Armed Forces Reserve Centers (AFRC) are also located in zoned commercial/industrial areas. AMSAs occupy sites ranging from five (5) acres to forty-four (44) acres. Two sites (Greencastle, Harrisburg) are located adjacent to an athletic field. No improved grounds such as cemeteries, golf courses, parade or drill grounds, are associated with any of the USARCs, AFRCs or AMSAs. No semi-improved grounds such as airfields, drop zones, small arms ranges, firebreaks, road shoulders, picnic areas, or wildlife food plots are associated with any of the 79th ARCOM sites although Willow Grove is located within a Naval Air Station.

In the Unimproved Ground Classification, pavements and buildings are included as is non-merchantable forest land. On all sites, there is a range of approximately 2 to 10 acres of impervious area. Several sites containing NIKE missile silos contain limited areas of non-merchantable forest land (Edgemont, Bristol, Worcester). Several sites (Germantown, Woodhaven, Wilkes Barre AMSA) have no grass and are completely paved. See Appendix A, Figures 2 through 33 for reserve facility site maps.

2.0 PHYSIOGRAPHY

The following information includes baseline environmental data to provide a framework for management recommendations. Although this information is regionally generalized, site specific conditions are provided where possible.

2.1 Climate.

Weather is defined as the condition of the atmosphere with respect to wind, temperature, and moisture at a particular place and time. Climate is weather over an extended period (Godfrey, 1980). The Piedmont Physiographic Province, which contains most of the 79th ARCOM sites, is a strip of land one thousand miles long, and oriented north to south, thus it is interesting to note that its climate is generally similar across the entire range. The average annual temperature range for eastern and central Pennsylvania ranges from - 7 degrees Fahrenheit (F) to 104 degrees F. May through August is the warmest period with an average daytime maximum temperature of 84.2 degrees F. December through February is the coldest period with an average minimal temperature of 25.2 degrees F. The average relative humidity is

76%, with July through September being most humid. The average wind speed is 9.6 miles per hour, with January through March being the windiest time period. Prevailing wind direction is generally westerly. Average precipitation for the area is 39.93 inches with the heaviest precipitation during July through October. Areas in the Appalachian Highland regions have an average annual precipitation of over 40 inches.

2.2 Topography.

Most reserve facilities are built on graded flat terrain with little topographical variance, however, some facilities are located in rolling terrain (Edgemont, York, State College). The Lowland and Intermediate Upland Sections of the Atlantic Coastal Plain are characterized by a flat upper-terrace surface cut by narrow, steep-sided valleys to open, shallow valleys. This section includes the Delaware River Floodplain (Marcus Hook). Local relief is very low although elevations range from 0 feet (sea level) to 200 feet above sea level. This section includes Marcus Hook, Folsom, Philadelphia, Chester, and Bristol.

The Piedmont Physiographic Province includes three sections: Piedmont Upland, Piedmont Lowland, and Gettysburg-Newark Lowland Sections. The Piedmont Upland Section (Edgemont, Germantown, Horsham, Norristown, Willow Grove, and Worcester) is characterized by broad gently rolling hills and valleys with elevations ranging from 100 to 1220 feet. The Piedmont Lowland Section (Lancaster, York) is made up of broad, moderately dissected valleys separated by broad, low hills. Karstic terrain, characterized by sinkholes, is common due to the presence of carbonate underlying rock which dissolves due to contact with groundwater or percolating surface water. Elevation ranges from 170 feet to 630 feet. The Gettysburg-Newark Lowland Section (Gettysburg) includes rolling lowlands with isolated hills and highlands. Elevation ranges from 40 to 1355 feet.

The Great Valley Section, which is part of the Ridge and Valley Physiographic Province (Bethlehem, Chambersburg, Greencastle, Harrisburg, New Cumberland, Reading) is characterized by a very broad, moderately dissected valley having a gently undulating surface with karstic terrain in the southern half. The Appalachian Mountain Section is also part of the Ridge and Valley Province. It contains long narrow ridges and broad to narrow valleys with some karstic terrain. Elevations are more variable ranging from 300 to 3135 feet. This section includes the remainder of the sites.

2.3 Geology.

(See Figure A, Appendix B) Atlantic Coastal Plain geology is characterized by an underlying rock type of unconsolidated to poorly consolidated sand and gravel, underlain by schist, gneiss, and other metamorphic rocks. These quaternary (0 - 2 million years) and tertiary (2 - 67 million years) sands, gravels, silts, and clays make up the bulk of unconsolidated material. The unconsolidated deposits are underlain by complex, faulted and folded metamorphic rocks. The drainage patterns of the Coastal Plain are dendritic. The geologic origin of the Coastal Plain is derived from fluvial (river) erosion and deposition processes, however, the Delaware River floodplain also includes glacial meltwater deposits.

The three sections of the Piedmont Province differ geologically primarily in underlying rock types. The Piedmont Upland Section is underlain by lower Paleozoic (probably Ordovician and Cambrian, 435 - 570 million years) schist, gneiss, quartzite, and other metamorphic rocks.

Granite and pegmatite are also present, with much of the terrain weathered to saprolite (disintegrated rock). This area is extremely complex with faulting and folding. The drainage patterns are dendritic. The Piedmont Lowland Section is underlain by dominantly carbonate rocks (limestone, dolomite, marble), phyllitic shale, and phyllite with some sandstone of Cambrian age (500 - 570 million years). This area is also complexly folded and faulted with dendritic and karstic drainage patterns. The Gettysburg-Newark Lowland Section is underlain by red and gray shale, siltstone, sandstone, and conglomerate; diabase of Triassic and Jurassic age (195 - 240 million years). The area's geologic structure is half-graben, low monoclinal with dominantly northwest - dipping beds. This section has dendritic drainages as well. All the Piedmont sections originate from fluvial erosion of moderately to deeply weathered bedrock of either metamorphic, or carbonate origin, except for the Gettysburg-Newark Lowland Section which eroded from more resistant bedrock. All three sections have undergone some periglacial mass wasting.

The geology of the Ridge and Valley Province varies greatly between the Great Valley and Appalachian Mountain Sections. The Great Valley Section is underlain by shale and sandstone on the northwest side and limestone and dolomite on the southeast side. It is of Ordovician age (435 - 500 million years). The geologic structure is a mixture of thrust sheets, napes, overturned folds and steep faults with many third and fourth order folds. The drainage patterns are both dendritic and karstic with a geological origin from fluvial erosion, glacial erosion and deposition in the east, and solution of carbonate rocks. The Appalachian Mountain Section is underlain by a wide variety of sedimentary rocks including sandstone, siltstone, shale, conglomerate, limestone, dolomite, and others ranging in age from Pennsylvanian (285 - 325 million years) to Ordovician (435 - 500 million years). The geologic structure consists of open and closed plunging folds having narrow hinges and planar limbs with thrust, reserve, and strike - slip faults. The drainage patterns in this section include trellis, angulate, and some karstic drainage patterns. This physiography originated from fluvial erosion, periglacial mass wasting, glacial erosion and deposition in the north and east, and solution of carbonate rocks.

2.4 Soils.

Soils at the 79th ARCOM reserve facilities are described below and in Table 2 (Appendix C).

2.4.1 Coastal Plain.

Soils of the Coastal Plain are primarily of the Howell - Fallsington association with a substrata of marine clay or sand. These soil series have slopes ranging from 3 to 8 percent and 0 to 3 percent, respectively. Fallsington soils have many limitations for uses including on-site sewage disposal or use as building sites with basements due to presence of a high water table. Howell soils have few limitations and are excellent for farming.

2.4.2 Piedmont Upland Section.

This region includes soils of five associations:

a. Chester - Glenelg
b. Edgemont - Highfield
c. Glenelg - Manor

d. Highfield - Arendtsville - Myersville
e. Lehigh - Brecknock - Neshaminy

2.4.2.1 The Chester - Glenelg Association.

The Chester-Glenelg Association is found on slopes 3 to 15 percent and 0 to 20 percent, respectively. They are excellent for crops and timber. They have moderate limitations to construction and on-site waste disposal primarily because of slopes and shallow depth to bedrock.

2.4.2.2 The Edgemont - Highfield Association.

The Edgemont-Highfield Association is found on slopes ranging from 3 to 20 percent. These soil series are excellent for corn and alfalfa, and good for woodland. Both series have moderate limitations which result from steep slopes, depth to bedrock, and coarse rock fragments.

2.4.2.3 The Glenelg - Manor Association.

The Glenelg - Manor Association is present on slopes that are 6 to 20 and 3 to 20 percent, respectively. Although Glenelg soils are superior for agricultural purposes, both series have similarly moderate limitations to development including shallow depth to bedrock, steep slopes, or channery slopes. Manor soils are limited also by potential hazard of groundwater contamination.

2.4.2.4 The Highfield - Arendtsville - Myersville Association.

The Highfield - Arendtsville - Myersville Association is located on 3 to 20 percent slopes. They are excellent for agriculture with moderate limitations to development, primarily from steep slopes, and course rock fragments.

2.4.2.5 The Lehigh - Brecknock - Neshaminy Association.

The Lehigh - Brecknock - Neshaminy Association is present on 0 to 25 percent slopes. These soil series are fair to poor for agricultural uses. In general, they have slight to severe limitations for development and recreation, primarily from slow permeability, a seasonally high water table, steep slopes, depth to bedrock, and stoniness.

2.4.3 Piedmont Lowlands Section.

The Piedmont Lowlands Section includes soils weathered from carbonate sedimentary rocks with substrata of limestone or dolomite; calcareous shale, limestone and sandstone; or cherty limestone. There are nine soil associations which vary in slope and limitations for use. (See Table 2, Appendix C)

2.4.4 Gettysburg Newark Lowland Section.

The Gettysburg Newark Lowland Section soils are formed in materials weathered from non-carbonate, sedimentary rocks. The six soil associations of this region have substrata of reddish sandstone, shale, and siltstone. (Table 2, Appendix C)

2.4.5 Ridge and Valley Province.

2.4.5.1 The Great Valley Section.

The Great Valley Section contains 13 soil associations (Table 2, Appendix C) with substrata of yellowish and brownish sandstone, shale and siltstone.

2.4.5.2 The Appalachian Mountain Section.

The Appalachian Mountain Section contains soils characterized by both the Great Valley and Piedmont Uplands and are represented by the same soil associations (Table 2, Appendix C).

3.0 NATURAL RESOURCES.

3.1 Vegetative Communities.

3.1.1 Existing Vegetation.

Vegetation observed at the 32 reserve sites includes a mixture of planted/landscaped plants and native vegetation. USARCs, AFRCs and AMSAs sited in commercial, urban areas are usually landscaped with trees, shrubs, and primarily mowed lawns. The most common planted trees and shrubs include ***White Pine***, ***Pacific Yew***, ***Sugar Maple*** and ***Pin Oak***. (See Table 3, Appendix C for Master Plant List and scientific names.) Sites located in more rural regions, particularly sites with greater land area, generally contain native forest although it may be limited to small woodland islands.

Native forest habitat varies with physiographic zone. Eastern deciduous forest changes with microhabitat conditions such as slope and direction of exposure. The largest area of existing eastern deciduous forest was observed at the Edgemont USARC/AMSA site. Forest overstory species observed include ***Shagbark Hickory***, ***Black Cherry***, ***Mockernut Hickory***, ***American Elm***, ***Green Ash***, ***and Tulip Poplar***. Understory plants include ***Flowering Dogwood***, ***Smooth Arrowood***, ***Spicebush***, and ***Virginia Creeper***. Species indicative of edge communities (e.g. ***Poison Ivy*** and ***Blackberry***) were observed along the edge of the forest.

3.1.2 Native Forest Communities of Pennsylvania.

There are few cases, if any, where the first species of grasses, trees, and shrubs to appear on land remain indefinitely to mature into a climax vegetative community. Succession is a process of vegetational change in which plant communities replace one another until a climax equilibrium is reached (Godfrey, 1980). Throughout most of Pennsylvania, there is little virgin forest. Most areas of forest today have succeeded from a cleared state such as abandoned farmland or timberland. The rolling terrain of most of Pennsylvania (except the

Coastal Plain) places most of the state's surface in the middle range of the drainage continuum (Godfrey, 1980), also called mesic or well-drained. This drainage determines the vegetation which occupies specific regions.

In the herbaceous phase of succession, the opportunity for species to appear depends on the availability of seeds. Common volunteer species include ***Chickweed*** (*Stellaria Media*), ***Henbit*** (*Lamium amplexicaule*), ***Cranesbill*** (*Geranium Carolinianum*), ***Shepherd's Purse*** (*Capsilla bursa - pastoris*), and ***Wintercress*** (*Barberea sp.*). ***Crabgrass*** (*Digitarea saguinalis*) and ***Horseweed*** (*Erigeron canadensis*) are soon to follow. Some of the taller, easily recognizable species include ***Pokeweed*** (*Phytolacca americana*), ***Queen Anne's Lace*** (*Daucus carota*), and the ***berry briars*** (*Rubus spp.*). ***Ragweed*** (*Ambrosia sp.*) may also be present, especially on poorer soils. Other species including ***Fescues*** (*Festuca spp.*) are introduced weedy grasses which arrive at early successional stages. Several Asters (*Asteracea*) and ***Broomsedge*** (*Andropogon sp.*) are also invaders. Plants including ***Plantago Aristita*** (a plantian with no common name), ***Diodia Teres***, (no common name), and ***Aristida Dichotoma*** (*a three - awn grass*) are vegetative indicators of prior erosion.

By the second growing season, other species begin to dominate including Perennial Asters like ***Daisy Fleabane*** (*Erigeron annuus*), followed by a ***Broomsedge/Goldenrod*** (*Solidago sp.*) dominance.

Mesic woody succession begins around the fifth season when woody seedlings are visible above the broomsedge, goldenrod, and briars. Woody seedlings may be deciduous or coniferous. Coniferous species may include ***Eastern Red Cedar*** (*Juniperus virginianus*), or ***Virginia Pine*** (*Pinus virginianus*). These species are especially likely to colonize in the Coastal Plain and the Eastern Piedmont provinces. Deciduous pioneers include ***Red Maple*** (*Acer rubrum*), ***American Elm*** (*Ulmus americana*), ***Black Locust*** (*Robinia pseudoacacia*), ***Ashes*** (*Fraxinus spp.*), ***Cherries*** (*Prunus spp.*), ***Flowering Dogwood*** (*Cornus florida*), ***Tulip Popular*** (*Liriodendron tulipifera*), ***Sweetgum*** (*Liqiudambar styraciflua*), and ***Persimmon*** (*Diospyros virginiana*). Shrubs and vines may include ***Sumac*** (*Rhus sp.*), ***Black Haw*** (*Viburnum prunifolium*), ***Trumpet Creeper*** (*Campsis radicans*), and ***Poison Ivy*** (*Toxicodendron radicans*). In Pennsylvania, ***Pin Oak***, (*Quercus palustris*) also occurs as a pioneer.

One example of forest succession from a known point in time is located at the spot where Elon J. Farnsworth fell on July 3, 1863, the third and decisive day of the battle of Gettysburg. This area is now a northern Piedmont forest which has grown undisturbed since the battle. There are large (up to two feet in diameter) ***Black Locust*** and ***White Ashes*** which are beginning to die and decay. Occasional large ***Black Walnut*** (*Juglans nigra*) trees are present. These are the remains of forest pioneer species. ***Younger Red*** and ***Black Oaks*** are present. Together with the ***Ashes*** and a few ***Tulip Poplars***, the ***Oaks*** are expected to dominate the canopy for a long time. Eventually, scattered ***White Pine*** (*Pinus Strobus*) and ***Eastern Hemlock*** (*Tsuga canadensis*) will appear. Subdominants include ***Redbud*** (*Cercis canadensis*), ***Dogwood***, and ***American Elm***.

The mature forest will ultimately contain Oak-Hickory or Oak-Hickory-Beech associations. ***White Oak*** (*Quercus alba*), ***Red Oak*** (*Quercus rubra*), ***Black Oak*** (*Quercus velutina*), ***Southern Red Oak*** (*Quercus stellata*), ***Scarlet Oak*** (*Quercus coinea*), and ***Beech*** (*Fagus grandifolia*) are dominant. Subdominant canopy constituents include ***Mockernut Hickory***

(*Carya tomentosa*) ***Pignut and Shagbark Hickories*** (*Carya glabra* and *Carya ovata*), ***Tulip Popular***, and ***Red Maple***. Understory species include ***Black Gum*** (*Nyssa sylvatica*), ***Hornbeam*** (*Carpinus caroliniana*), ***Flowering Dogwood***, ***Redbud***, and ***Blueberries*** (*Vaccinium sp.*). ***Shadbush*** (*Amelanchier sp.*) and ***Mapleleaf Viburnum*** (*Viburnum acerifolium*) are the most common shrubs.

Herbs such as ***Jack in the Pulpit*** (*Arisaema triphyllum*), ***Mayapple*** (*podophyllum peltatum*), ***Skunk Cabbage*** (*Symplocarpus foctidus*), ***Blood Root*** (*Sanguinaria canadensis*) and many others occupy the forest floor.

Mature woodlots in Pennsylvania (See Figure B, Appendix B) are more numerous in number than in adjacent states probably because farmland is not being abandoned at a significant rate. Farmlands are, therefore, stable and may contain blocks of woodland that may be kept as sustained yield timber or firewood. Thus, the woodlots tend to be located on least farmable areas like hill crests: Some of these woodlots are dry areas (xeric) and some mesic, but observing mature vegetation helps distinguish the two soil types (Godfrey, 1980) as different species are indicators of wet and dry conditions.

3.2 Wildlife Food and Cover.

The presence of native vegetation determines the faunal (wildlife) community which occupies a site. Since most of the 79th ARCOM reserve sites are located in commercial/urban areas, only species adapted to living in urban conditions are expected to be observed. Vegetation provides critical habitat components such as food and cover needed for survival throughout an animal's life cycle. Native plants provide the specific types of food and shelter, nesting and hiding places that indigenous animals require to survive. For example gray squirrel require large amounts of acorns for food, and large trees (greater than 9 inches diameter at breast height) for nesting (Allen, 1982). Thus, gray squirrel presence depends on the availability of mature, mast - producing trees (e.g. oaks).

3.2.1 Observed Wildlife.

During site visits, urban wildlife was observed at most of the 79th ARCOM sites including a variety of songbirds and small mammals. (See Table 4, Appendix C.) Planting native species rather than introducing alien plants for landscaping will encourage native wildlife to inhabit a site by providing needed habitat components.

3.2.2 Native Vegetation for Wildlife.

Table 5 (Appendix C) lists the relative importance of common native plants in Pennsylvania for use as food and cover for native wildlife. Wildlife are divided into feeding groups that include waterbirds, marsh shorebirds, upland game birds, songbirds, fur and game mammals, small mammals, and browsers. These native plant species may be planted to enhance wildlife habitat and for landscaping purposes. Table 6 (Appendix C) lists common plants of the northeast U. S. that are valuable to birds and mammals as food and cover. This table emphasizes the flowering and fruiting periods of trees, shrubs, and vines so that landscape planting can incorporate color and season into habitat enhancement planning. Figure D (Appendix C) illustrates a habitat enhancing landscape planting plan. Table 7 (Appendix C) lists common trees and shrubs that are adaptable to urban conditions. This information is

adapted from Degraaf and Witman, 1979. A low numerator (stars) over a large denominator (users) indicates that the plant is used by many wildlife species, but only to a limited extent by each. A higher numerator and small denominator characterizes a plant of great importance to a limited segment of wildlife. This table is adapted from Martin, et al., 1951.

3.3 Rare, Threatened and Endangered Plants.

A survey of rare, threatened, and endangered plants was recently completed by the Pennsylvania Science Office of The Nature Conservancy (TNC) on the 79th ARCOM sites. Two sites contain listed species. (Personal communication with John Kunsman, September 1994.) ***Butternut*** (*Juglans cincerea*), a member of the walnut family, was identified at the Williamsport USARC. An unidentified species of ***Umbrella Sedge*** (*Cyperus sp.*) was located at the Marcus Hook marine AMSA. This species has been referred to a sedge expert to conclusively determine the species and its status. Refer to Appendix D for a list of Biota of Special Concern in Pennsylvania.

No rare, threatened or endangered invertebrates or vertebrates were observed during site visits to 79th ARCOM sites, nor are any expected to use on-site habitats.

3.4 Noxious and Poisonous Plants.

Pennsylvania Act 1982-74, as amended, requires landowners to comply with designated weed control areas and species listed as noxious weeds may not be planted or transported. There are ten species listed on the Noxious Weed Control List. See Appendix D for the Noxious Weed Control Act and List.

Poisonous plants of Pennsylvania include a number of species such as Poison Ivy, Poison Sumac, and others. A full list of these plants can be found in the publication, Poisonous Plants of Pennsylvania, by Robert J. Hill, available through the Pennsylvania State Book Store. Many of these species are not life threatening, but may cause serious skin reactions. Others, if ingested, may be fatal.

3.5 Drainage.

3.5.1 Surface Waters.

Proximity to surface water introduces important stormwater management considerations and surface/subsurface drainage considerations. Sheet flow from impervious surfaces contributes sediments and toxicants to adjacent and downstream waters resulting in an increased probability of reduced dissolved oxygen, increased turbidity, and increased nutrient, metal, and hydrocarbon levels in the aquatic environment. Normal operations of the existing facilities include parking lots, vehicle maintenance, the storage and use of products such as petroleum, oils and lubricants (POL), solvents, and cleaners, which could potentially contaminate surface water bodies through stormwater sheet flow or subsurface flow. Only four of the existing facilities (Marcus Hook, Reading, Williamsport, and Edgemont) are located directly adjacent to surface water bodies.

3.5.1.1 Philadelphia-Piedmont Upland Region.

The Delaware and Schuylkill Rivers are the major surface bodies of water in this region. The Marcus Hook AMSA is located directly adjacent to a surface body of water, the Delaware River. The Edgemont facility drains to Ridley Creek, a tributary to the Delaware River.

3.5.1.2 Piedmont Lowlands Region.

The Susquehanna River is the major surface body of water in the region. Numerous streams originating in the low hills drain into the Susquehanna River.

3.5.1.3 Great Valley Region.

There are several north-south flowing rivers in this region. In the east, the Delaware River forms the eastern boundary of Northampton County. The Lehigh River flows between Allentown and Bethlehem. The Schuylkill River flows through Reading while the Susquehanna River is located in the east adjacent to Harrisburg. Numerous streams flow south from the Appalachian Highlands, and several man-made recreational lakes are located in this region. At the Reading facility, overflow from the stormwater detention pond flows into Anjelica Creek, a tributary of the Schuylkill River.

3.5.1.4 Eastern Appalachian Region.

There are several north-south flowing rivers in this region. The Lehigh River flows south out of the region from the Poconos. The Schuylkill River flows south from its origin at Schuylkill Haven while the east branch of the Susquehanna River flows through Wilkes-Barre. Streams trickle down through the draws of the mountainous landscape of this region. Glacier-formed lakes dot the countryside, mainly in the Pocono Plateau.

3.5.1.5 Western Appalachian Region.

The Juniata River and the Western Branch of the Susquehanna River are the two major surface bodies of water in the region. Streams flow down the ridgelines into the valleys. Overflow from the stormwater retention pond at the Lewisburg Reserve Center drains to Buffalo Creek, a tributary of the Susquehanna. The Williamsport USARC is located adjacent to Miller's Run, also a tributary of the West Branch of the Susquehanna.

3.5.1.6 Wetlands.

Only one site (Ashley) contains jurisdictional wetlands subject to regulatory authority under Section 404 of the Clean Water Act (U. S. C . 1251 et seq). This wetland contains portions of palustrine emergent, shrub, and forested habitat. Greencastle and Gettysburg are located adjacent to wet depressions. Wetlands provide critical habitat to numerous insects and other invertebrates which are fed upon by small mammals and birds, and to specialists such as beaver and wood duck that require flowing or standing water. Wetlands are home to many Federally and State listed endangered species. In addition to providing critical habitat, wetlands function to absorb and attenuate flood waters, transform and retain nutrients and toxicants, trap sediments, provide production export to downstream waters, and play a role in groundwater discharge and recharge.

3.5.1.7 Best Management Practices.

Stormwater runoff from sites (pre and post construction) can adversely affect water quality by increasing rate and volume of runoff and by increasing pollutants carried in stormwaters. These impacts are directly related to the impervious area of the facility including roads and parking lots. Increases in runoff rates can cause swale erosion and localized flooding. Many pollutants such as organic chemicals (oils, petro-chemicals, etc.), heavy metals, (lead, etc.), and nutrients such as phosphorus and nitrogen from lawn fertilizers and other sources accumulate on impervious surfaces. Organic matter exerts a Biological Oxygen Demand (BOD) via decomposition in water. Pollutants affect water quality by reducing dissolved oxygen levels, promoting eutrophication, increasing turbidity, smothering macrophytes and benthic animal life, and bio-accumulating toxic chemicals. Stormwater quality and quantity management is necessary to minimize these impacts.

A three-point water quality management plan is recommended to minimize the adverse impacts of facility operations and/or future construction:

- An environmentally sensitive site design.

- Sediment and erosion control plan.

- Stormwater Management Plan.

Army regulations also mandate Stormwater Pollution Prevention Plans, POL Management Plans, and general practices for use of hazardous, toxic, or radioactive products as part of site Standard Operating Procedures.

3.5.1.8 Site Design.

Impervious surfaces should be constructed away from waterways and wetlands. A minimum 25-foot buffer is recommended from non-tidal wetlands and a 100-foot buffer is recommended from tidal wetlands and waterways. Buffers should be maintained from steep slopes as well.

3.5.1.9 Sediment and Erosion Control.

A sediment and erosion control plan should be developed to minimize erosion and prevent excess sedimentation of adjacent waters and wetlands. Sediment control measures should include the use of sediment traps, silt fence and berms during construction operations. Use of vegetated swales adjacent to existing parking areas will help to control nutrient and toxicant runoff, and minimize soil erosion by decreasing flow velocities.

3.5.1.10 Stormwater Management Plan.

A Stormwater Management (SWM) Plan should be designed to manage the quality and quantity of stormwater, runoff from impervious areas. Soil texture at each site should be determined for feasibility of SWM design (e.g., infiltration, detention, retention). In general,

SWM basins should be designed to manage the first one-half inch to one inch of runoff from all impervious surfaces on-site. Quality management may include planting hydrophytic (water-loving) vegetation, design of forebays or post-bays for additional sediment trapping, oil-water separators etc. (See Figure C, Appendix B).

3.5.2 Groundwater.

The majority of the land on a USARC is paved with stormwater exiting the site through storm drains. A small amount of recharge may enter the groundwater via the unpaved portions of the reserve facilities or through stormwater management ponds at Lewisburg, Lock Haven, and Reading. The Edgemont, Worcester, and Greencastle facilities utilize groundwater through on-site wells.

Only Germantown has known groundwater contamination, which was recently discovered during quarterly well monitoring. Interim remedial action , site characterization, etc., is being managed by the U. S. Army Corps of Engineers, Baltimore District. Operations of the existing facilities could potentially result in groundwater contamination due to the presence of USTs, and the storage and handling of POL and other hazardous substances. Leaking of USTs and spills of hazardous substances could result in groundwater contamination. These hazards can be minimized through compliance with State and Federal regulations and use of BMPs for hazardous materials.

3.6 Summary.

The purpose of this programmatic NRMP is to provide guidance in managing the grounds and natural resources inherent to USARCs, AFRCs, and AMSAs throughout the 79th ARCOM. Site specific management plans can be developed by reviewing this document and the Army Technical Manuals pertaining to development of the NRMP. An effective NRMP will require revisions every 3 to 5 years and should provide specific details relating to resource requirements such as man power, equipment, funding, etc. A maintenance and monitoring schedule should be developed for all activities.

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART II
LAND MANAGEMENT AND GROUNDS MAINTENANCE

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PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART II - LAND MANAGEMENT AND GROUNDS MAINTENANCE

1.0 INTRODUCTION.

Properly applied maintenance principles and practices will supplement ongoing management efforts, conserve the natural resources on Department of Defense (DoD) lands, maintain and improve the appearance of grounds and promote operational safety and efficiency. The objective of this NRMP is to conserve, develop, manage and maintain all land under DoD jurisdiction in accordance with proven scientific methods, procedures and techniques to facilitate military missions and operations.

1.1 Planted Areas.

The reserve facilities of the 79th ARCOM contain only a few acres of impervious areas within their boundaries surrounded by maintained lawns. These sites have some degree of landscaping of deciduous or evergreen trees and shrubs and mowed lawns except the Germantown USARC, Woodhaven USARC, and Wilkes Barre AMSA which have no grass area and are completely paved. The most common planted trees and shrubs include White Pine, Pacific Yew, Sugar Maple and Pin Oak. The following species are also identified as being used for ground cover or landscaping in the northeastern United States.
(See also Appendix C, Tables 5 through 7).

Shade and Windbreak Trees.
Red Maple (*Acer rubrum*)
Sugar Maple (*Acer saccharum*)
White Oak (*Quercus alba*)
Red Oak (*Quercus borealis*)
White Pine (*Pinus strobus*)
Eastern Hemlock (*Tsuga canadensis*)
Norway Spruce (*Picea abies*)
White Fir (*Abies concolor*)

Ornamental Trees.
Blue Spruce (*Picea pungens glauca*)
American Holly (*Ilex opaca*)
Flowering Dogwood (*Cornus florida*)

Shrubs.
Common Lilac (*Syringa vulgaris*)
Spirea (*Spiraea vanhouttei*)
Arrowwood (*Viburnum dentatum*)
Japanese Yew (*Taxus cuspidata*)
Goldenbell (*Forsythia intermedia*)
Savin Juniper (*Juniperus sabina*)

1.2 Maintenance Services.

Service contracts are used to accomplish grounds maintenance work on lands not outleased. Legal aspects, negotiation and administration is the responsibility of the appropriate contracting officer. In order that monetary consideration may be adjusted, contracts should include a clause providing for negotiation of a change in price if the services under consideration are either diminished, increased, or eliminated. Contracts should include appropriate applicable conditions and specifications pertaining to land management and maintenance practices for the protection of the land involved. All work is to be performed exclusively between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, unless otherwise authorized by the facility manager/supervisor and at no additional expense to the Government. The Government shall furnish without cost to the contractor, use of electrical and water utilities. A sample 79th ARCOM lawn maintenance contract is provided in Appendix D.

1.3 Irrigation Systems.

Irrigation is desirable to supplement natural rainfall in the maintenance of healthy vegetative growth, but only as a result of drought or to maintain new plantings. Use of native species should minimize the need for irrigation and help to conserve water. Before any irrigation project is undertaken, a schedule of priorities should be developed which takes into consideration the possible consequences of no irrigation or, in case of existing systems, the loss of irrigation capability. Permanent consequences such as loss of turf and landscape plantings should be weighed in formulation of these priority schedules.

1.3.1 Factors Affecting Irrigation.

Where irrigation is necessary, the following factors are of major importance and should be considered:

- The availability of existing water supplies and the feasibility of their use.

- The amount of water required, depending upon the type of plants or turf to be irrigated, climate, terrain, and soil conditions.

- The amount of money allocated to a project.

1.3.2 Irrigation Areas.

All equipment and system components should be selected with regard to maximum service and flexibility consistent with cost. Where there is a recognizable need for frequent water application in a fixed location, consideration should be given to permanent systems with automatic control capability. Areas such as athletic fields and training areas may require irrigation to maintain vigorous turf growth. For further description on design, water source alternatives, and selection alternatives see Army TM 5-630, Chapter 16.

1.3.3 Selection Considerations.

Once irrigation requirements have been quantified, the actual method of distribution and application may be selected and evaluated. Site conditions should be carefully considered to determine the type or types of irrigation best suited to the installation. Local irrigation practices will often provide an indication of which systems are the most feasible in a particular area. It is good practice and beneficial to community relations to provide systems for irrigation which are not considered wasteful in the area in which the reserve facility is located. Once a system is operational, its use and management should reflect good husbandry of water resources.

1.3.3.1 Codes and Regulations.

Any irrigation system installed as an addition to a potable water system must comply with the National Plumbing Code and public health regulations concerning backflow prevention devices and system materials.

1.3.3.2 Long-Range Suitability.

Utilization of an irrigation system will vary widely as a direct result of climatological conditions and turf usage. Estimates should be made to compare various systems over the projected life of a system in order to determine which is most desirable. When two or more systems are equally durable and are of approximately equal cost, preference should be given to the system which is the most aesthetically pleasing.

2.0 MANAGEMENT PRACTICES AND MAINTENANCE PROCEDURES.

2.1 Introduction.

Grounds will be maintained at the levels and intensities necessary to meet the designated use criteria, protect and enhance the natural resources, and ensure a pleasing appearance in harmony with the natural landscape. Designated turf areas will be seeded, renovated, fertilized, and irrigated to the degree required to maintain a permanent vegetative cover of desirable plants, necessary to support the intended use, but should take into account water quality considerations.

2.2 Planting.

All planting, pruning, cultivation, and other maintenance will conform to criteria set forth in Army TM 5-630. Trees and shrubs will be removed if they have become crowded or, if they are not essential for shade, windbreaks, screening of unsightly objects, or erosion control; complementary to architectural features of the building area; adapted to the locale. Existing and new foundation plantings will be limited to the minimum needed to complement the building design. Normally not more than one-fourth of an individual foundation perimeter will be planted with shrubs or trees. The expenditure of appropriated funds for shearing hedges and ornamental plants into formal or decorative designs is not usually authorized except as specifically prescribed in an approved planting plan. Climbing vines, shrubs, and trees which block or damage windows, eaves, gutters or other construction components will be eliminated. Plantings which reduce sight distances or otherwise constitute a traffic

hazard near street intersections, walks, and drives will not be permitted. Nonessential plantings which result in excessive lawn maintenance will be removed. Painting or whitewashing of tree trunks is not authorized. Lastly, planting and maintenance of flowerbeds, rose gardens, and nut or fruit trees for their edible products, except for wildlife food purposes, are not facilities engineering responsibilities.

2.3 Mowing, Edging, Trimming and Weeding.

Timely mowing will prevent noxious weeds from growing to seed. Mowing shall be accomplished to provide 1-1/2" height in months of May through September and a 2" height in October and November. To prevent damage to the turf all clippings will be removed from the mowed areas within (4) hours after being cut. Weeds and grasses adjacent to structures such as buildings, loading platforms, helipads, curbs and surfaced areas shall be trimmed. The trimming shall be accomplished using hand or power driven clippers or shears to remove all undesired vegetation. Weeds and grass in landscaped areas, such as flower beds and woody plant areas, and pavement seams and cracks shall be removed by hand pulling operation. All grass along concrete walks will be edged and trimmed. There shall be no more than 1/2 inch between grass and adjacent paved/cement surface. All trimmings will be removed within four (4) hours after being cut.

2.4 Irrigating Systems.

2.4.1 Installation.

Of equal importance with the design of an irrigation system is the accuracy of its installation. Care must be taken to insure that the installation is completed according to plans and specifications. After completion, construction and as-built plans of all permanent systems should be kept on file at the reserve facility. All pipes carrying non-potable water should be identified in the field and on the plans to prevent accidental cross-connections. All valve locations should be shown on the plans and should be referenced to three permanent landmarks wherever possible. If the installation has plumbing shop valve books, this information should also be included in them.

2.4.2 Operating Procedures.

The responsibility for operation, scheduling, and inspection of the system should be clearly defined. The knowledge gained in operating the system should be combined with the instructions of the designer to formulate a set of standard operating procedures for the system. These procedures, together with a copy of the as-built plans and emergency procedures should be made available to the facility manager. Final coordination should be made with all who assisted in the design to insure that the system is at optimal operation upon initial work acceptance.

2.4.3 Field Checks.

Field checks of ground moisture after the sprinkling cycle are beneficial in adjusting the system. Field operation tests can be performed using readily available materials. Hose system output can be measured by recording the time required to fill a garbage can of known capacity. The capacity in gallons is then divided by the minutes required to fill the container in order to

determine the rate in gallons per minute. Sprinklers can be measured by placing several cans in the spray pattern for an hour. After one hour, the depth collected in the cans is measured, and the output is expressed as inches per hour.

2.4.4 Water Meters.

Whenever economically feasible, an irrigation system should be equipped with a metering device. The meter can be used to provide valuable information that will aid in developing an optimal irrigation schedule.

2.4.5 Irrigation System Maintenance.

Routine maintenance should be scheduled as needed to prevent major breakdowns. Local conditions and the type of system will determine the frequency of maintenance required. Records should be kept on which components in any irrigation system experience failure. After a period of time, any trouble spots requiring remedial action should become evident. Seasonal irrigation needs should also be included as a section within a facility's Standard Operating Procedures. Where winter freezing is a possibility, the system should be designed so that it may be winterized to prevent damage from freezing.

2.5 Policing.

It is the responsibility of the facility manager/supervisor to ensure the terms and specifications of the grounds service contract are adhered to. Day-to-day police of litter, paper, bottles and cans from USARC grounds is a reserve facility responsibility.

2.6 Disease and Insect Control and Sanitation.

2.6.1. Herbicides.

The Herbicides Manual for Noncropland Weeds (TM 5-629) provides a thorough discussion and description of herbicides and their uses. Herbicides used in landscaped areas will be accomplished on a case-by-case basis and will be relatively non-toxic to trees, shrubs, and ground covers such as pachysandra, myrtle, English ivy, euonymus, and ajuga, and they should keep both annual and perennial weeds and grasses under control. An Integrated Pest management Program should be implemented which minimizes the use of chemical controls for weeds, insects, etc.

2.6.1.1 Precautions.

When herbicides are used, the support installation licensed personnel/contractor will use caution to spray only unwanted weeds and grasses and not the foliage of landscaped or native plants. Selective herbicides which may be safe for many plants may be toxic to some species. The phototoxicity warnings on pesticide container labels will be carefully observed.

2.6.1.2 Edging and Spot Sterilization.

Herbicides termed soil sterilants not only provide complete kill at application but also remain in the soil for varying periods of time during which they kill any introduced seeds or plants.

Soil sterilants will be used with extreme caution, if used at all, in landscape planting since their transport in water runoff after rain or irrigation or their drift during application may result in injury to desirable plants.

2.6.1.3 Plant Growth Retardants.

No one chemical or group of chemicals can be considered outstanding with all species and varieties of plants. Chemicals to retard shoot growth and development cannot be recommended as a maintenance practice. Growth retardants in landscape maintenance can be used to eliminate or decrease pruning and to reduce the growth rate of grass in order to save mowing costs.

2.6.2 Pesticides.

Insect and disease damage is often difficult to identify. When vegetation becomes unhealthy for reasons not readily explained by infertile soil, lack of moisture or other common causes, inspect leaves and branches carefully. Gypsy moth infestation is prevalent in the northeastern United States. Although no evidence of gypsy moths was identified at any 79th ARCOM sites, monitoring should be conducted at regular intervals. Severe infestations result in decimation of oak trees, their preferred food. The Military Entomology Operational Handbook, TM 5-632 contains valuable guidelines on insects which damage vegetation. These guidelines include, but are not limited to, biological characteristics, vegetation affected and control.

Use of chemical pesticides for the protection and control of vegetation is permitted on a case-by-case basis and only upon approval by the 79th ARCOM. Pesticide application and handling will be accomplished by support installation licensed personnel/contractors only and will be in accordance with acceptable guidance given in AR 200-1, AR 420-74, TM 5-629, TM 5-630, and TM 5-632, and Integrated Pest management Program guidance.

2.6.3 Fungicides.

Fungicides are substances which kill or inhibit fungi and other plant pathogens on or in plant tissue. Fungicides containing such heavy metals as mercury, cadmium, and zinc, which actually kill fungi spores, have been banned by the Environmental Protection Agency (EPA). Therefore, the majority of fungicides in common use are repellents or protectants which prevent the spores of fungi from germinating and infecting the foliage, fruit, or other parts of a plant. It is usually necessary to repeat applications of fungicide frequently in order to maintain a covering on the plant. The principle physical formulations of fungicides include: dusts, wettable powders, emulsions, chemical types, antibiotics, complex organic compounds, sulfur and copper.

2.6.4 Current Practices.

Use of herbicides, retardants, pesticides, or fungicides is permitted on a case-by-case basis and only upon approval by the 79th ARCOM. Aforementioned chemicals will be applied by licensed personnel only and will not be stored at the reserve site. Material Safety Data Sheets (MSDS) must be present before any chemical is used on site.

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART III
NATURAL RESOURCES FOREST MANAGEMENT

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PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART III- NATURAL RESOURCES FOREST MANAGEMENT

1.0 INTRODUCTION.

The purpose of the Forest Management Plan is to provide guidance, standards, and technical aids to foresters, land managers, and others concerned with protection and management of forest land at Department of Defense installations. An in-depth Forest Management Plan is required of installations with 100 acres or more of merchantable timber land. Since the 79th ARCOM does not support any commercial forest land, general guidelines for forest management practices will be provided to promote the intent of implementing regulations and Executive Orders set forth in AR 200-1.

The goal of this Forest Management Plan is to provide protection of threatened and endangered species and to develop and maintain wildlife habitat within the constraints of normal forest management principles.

Only the Edgemont USARC/AMSA contains appreciable forest land. Several other facilities have small wooded patches and these facilities may extract useful management practices from this plan.

2.0 FOREST LAND.

The woodland occupied by 79th ARCOM sites is considered non-productive land not capable of producing 20 cubic feet per acre per year of harvestable timber. The Edgemont USARC/AMSA is an example of an early to mid-successional deciduous regrowth forest. Species present are indicative of past disturbances. Dominant overstory species observed include ***Shagbark Hickory*** (*Carya ovata*), ***Mockernut Hickory*** (*Carya tomentosa*), ***Black Cherry*** (*Prunus serotina*), ***American Elm*** (*Ulmus americana*), ***Green Ash*** (*Fraxinus pennsylvanica*), and ***Tulip Poplar*** (*Liriodendron tulipifera*). Understory species include ***Flowering Dogwood*** (*Cornus florida*), ***Smooth Arrowwood*** (*Viburnum dentatum*), ***Spicebush*** (*Lindera benzoin*), and ***Virginia Creeper*** (*Parthenocissus cinquefolia*). Species indicative of forest edge communities (e.g., ***Poison Ivy*** (*Toxicodendron radicans*), and ***Blackberry*** (*Rubus sp.*) were observed along the forest edge.

The average diameters at breast height (DBH) of overstory species is approximately eight inches. The canopy cover is characterized by 75 to 90 percent closure and a medium dense understory.

3.0 GENERAL BEST MANAGEMENT PRACTICES.

To ensure a constant source of hard mast (e.g., acorns), at least 50 percent of the forest should be oaks and hickories. Other sustainable species include American Beech, Blackgum, Tulip Poplar and Red Maple (See Table 3, Appendix C for scientific names). These hardwood species all provide fruits/seeds valuable in managing woodland habitat for mammals and birds (e.g., gray squirrel, deer, wild turkey).

Should active forest management be desired, clearcutting is not recommended as this results in forest fragmentation which is detrimental to forest interior dwelling birds. Selective harvesting is recommended to accomplish forest thinning, however a 125-year or longer rotation period should be utilized to allow physical maturity of the oaks and hickories.

Dead trees should be left standing to provide dens for cavity nesting species (e.g., gray squirrel, woodpeckers). Artificial nest boxes should be erected where there are less than two larger (15 inch or greater DBH) den trees per acre.

Periodic on-site Gypsy Moth surveys should be conducted as oaks are their preferred food. If egg mass density is determined to be a significant threat to on-site forest resources, a spray program can be implemented upon approval by the 79th ARCOM. Infestation should be controlled by use of the biological control Bt, and not by the insecticide dimilin.

4.0 MANAGEMENT FOR FOREST INTERIOR DWELLING BIRDS

Forest interior dwelling birds are species that require large tracts of deciduous or mixed coniferous and deciduous forest in which to breed successfully (Bushman and Therres, 1988). Nineteen such species of birds can be found breeding in the Coastal Plain and Piedmont. Steady declines in the populations of forest interior birds over the past 30 years resulting from forest clearing practice for development and agriculture, has resulted in efforts to protect the breeding habitat of these species.

The breeding ranges of eighteen of the nineteen species of forest interior dwelling birds incorporate 79th ARCOM facilities. Table 8 lists these species along with a summary of their requirements for nesting and feeding, minimum and optimum forest size, and forest age. Species-specific management requirements are also listed. Although contiguous forest patches of at least 250 acres are generally required to sustain viable populations of many of the forest interior birds listed in Table 8, most of these species have been found breeding in forest patches of less than 50 acres. Within the 79th ARCOM there are four sites (Edgemont, Bristol, Willow Grove and Worcester) that contain or are adjacent to contiguous forest which could support one or more of the forest interior species. Three of the four year-round resident forest interior dwelling species (Pileated and Hairy Woodpeckers, Red-shouldered Hawk) are likely within these forested tracts. With the exception of these species and the Barred Owl, the other fourteen forest interior birds would use these habitats only during the spring and summer breeding seasons.

Clearly, a single management strategy will not satisfy the habitat requirements of each species. However, to effectively manage forest interior breeding birds, one must protect large forest tracts so that different successional stages, each important to the different species, can occur. Forest tracts should be protected from clearcutting to insure the continued use by forest interior breeding species. This becomes increasingly important as development threatens to reduce the amount of forest adjacent to the large on-site forested areas. Following is a list of recommendations modified from Bushman and Therres (1988) that should be considered for effective management of large forested tracts:

- Survey forest tracts during the breeding season to determine the number of forest interior breeding species present within each patch.

- Minimize forest alterations and other disturbances during the breeding season whenever possible.

- Avoid fragmentation of large forest tracts by limiting clearing for agriculture, roads, and buildings.

- Selectively harvest the higher species diversity forests and riparian woodlands in lieu of clearcutting.

- The forest canopy should not be removed in excess of 30% clearing.

- Retain snags 10 inches DBH or greater. Remove snags which protrude above the forest canopy to discourage the parasitic Brown-headed Cowbird.

- Replacement or conversion of hardwood or mixed forests to pine dominant forest is discouraged.

- If clearcuts are necessary they should be planned in a manner that minimizes edge. Circular or square cuts produce the least amount of edge.

- During any cutting operations leave at least several uncut hardwood trees of 3 inch or greater DBH per acre. Cluster these young trees if possible.

- Leave uncut forested buffers along the steams and roadsides. The wider the buffer, the more benefit it will provide to forest interior birds.

- Forest tracts should be evaluated for susceptibility to Gypsy Moth induced mortality. If this threat is significant, infestation will be controlled by the use of Bt upon approval by the 79th ARCOM.

5.0 SUMMARY.

Facilities of the 79th ARCOM contain a limited amount of forest land. Those that do contain woodland should manage them for maximum habitat quality. Limited forest stand manipulation can be implemented to help sustain wildlife including forest interior dwelling birds. Additionally, forest habitat can be expanded by allowing lawn areas to revert to forest naturally, or by planting. Additional forest management practices and references can be found in Army Technical Manual 5-631.

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART IV
FISH AND WILDLIFE MANAGEMENT

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PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART IV - FISH AND WILDLIFE MANAGEMENT

1.0 INTRODUCTION

The objectives of the fish and wildlife management plan are to provide, compatible with the military mission, the long range and annual plans of work for fish and wildlife habitat development and maintenance. The plan will integrate fish and wildlife management practices with other natural resource management work, with emphasis on the multiple use concept.

Although the 79th ARCOM sites are small, mostly urban facilities that support few wild animals, this report will incorporate suggestions for preservation and habitat enhancement where possible, to promote wise land stewardship and thereby meet the intent of AR 420-74 and Technical Manual 5-633. To accomplish this goal, management practices will be addressed to protect the natural beauty of open spaces within the ARCOM, and to improve and enhance areas that may directly or indirectly support fish and wildlife resources.

The 79th ARCOM facilities may use this information to design site-specific management plans based on available resources. No hunting or fishing is currently conducted on any 79th ARCOM facility and there are no existing cooperative agreements with State or Federal agencies, or local organizations concerning fish and/or wildlife management.

2.0 FISH AND WILDLIFE RESOURCES

2.1 General.

Due to their small size and safety constraints, hunting and fishing are not a management objective on Army Reserve facilities, thus this plan will focus on non-game species. Although species differ between physiographic zones in Pennsylvania, all the facilities, because of their urban settings, generally support the same types of mammals, birds, reptiles and amphibians. Sites located adjacent to waterways should reference Section 3.5 of Part I of the Natural Resources Management Plan for best management practices that promote good water quality and thereby protect fish habitat in nearby streams and rivers.

2.2 Description of Fish and Wildlife Areas.

Fish and wildlife areas include any open space land or open water areas that provide habitat for wild animals. Habitat includes the combination of food, water, cover and space required for an animal to carry out its life cycle including nesting/breeding areas. Appendix A, Figures 2 through 33 show a general layout of each site. Most sites contain mowed lawn with trees and shrubs as the only available habitat components. Some sites (Reading, Lock Haven) have stormwater management basins which could be enhanced to provide additional habitat. The larger former NIKE sites (Edgemont, Bristol, Worcester) contain open space or woodland to potentially support a larger variety of species, and several other sites (Williamsport, Marcus Hook) are located directly adjacent to waterways which provide aquatic habitat as well as a

water source for common species. The Ashley, Greencastle and Harrisburg sites include undeveloped land or land adjacent to a baseball field that could be enhanced for wildlife.

It is important to recognize that even the smallest, most urban sites can still support and do support wildlife including songbirds and small mammals. Even these sites can be enhanced to provide higher quality habitat while still supporting a military mission.

2.3 Existing and Observed Wildlife Resources.

2.3.1 Wildlife Food and Cover.

A list of vegetation observed during site visits is provided in Table 3, Appendix C. Most facilities already have a landscape planting plan which identifies the planted species on each site. Additional common species are described in the Natural Resource Management Plan Part I, General, Section 3.0 on common plant communities of Pennsylvania. Other native species of value to wildlife are provided in Appendix C, Tables 5, 6, and 7.

2.3.2 Native Wildlife.

Table 4, Appendix C, includes a list of species observed during site visits. Appendix C, Tables 9 through 12 contain lists of other native species of birds, mammals, reptiles and amphibians common to eastern and central Pennsylvania that may visit and use resources on 79th ARCOM facilities.

Numerous species of mammals, birds, reptiles, and amphibians likely utilize facility upland and wetland habitats. Mammals likely to be observed throughout the ARCOM field, lawn, or forest habitats include Virginia opossum; southeast shrew; eastern mole; several bats including gray myotis, silver haired bat, eastern pipistrel, red, big brown, and evening bats; red and gray fox; raccoon; eastern chipmunk; eastern gray squirrel; field mouse, white-footed mouse; Norway and black rat; eastern cottontail; groundhog; skunks; and white-tailed deer.

Numerous species of songbirds waterfowl and raptors utilize facility habitats. Canada Goose and mallards may use on-site puddles and feed in mowed fields. Vultures and hawks may be seen soaring overhead or perching in tall trees. Common songbirds such as sparrows, chickadees, titmice, woodpeckers, and mourning doves also use facility habitats.

Reptiles and amphibians are less frequently observed, but many species of snakes, lizards, skinks, turtles, frogs and toads, or salamanders are present in eastern and central Pennsylvania as well.

2.3.3 Threatened and Endangered Species.

No State or Federally listed rare, threatened, or endangered wildlife species were identified at any of the facilities during the site visits. To conclusively determine the presence or absence of these species, in-depth surveys are required. A list of Pennsylvania Biota of Special Concern is included in Appendix D. Questions concerning the lists or recorded observations should be directed to the Pennsylvania Department of Environmental Resources, Bureau of Forestry, Division of Forest Advisory Services (Natural Diversity Inventory).

3.0 WILDLIFE MANAGEMENT AND HABITAT IMPROVEMENT.

The following text outlines opportunities for the development of a wildlife management program throughout the 79th ARCOM. Facility managers/supervisors must choose appropriate management practices based on available site resources. Involving site employees, reservists, members of the community, conservation groups, and local, State, and Federal government agencies is highly recommended in the development and implementation of wildlife management programs. By including outside parties, there is a greater probability of managing habitats and ecosystems at a regional scale rather than in small disjointed habitat patches.

3.1 Management Goals and Strategies.

Various components are necessary to insure that site specific management programs are a success. This plan includes a set of broad habitat goals along with specific projects that can be implemented for various habitat types (e.g., fields, forest, or specific species). The following text explains integral components of a management program.

3.1.1 Inventory plant and animal species found on-site.

An important aspect of any management program is to develop a baseline inventory of plant and animal species located on each site. Species data obtained will be valuable in developing specific management objectives and for documenting changes in species richness and abundance as a result of having a wildlife management program.

Conducting an inventory also promotes participation from interested employees and others with experience in birding, wildflower enthusiasts, or amateur naturalists. Involving local groups such as the Audubon Society or local garden clubs and universities can develop positive community relationships while providing sources of assistance and information.

To provide a complete inventory of all plants and wildlife on site, a survey should be conducted at least once during each season to allow viewing of species present at various times of the year. After an initial inventory is complete, it should be reviewed periodically to monitor changes in species diversity and abundance. (Refer to TM 5-633 for inventory techniques).

3.1.2 Develop a site specific wildlife management plan.

Once baseline inventories are created, a habitat management plan can be developed for each site. Management plans need not be highly detailed or formal documents, but should identify specific objectives (e.g., management of habitat enhancement or species specific management) and include descriptions of the techniques chosen to achieve designated management goals, as well as an implementation schedule.

Management plans must address the four requisite habitat parameters: food, water, cover, and living/breeding space.

3.1.3 Implement Maintenance and Monitoring Programs.

Plans for maintenance of wildlife management programs and monitoring of implemented projects must be in place before the actual projects begin. Maintenance and monitoring are both integral parts of wildlife management programs.

Maintenance such as watering is required for most planting projects, at least initially, to insure successful plantings. Once plantings are established, minimal maintenance is typically required. Other projects involving seasonal mowing or disking require equipment, and that maintenance be performed according to a schedule. Monitoring is required for all projects to assess the condition of equipment, and use of habitat areas by wildlife. Nest box programs, in particular require rigorous monitoring on a weekly schedule during breeding season. Maintenance and monitoring will be addressed for specific management techniques where applicable throughout this report.

3.2 Habitat Enhancement Goals.

It is important when developing wildlife management programs, that an entire area be evaluated, particularly in reference to the specific plant communities and wildlife species that are being targeted. Independent projects such as placing nest boxes or planting trees and shrubs meet part of an animal's habitat requirement, however, if water and abundant space are not available, the species will not remain on site. Managing habitat types (e.g., forest, stream, field) and ensuring there is a diversity of vegetative cover types will lead to greater program success and increased diversity of wildlife. In addition, managing your site to allow wildlife to safely travel throughout an area will insure greater variety and breeding success.

Clear identification of site goals and objectives can help avoid conflicts between land use management and wildlife habitat enhancement goals. For example, excessive mowing and maintenance of grassed lawns, or use of exotic (non-native) plants in landscape designs may prevent the presence of many native wildlife species.

The following sections provide suggestions for different habitat enhancement projects that can be applied to sites within the 79th ARCOM. Many reserve sites are small, thus suggested projects for a particular habitat type may not be applicable.

3.2.1 Forest Projects.

As land is developed, forests become fragmented and the diversity of wildlife species utilizing small forested patches decreases. To enhance the value of forest patches or islands, a corridor system can be designed to connect isolated patches providing travel corridors for wildlife and increasing the availability of forest cover.

Forest interior birds, such as American Redstart and Ovenbird require large unbroken tracts of forest land (greater than 80 acres) for breeding. Some bird species require dense growth, some are found only in the canopy, others are ground nesters (refer to Forest Management Plan for Management Recommendations of Forest Interior Breeding Birds). Many species of hawks and owls nest in the forest and hunt over open fields.

Other wildlife such as Carolina Wren, Bob-White Quail, and Cottontail Rabbit are mot commonly found in "edge" habitat which is the brushy transition zone between the forest and open fields. Maintaining a well-balanced forest, with different aged stands of trees and different sized stands, will provide for many types of wildlife.

A forest management plan involves identifying the vegetation and animal species which are present, developing goals for the area (e.g., wildlife diversity), creating a budget for the program including both time and money considerations, and setting up an implementation schedule for the project. In addition, there are many people available to assist your facility with the development of the plan. State foresters or professors in the forest ecology department at local colleges can assist with the development of this plan. It should be understood by the forester that wildlife management is the main goal of the site. The following are steps which should be included in the development of the forest management plan. They provide guidance to get started and, if a forester is contacted to assist you, it will provide background for a site visit.

An inventory should be one of the first projects which is initiated in a forested site. The trees which provide the most benefits for wildlife (e.g., beech, hickories, oaks, cherry) should be marked for preservation. If the preferred species are extremely close together, the largest or healthiest specimens should be selected. Snags (dead standing wood) should also be identified for preservation. Once the entire site is reviewed, a plan can be developed to thin the trees and to produce more snags. Thinning the trees will "release" the selected specimens and allow them to branch out and use their energy to increase their mast (food) or fruit production. This practice will also open the closed canopy to encourage the growth of herbaceous plants, and small trees and shrubs which are important food plants. The understory vegetation will provide benefits for Box Turtle, lizards, Red-Eyed Vireos, and Ovenbirds, for example.

Thinning the trees can be completed by using the following two methods: selective cutting or girdling. Selective cutting involves cutting the trees down. In upland forest, leave the trees lying on the ground or create brush piles to provide cover and to enrich the soil as they decay. Girdling should be done on some of the larger trees which are not selected for preservation. This is done by making a two inch wide cut around the circumference of the tree to a depth which removes the bark and cambium (green layer under the bark). The tree will slowly die and a "snag" will be formed. A "snag" is a standing, dead tree which provides nesting sites for cavity nesting birds and provide perches for raptors and many other birds. As the tree decays, hollows may form and provide dens for fox, raccoons and squirrels. Insects burrow in the wood and provide a food source for species higher on the food chain such as woodpeckers.

Nest boxes can be erected in forest habitats to enhance habitat for forest cavity nesters. Refer to Appendix E for nest box designs.

3.2.2 Field/Lawn Projects.

Many reserve facilities are located on such small tracts that they must maintain a mowed lawn with landscaped plantings. On these sites, habitat enhancement may be limited to small-scale projects such as the addition of higher quality plants for food and cover, bird or bat nest boxes, and butterfly gardens, for example.

3.2.2.1 Delayed Mowing.

A variety of species are adapted to relatively open space with minimal amounts of cover. Maintaining these open areas in an early successional stage with periodic mowing will provide nesting cover for species such as bob-white quail, rabbits, mice and moles, all of which are important predator food species. Where possible, a "delayed mowing" schedule is preferable to allow wildlife to raise their young without being disturbed. Mowing in late summer or early fall (September/October) will insure that spring and summer nesting is completed and that the young of the year are strong enough to move away from the area. One of the factors limiting the populations of quail, meadowlarks, and other field nesting species is the destruction of the nests and brooding birds due to mowing lawns and fields at the wrong time of the year. Fawns and young rabbits also become victims if fields are mowed during the late spring and summer months. Their protection mechanism is to remain perfectly still and, unfortunately, the tractor operator is often unable to detect them in tall grass.

Adhering to the mowing dates is very important to avoid destroying nests, the young of the year, and even adults. The mowed field at Edgemont may be suitable for a delayed mowing program.

3.2.2.2 Field Border Management.

In large open areas such as at Edgemont or Bristol, field border management can provide additional food and cover resources around field edges, along roadways, or other areas that are traditionally managed as mowed lawns, but could be converted to low maintenance wildlife habitat. A field border strip approximately 20 to 50 feet wide can be planted with taller grasses, briers, and shrubs to form a transitional area between the forest and field. Species suitable for planting include raspberry, blackberry, wildflowers, and grasses. Be sure to check listings of local nuisance species before planting.

3.2.2.3. Butterfly and Hummingbird Gardens.

Another alternative for mowed areas and fields is to plant wildflower meadows that will supply nectar to butterflies and hummingbirds. Wildflower areas can also be included along an interpretive trail with signs that describe and identify plants. The meadows in bloom would also provide projects to be seen by a large number of full time employees and reservists to increase interest in the wildlife program. Native wildflower meadows can be planted in large field areas or in small garden areas near buildings. These areas would require a minimum of maintenance and mowing and species that would benefit include bees, birds, butterflies, hummingbirds, rabbits and rodents.

Some species of wildflowers beneficial to butterflies are butterfly bush, milkweed, bee balm, summer phlox, verbena, parsley, and mint. Additional wildflowers include asters, goldenrod, pearly everlasting and fleabane. Hummingbirds are attracted to bright red, tube-shaped flowers. Petunias, hollyhocks, gladiolus, trumpet creeper, bleeding hearts, paintbrushes, and cardinal flowers are a few of the species to include although you may need to experiment on which species are most successful in your area.

3.2.2.4 Nest Box Programs.

Many species of birds have declined in numbers due to loss of natural nesting cavities. To assist with providing suitable nest sites for cavity nesting species, artificial nest boxes can be erected. Species which prefer open habitat or edge habitat are Eastern Bluebirds, Carolina Wrens, Carolina Chickadees and Tufted Titmice. Bat boxes can also be erected. Remember that nest boxes must be monitored during the breeding season and maintained each year. Nest box programs are suitable for community outreach programs, scout groups, and school groups to assist with all phases of planning box placement, constructing boxes and monitoring.

Bat boxes provide cover for roosting bats. Bats are misunderstood mammals which are very beneficial to humans as a means of insect control (especially mosquitoes), in addition to being important members of several ecosystems. Many bat populations are declining due to loss of habitat, thus erecting boxes would help to provide both habitat and additional information regarding bat box management. Bat boxes can be erected near buildings or along field borders within reasonable proximity to a pond or stream. This placement will provide ready access to insect foraging.

Eastern Bluebirds nest in cavities located in open areas with perch sites nearby from which they hunt for insects. Along roadways or open areas on forest edges would provide excellent bluebird habitat. Boxes should be placed approximately 100 yards apart in open areas having short or sparse ground vegetation. (See Appendix E).

A nest box trail can be established along forest edges or property lines to attract **Chickadees, Wrens, and Tufted Titmice**. A nest box trail is simply a line of boxes which can be easily monitored by walking a designated pathway. The boxes should be placed on posts on the edge or just inside the wooded areas or vegetated fence lines with predator guards placed on each one. Spacing the boxes with a distance of 25 yards between each one will allow for the territorial requirements of the birds. (See Appendix E).

3.2.2.5 Food Plots.

To increase habitat diversity in field/lawn areas, **food plots** and/or **shrub plots** can be planted. Small plots can be planted with corn, millet, sorghum, or soybean to provide forage for deer and rabbit. Shrub plots provide cover and food for songbirds and small mammals. Shrubs including bearberry, red chokeberry, flowering or red-osier dogwood, smooth and staghorn sumac are fruiting/flowering species. Plantings should be done in early spring after danger of frost is over or during the fall growing season. Note: Keep in mind that food plots require preparing the plot and replanting each year.

3.3 Streams and Wetlands.

Numerous studies have documented the functional values of wetland ecosystems including nutrient/toxicant retention, groundwater recharge and discharge, flood flow alteration (abatement), sediment stabilization, primary production in energy cycling, and fish and wildlife habitat. The streams and wetlands on and adjacent to 79th ARCOM sites may provide habitat to fish, in addition to many insects, reptiles and amphibians. Birds and mammals may feed and use these water sources, as well. Usually in urban settings there is an influx of excessive pollutants to on-site streams resulting from uncontrolled runoff.

Best Management Practices for lawn fertilizer application, agriculture fertilizer applications, stormwater management, and waste disposal should be implemented at all sites.

For example:

- Use slow release fertilizers and disk into soil rather than surface spreading when possible.

- On-site stormwater management facilities should provide both quality and quantity management of runoff from all impervious surfaces. These facilities can be designed to enhance habitat by incorporating wetland design into stormwater basin design (See Figure C, Appendix B).

- Preserve or restore vegetated buffers, especially forested buffers along stream channels and wetlands to minimize erosion and enhance pollutant removal. Vegetated buffers to wetlands and streams, at least 50 feet wide (preferably wider), are recommended.

- Implement public educational programs promoting restricted use of lawn fertilizers, proper disposal of automobile and household substances, and planting of trees.

- Implement a water quality monitoring program, to assess stream parameters where streams enter and leave the site. This will provide documentation of water quality before the water enters the site and as it exits the site. Pertinent parameters include temperature, pH, dissolved oxygen, biological oxygen demand, total nitrogen, total phosphorus, turbidity, etc. Conduct fish and invertebrate surveys to further document water quality. Data can be collected and charted for use in conservation award submittals.

3.4 Miscellaneous and Future Projects.

3.4.1 Educational Opportunities.

Many schools are looking for sites which will complement and demonstrate the subjects being taught in class. Today, as more and more schools are including environmental studies in their curricula, visible demonstration of environmental consciousness is extremely important, especially in urban and rural residential areas. If teachers can show or involve the students in projects outside the classroom, their messages will be clearer to the students. Forests, wetlands, streams and other habitats can provide a unique opportunity to educate students on a variety of topics including wildlife that inhabits the area, plant species found in and around various ecosystems, the ecological benefits of wetlands, water quality studies, wildlife management techniques - the possibilities are many and site access often does not conflict with mission requirements.

3.4.2 Nature Trail Creation.

A nature trail which connects wetland, and forest with open field, and streamside habitats would provide a valuable educational experience by demonstrating the different type of habitats which are used by wildlife. Markers and/or a trail guide could be developed as educational tools for those using the trail. A species checklist in the trail guide would provide visitors with a challenge to see if they could observe all of the species found on the site. Nest boxes, perches and unique features such as stormwater management ponds could be explained using

the markers or guide. Plant species could also be identified, including trees, shrubs and wildflowers. The history of the property could also be included as part of the interpretive program. Employees/Reservists could provide much of the information for inclusion on signs or in trail guides. This project may be possible at Harrisburg, Reading, Edgemont, Lock Haven, Ashley, Williamsport, Gettysburg, or Greencastle.

A cooperative program could be developed between the reserve facility and a local high school class to create the nature trail. Once the trail is developed, nature hikes for schools, local community groups, and the families of reservists could be held demonstrating the value of urban wildlife programs.

Refer to Part V, Section 4.4 of the NRMP for an explanation of potential conservation award categories.

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART V
OUTDOOR RECREATION AND CULTURAL VALUES

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PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
PART V-OUTDOOR RECREATION AND CULTURAL VALUES

1.0 INTRODUCTION

1.1 General.

Outdoor recreation resources are natural resources which provide opportunities for outdoor recreation of various intensities. There are no identified natural resource areas managed for multiple use that support intensive recreation within the 79th ARCOM. All areas that can support low intensity recreation need to be maintained or enhanced to provide recreational activities for U.S. Army Reserve personnel and their dependents.

1.2 Definitions & Application to the 79th ARCOM.

1.2.1 Outdoor Recreation Area.

An outdoor recreation area is a land or water area with characteristics that make it suitable for one or more specific outdoor recreation activities. It does not however, include athletic facilities such as ball fields. There are no identified outdoor recreation areas within the 79th ARCOM.

1.2.2 Concentrated Recreation Activities.

Concentrated recreation activities occur within limited areas which can accomodate intensive use. These activities include: camping (tent and trailer), picnicking, boating (requiring ramps, docks, piers or marinas), water-skiing, swimming, winter sports (skiing, sledding, skating), etc. There are no identified concentrated recreation areas within the 79th ARCOM.

1.2.3 Dispersed Recreation Activities.

Dispersed recreation activities occur within larger areas which can accommodate limited use. These activities include: hunting, fishing, boating, hiking, climbing, nature study, bird-watching, etc. The following installations of the 79th ARCOM have potential areas that could be further developed or enhanced to qualify as a dispersed recreation area for non-consumptive activities including nature study, bird watching or hiking. These include: Ashley, Bloomsburg, Bristol, Edgemont, Greencastle, Lock Haven, Williamsport, and Worcester. The Reading site is located adjacent to a hiking trail which can be utilized by reserve personnel.

1.2.4 Special Interest Area.

A special interest area is an area with an outstanding feature, natural or man-made, which contributes cultural value and may provide passive recreation opportunities. The Greencastle AMSA and Harrisburg USARC have access to ball fields that qualify as a special interest area.

1.2.5 Archeological, Historical, Geological, and Botanical Special Interest Areas.

This will be addressed in the appropriate sections of the Cultural and Natural Resource Management Plans respectively.

1.2.6 Scenic Area.

A scenic area is an area of outstanding natural beauty. The Marcus Hook Marine AMSA provides a special interest area due to its location on the Delaware River that is ideal for a picnic or just to watch the sunset. This area could be managed for the preservation and protection of its scenic importance in conjunction with its military mission.

1.2.7 Natural Resource Base.

The natural resource base consists of those natural and physical attributes which make up a land or water area. Among the attributes are soils, topography, drainage characteristics, water bodies, climate, vegetation, wildlife, and aesthetic appearance. The natural resource base, because of difficulties with one or more of these attributes, may preclude use of an area as an outdoor recreation area. On the other hand, the natural resource base can contribute to the value of an outdoor recreation area, or due to its own inherent value, it may cause an area to be designated a special interest area.

2.0 PLANNING OUTDOOR RECREATION AREAS

2.1 General.

In planning for outdoor recreation, it is important to first identify, the natural resource base and second, the needs and desires of potential users. Only when these factors have been given adequate consideration, can one select the appropriate area(s) for outdoor recreation. Additional references are included in Army Technical Manual 5-635.

2.2 Site Analysis.

Site analysis is fundamental to understanding the natural resource base and the manmade framework in which a reserve facility operates. Site analysis involves not only acquiring and documenting information about existing and proposed conditions (location, soils, topography, infrastructure), but also evaluating that information in terms of both advantages and disadvantages for selection of an outdoor recreation area. Site analysis should be coordinated with the facility master plan. For more detailed descriptions on site analysis of the 79th ARCOM, see Part 1 of the NRMP.

2.3 Program Analysis.

Determining which recreational activities are needed and desired by any population, civilian or military, can be the most difficult step in planning for outdoor recreation. It is important to know who are the potential users of an outdoor recreation area in order to estimate accurately both the type and the quantity of recreation facilities needed. In the case of the 79th ARCOM,

it is probable to determine that outdoor recreation areas will be used primarily by military personnel and their dependents. It is necessary to determine whether the potential users of the outdoor recreation area will participate more frequently in concentrated recreation activities (camping, boating, picnicking, etc.) or dispersed recreation activities (nature study, hiking, bird watching, etc.) and which activities are more feasible to the facility. It is most likely that dispersed recreational activities are more feasible and will be utilized more at 79th ARCOM BASOPS supported facilities.

2.4 Selection of Outdoor Recreation Areas.

2.4.1 Multiple Use Areas.

Wherever the natural resource base can sustain more than one recreation activity or where activities are compatible with one another, it is both economical and convenient to locate several activities in a single area. This reduces the number of support facilities such as shelters, restrooms, trash collection, and parking lots which otherwise must be provided for each activity. It also greatly economizes on the amount of required utilities.

2.4.2 Compatible Recreation Uses.

As a general rule those activities which are noisy or which may prove hazardous to non-participant require clear separation from other recreation activities. The majority of recreation activities profit from some interaction, even if only in terms of pedestrian connection with other recreation activities.

2.4.3 Compatible Land Uses.

Outdoor recreation areas should be located as near as possible to the majority of users. Areas used primarily for outdoor recreation must comply with the multiple use concept.

2.4.4 Potential for Expansion.

When areas are selected for outdoor recreation use, it is important to consider the future as well as present needs of the facility. It is suggested to make at least limited projections of future demand so that sites can be chosen which are large enough to encompass space for potential expansion.

2.4.5 Optimum Sites.

Every recreation activity has basic requirements which must be satisfied by the natural resources of an outdoor recreation area and by man-made improvements. For specific requirements on each activity and area refer to the Army TM 5-635.

2.5 Coordination.

When actual design and development of an outdoor recreation area begins, there are agencies at all levels which can be used for additional information and/or ideas. It is recommended that agencies of Federal, state, and local governments and the private sector be contacted for any needed information on design, construction, and guidelines. One of the more important

issues of this era are having facilities that are handicap accessible. All installations must confirm that they meet the requirements set forth by the Architectural Barriers Act, 42 U.S.C. 4151-4157 and the Americans with Disabilities Act of 1990, Public Law 101-336.

3.0 PROTECTION AND MAINTENANCE OF OUTDOOR RECREATION AREAS

As established in Appendix F of the Army Technical Manual 5-635 "Outdoor Recreation Cooperative Agreement" it is the installation's/facility's responsibility to " Maintain, operate and manage outdoor recreation resources..., and protect and preserve special interest areas."

3.1 Protection.

Since the quality and success of outdoor recreation areas is dependent upon the natural resource base, protection of that base, must be considered as a fundamental component of a site's development and management. This is especially true of special interest areas which are designated as such because their resources are judged unusual or irreplaceable. The principle protective device for recreational resources is appropriate kinds and amount of use.

3.1.1 Controlling Devices.

An obvious method of controlling the number of people who use an outdoor recreation area is to control or limit access. This may not apply to 79th ARCOM sites since use is limited to full-time employees, assigned reservists and their dependents. However, vehicular and pedestrian access may be limited by the number and location of roadways and pathways made available. In addition, entrances may be gated and closed when an area has reached capacity. Gates can be employed during times of anticipated peak usage, such as weekends or holidays, so that full-time gatekeepers are not necessary. Additional controlling devices should include limited access to non-consumptive activities (i.e. bird watching) or access at certain or specified hours of operation. Certain activities that require quiet or peacefulness cannot coincide with a drill or other tactical maneuvers. Other ways to encourage outdoor recreational activities is to establish plans to enhance natural areas including development of habitat that attracts wildlife, including planting specific types of vegetation (Specific vegetation practices will be addressed in Parts 1 and 4 of the NRMP) or providing nest boxes, etc.

3.1.2 Public Education.

Making outdoor recreation users aware that natural resources are not indestructible, should be the reserve facility's first step toward protection of recreational areas. The general public is becoming increasingly sensitive to the need for environmental protection as a result of depleted resources, however emphasis can also be stressed in recreational programs. When rules and regulations for the use of outdoor recreation areas are posted on signs or printed in brochures, it is helpful to provide a brief explanation of the concern for the natural resources and an appeal for the user to aid in their protection by not abusing any of these precious resources.

3.1.3 Critical Plant and Animal Habitat.

Under the Endangered Species Act of 1973 (28 December 1973 PL 93-205, 87 Stat. 884, and as amended 10 November 1978 by PL 95-632, 92 Stat 3751) the Federal Government is responsible for the protection of endangered and threatened native species of flora and fauna. Endangered and threatened species are being studied by the Pennsylvania Science Office of the Nature Conservancy. Two species of potential concern are currently under investigation: An ***Umbrella Sedge*** (*Cyperus Sp.*) identified at Marcus Hook and ***Butternut*** (*Juglans cinerea*) identified at Williamsport.

3.1.4 Special Interest Areas.

If a special interest area, particularly containing a critical habitat, is of extreme value, the best protection may be to prohibit use including any form of recreation. However, special interest areas may be able to accomodate use with careful administration.

3.2 Maintenance.

Good maintenance of outdoor recreation areas should be considered a form of protection for the natural resource base. It not only provides timely environmental repair but also encourages voluntary housekeeping by visitors. For specific requirements for maintenance procedures refer to the Army Technical Manual 5-635. Listed below are summaries of these procedures.

3.2.1 Sanitation.

Sanitary facilities of any kind require a high level of maintenance.

3.2.1.1 Trash Collection.

Adequate trash collection is essential to good maintenance. Trash cans should be convenient and readily visible to the public and collection trucks. Cans should be emptied frequently and kept clean. Where applicable, local community recycling programs must be adhered to.

3.2.1.2 Restrooms.

Recreationists prefer flush toilets, and these should be provided whenever possible. However, in low-use or primitive recreation areas, it may be necessary to use other facilities such as dry-pit privies or portable chemical toilets. Proper maintenance of the aforementioned facilities is essential.

3.2.2 Special Maintenance.

3.2.2.1 Vegetation.

Since existing vegetation contributes to the attractiveness of outdoor recreation areas, it is important to see that it is well-maintained. Mowing and/or mulching practices should take place on a regular basis. At the same time, all dead trees and branches which could prove dangerous should be removed from the area. Poisonous or undesirable plants should be removed from the

area, however, before plants are removed , consideration should be given to the intensity of use in an area and to the desire to maintain natural balance. Reference Parts I and IV of the Natural Resource Management Plan for further instruction on vegetation practices.

3.2.2.2 Trails.

All trails should be checked periodically for removal of fallen trees and branches as well as repairs necessitated by heavy use or by weather.

3.2.2.3 Outdoor Recreation Equipment.

These items (i.e. water fountains, picnic tables, barbecues) require periodic inspection on the performance of working parts and any needed repairs should be made promptly.

3.2.3 Environmental Repair.

Areas should be checked regularly for signs of erosion and sedimentation and for plant disease or destruction.

3.2.4 Maintenance Schedules.

Reserve facilities, as applicable, should develop a maintenance plan for its outdoor recreation areas. Intense-use outdoor recreation areas need daily care during their peak seasons

4.0 COMMUNITY INVOLVEMENT

4.1 Introduction.

Community involvement begins with the development of a particular program as identified by the needs of the particular reserve facility (i.e., a wildlife or nature program). Most sites have employees who have talents which are not generally known. These employees will provide a pool of knowledge which should be used. Finding and encouraging these people to become involved with projects will help in the development of an excellent program which will be a model for others to follow. These efforts help to improve morale, resulting in employees who feel they have a more comfortable, environmentally progressive, and aesthetically pleasing place to work. It will also improve the reserve facility's public relations image with local residents by demonstrating conservation efforts and environmental stewardship. It is encouraged that facilities involve members of the community (neighborhood associations, 4-H, church and scout groups), conservation groups, local, state, and Federal governmental agencies in the development and implementation of a program.

4.2 Educational Opportunities.

Most schools are looking for sites which will complement and demonstrate the subjects being taught in class. Today, as more and more schools are including environmental studies in their curricula, visible demonstration of environmental consciousness is extremely important, especially in rural residential areas. If teachers can show or involve students in projects

outside the classroom, their messages will be made clearer to the students. Reserve facility employees may give talks to students regarding environmentally conscious practices at the facility which could then be followed up by a field trip to the site to actually see the practices in action. A cooperative program with a school might include the creation of a nature trail. Once the trail is developed, nature hikes for schools, community groups, and reserve personnel and their families could be held. Students that helped with the development of the trail could serve as tour guides or they could create a brochure describing certain areas or aspects of interest along the trail.

4.3 Practices.

A good example of a community involvement program is a nest box program. It is an excellent initial project because nest boxes are highly visible, generally have a high rate of success, involve a large number of people provided that there are no safety hazards or liabilities associated with their presence on the site, and demonstrate a long-term commitment of the reserve facility to the environment in providing habitat. The public can assist in cleaning and/or repairing the boxes after they have been installed and in monitoring them on a regular basis. Similar to this program could be the creation of a butterfly or hummingbird garden. A planting day might be planned to enhance cover or habitat types. (Habitat fragmentation has lead to fewer species within remaining habitat patches.) Another project which may attract local groups is a photo contest. The winning entries could be used to create an exhibit for the main entrance to the reserve facility. Categories might include animals, plants and scenic areas found on the site, and pubic involvement activities. Currently, the Iowa Army Ammunition Plant has actively used volunteers to assist in enhancing wildlife habitat at the installation and the 94th ARCOM has developed a recycling and solid waste education program. Most of the installations of the 79th ARCOM have established a community involvement program. Some of these include allowing local groups to use facilities or the grounds of the installation to hold various activities or events. For a detailed list of these programs see Table 13, Appendix C.

4.4 Recognition.

An incentive to incorporate this type of program at a reserve facility is the possibility of being recognized by the Department of the Defense (DoD) with various environmental awards. The DoD recognizes installation, individual and team efforts with Environmental Quality, Natural Resource Conservation and Pollution Prevention awards each year. The Environmental Quality Awards are given on alternating years to an industrial installation and to a non-industrial installation based on achievements made during the calendar years prior to the presentation of the award. The purpose of this award is to recognize efforts to protect human health and the environment by achieving full and sustained compliance with all applicable environmental requirements and identifying and addressing, in a timely manner, the threats posed by contamination from past DoD operations.

The Natural Resource Conservation Awards are awarded by the Secretary of Defense to the installation of the Army, Navy or Air Force that conducted the most outstanding conservation program during the preceding three years. This award will be given on alternate years to a small installation (10,000 acres or less) and the next year to a large installation (more than 10,000 acres). The purpose of this award is to recognize efforts to promote natural resource conservation, including the identification, protection, and restoration of biological

resources and habitats: the sound management and use of the land and its resources; and the promotion of the conservation ethic.

The Pollution Prevention award is awarded on alternating years to an industrial or non-industrial installation based on achievements made during the calendar years prior to the presentation of the award. The purpose of this award is to recognize efforts to prevent pollution at the source, including practices that reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources; and efforts to divert materials from the waste stream for recycling. The 79th ARCOM has already received the 1993 Department of Defense Energy Conservation Award for its efforts in turning off lights when not needed and renovations to make facilities more efficient.

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PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
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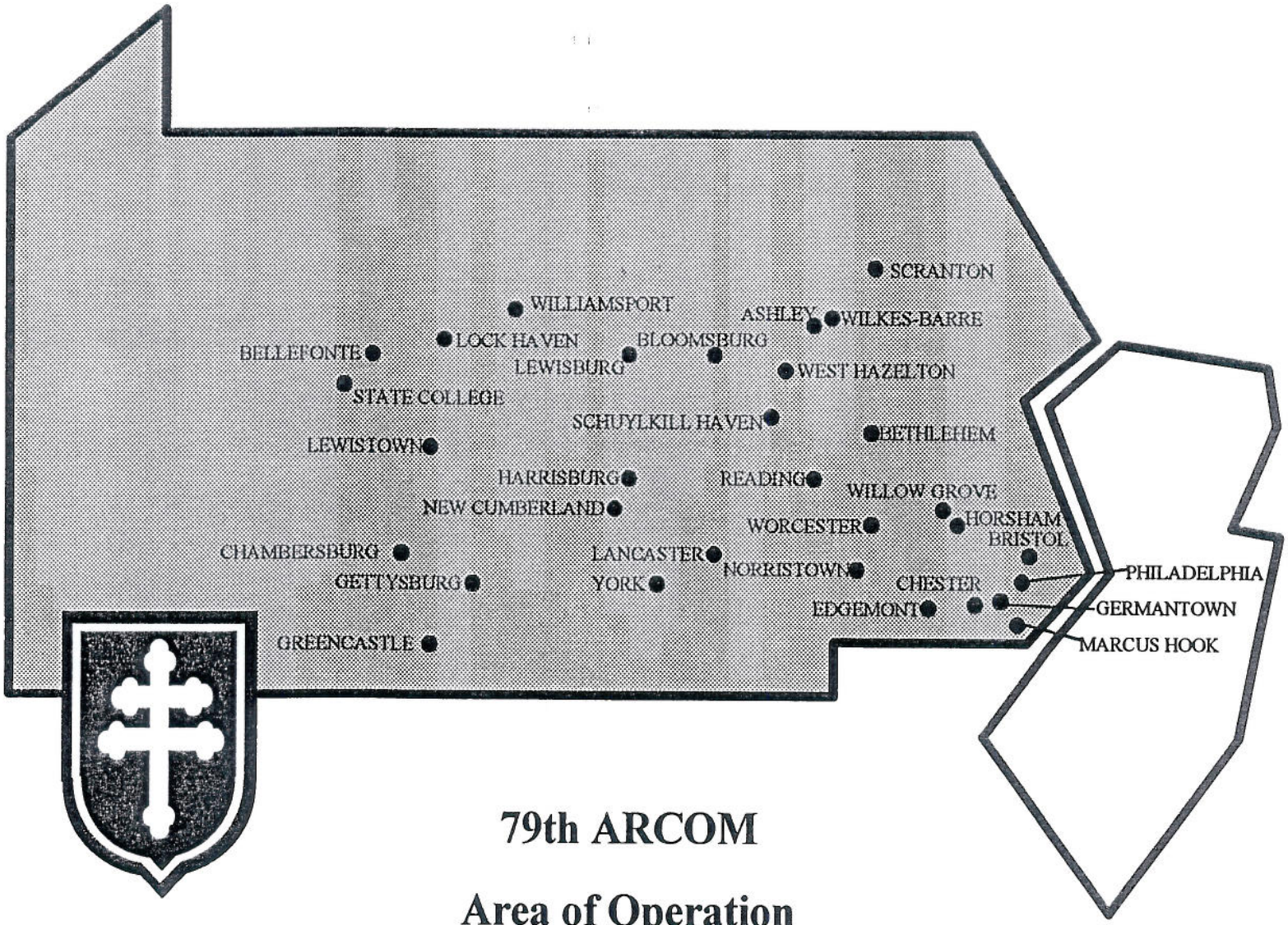


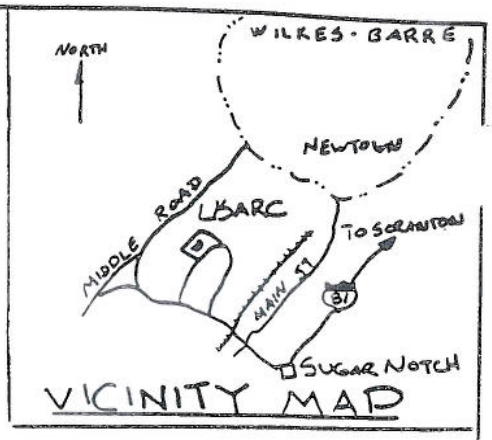
79th ARCOM

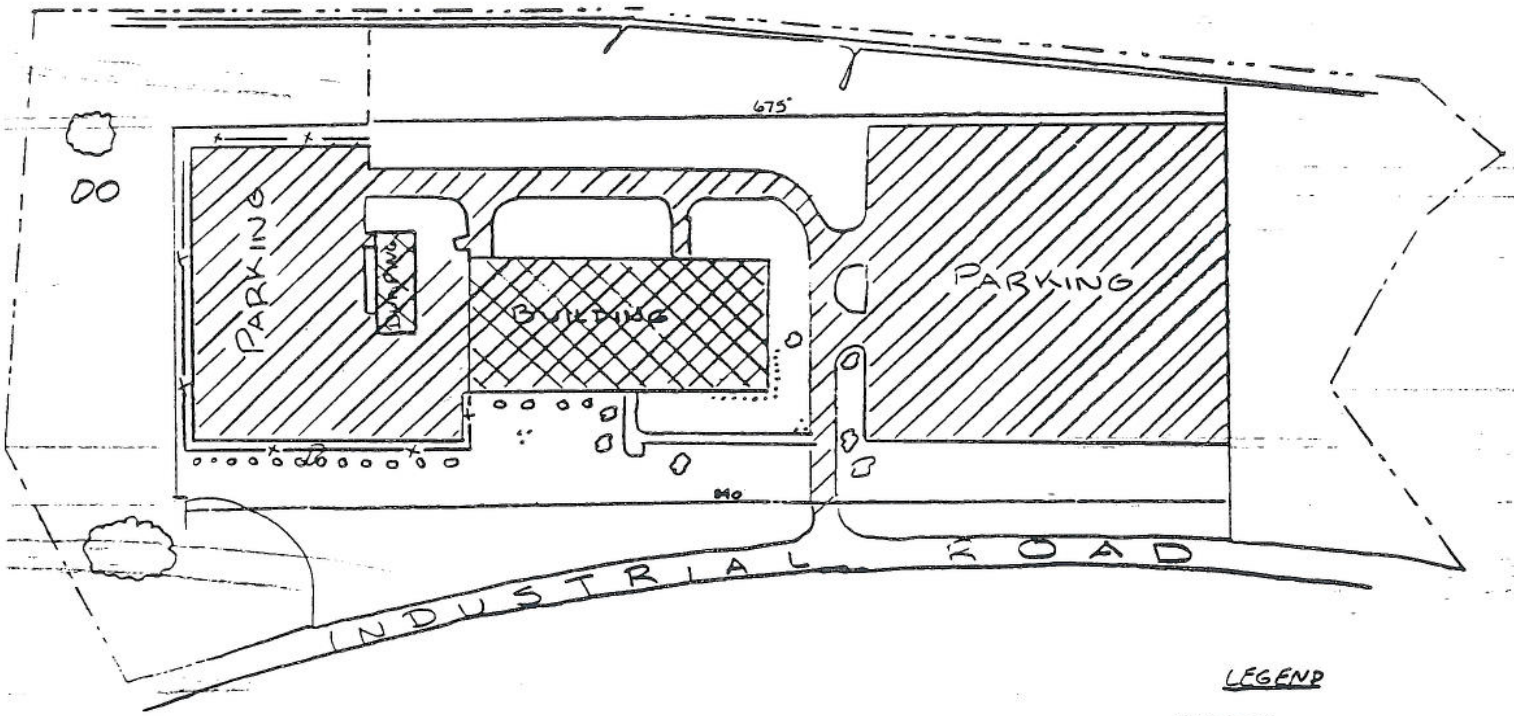
Area of Operation

Pennsylvania

August 1995

FIGURE #1





USARC ASHLEY
WHITEFORD RD SUGAR NOTCH

LEGEND

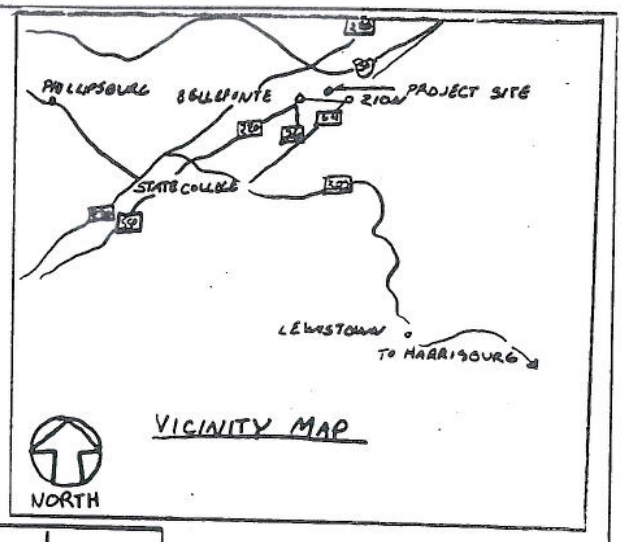
- BUILDING
- PAVEMENT
- GRASS
- FENCE LINE
- PROPERTY LINE
- TREES, BUSHES

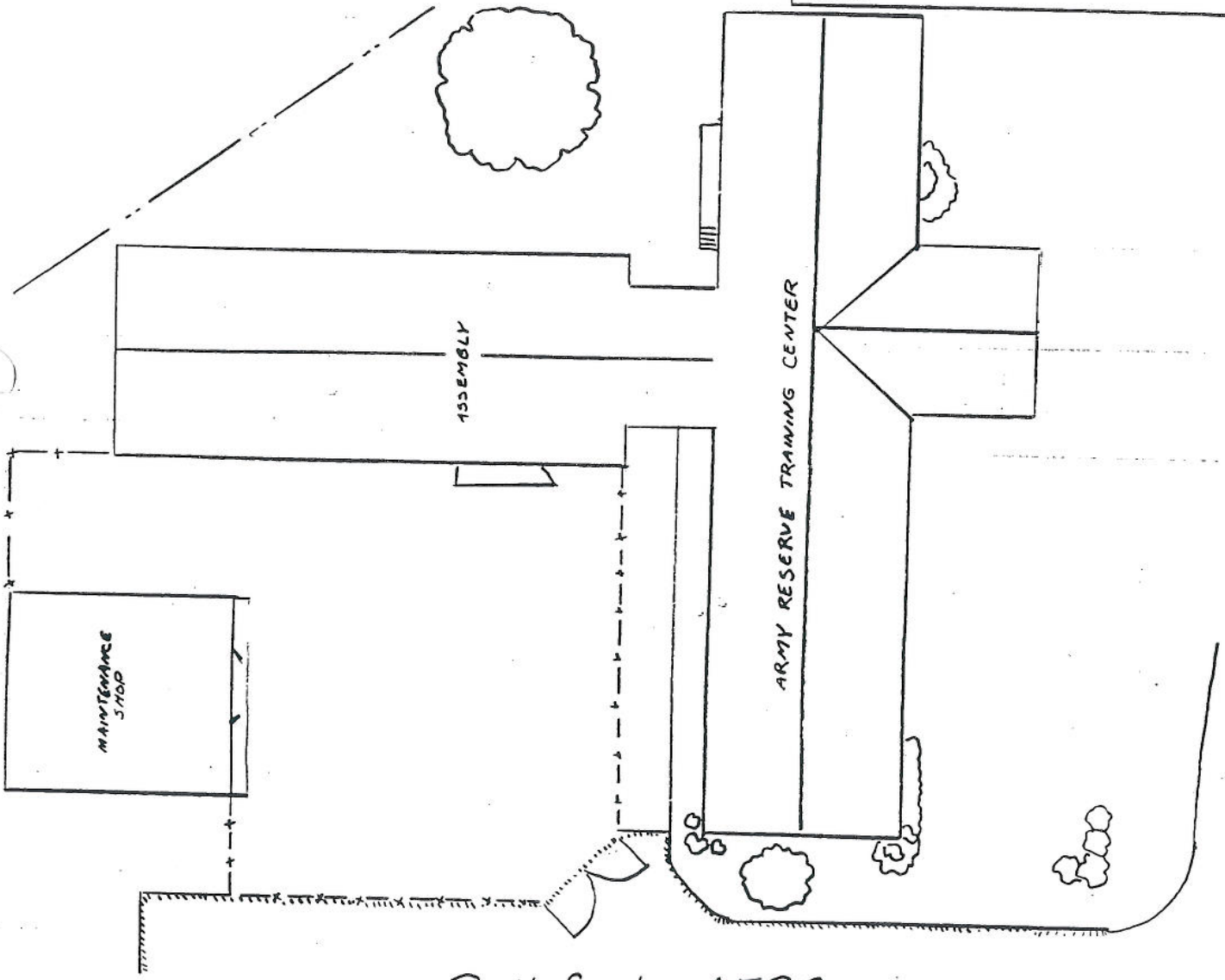
US Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Ashley USARC

Figure #2

September 1994





Bellefonte AFRC

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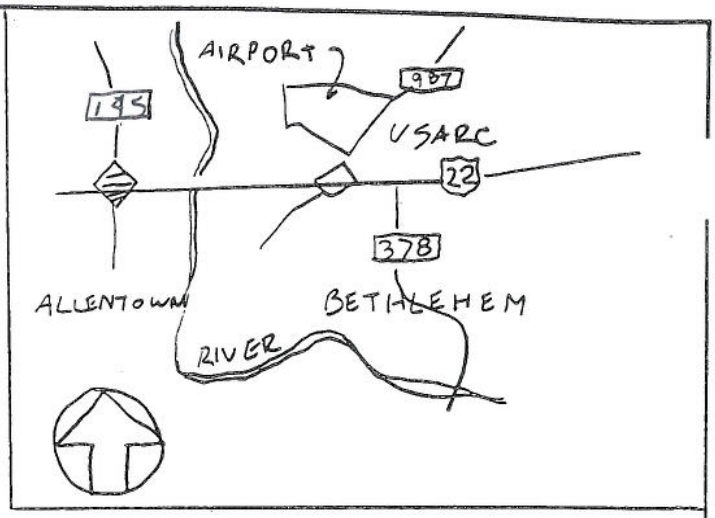
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Bellefonte AFRC

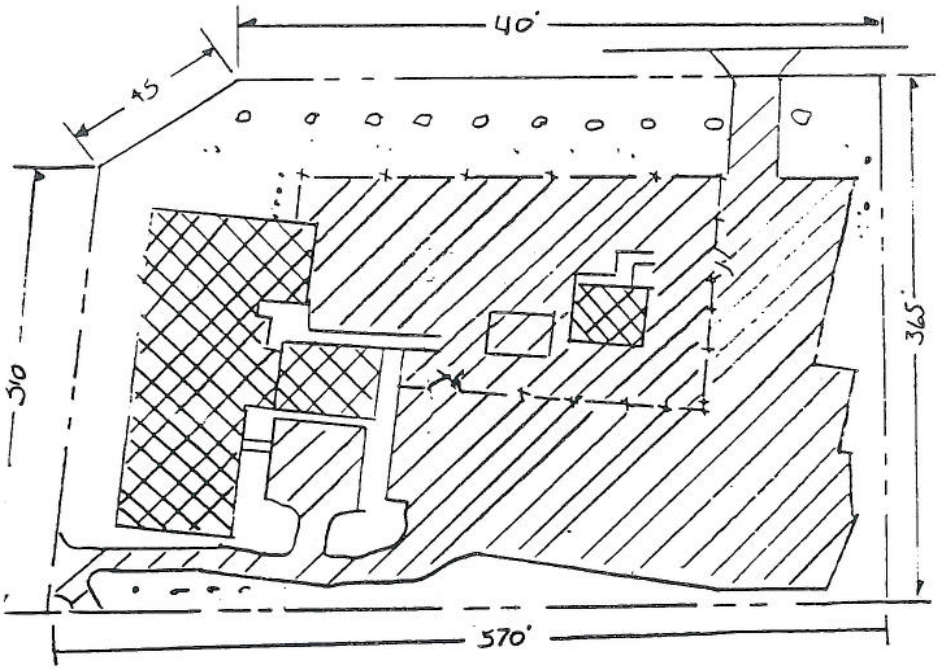
Figure #3

September 1994



VICINITY MAP

USARC ALLENTOWN - BETHLEHEM PA



USARC BETHLEHEM

2940 AIRPORT ROAD

BETHLEHEM, PA

100 50 0 100 200

LEGEND

BUILDING

PAVEMENT

GRASS

TREES, SHRUBS, HEDGES, BUSHES

FENCE LINE

PROPERTY LINE

US Army Corps of Engineers
Baltimore District
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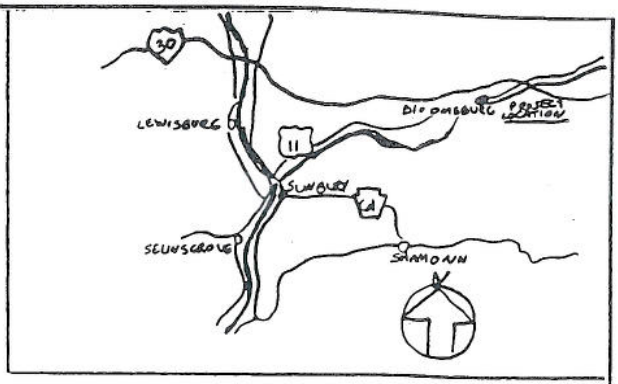
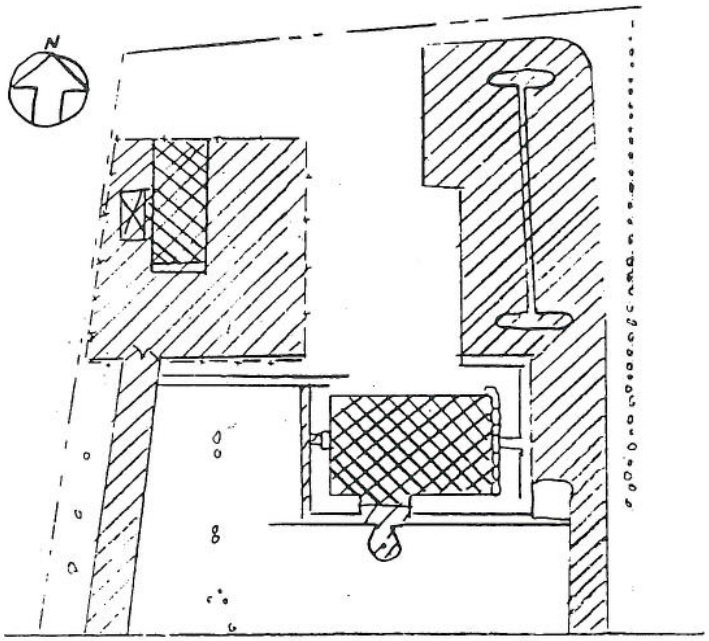
Baltimore, MD 21203-1715

Bethlehem USARC

Figure #4

September 1994





USARC BLOOMSBURG
1469 OLD BERWICK ROAD
BLOOMSBURG, PA

50 25 0 50 100

LEGEND

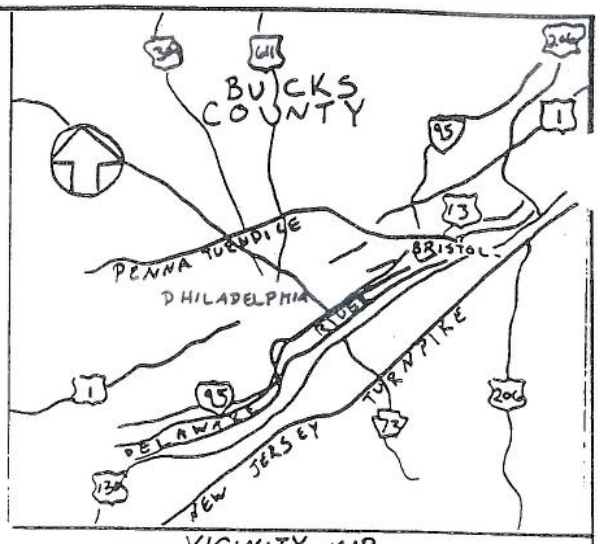
- BUILDING
- PAVEMENT
- BUSHES, TREES
- GRASS
- FENCE LINE
- PROPERTY LINE

US Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

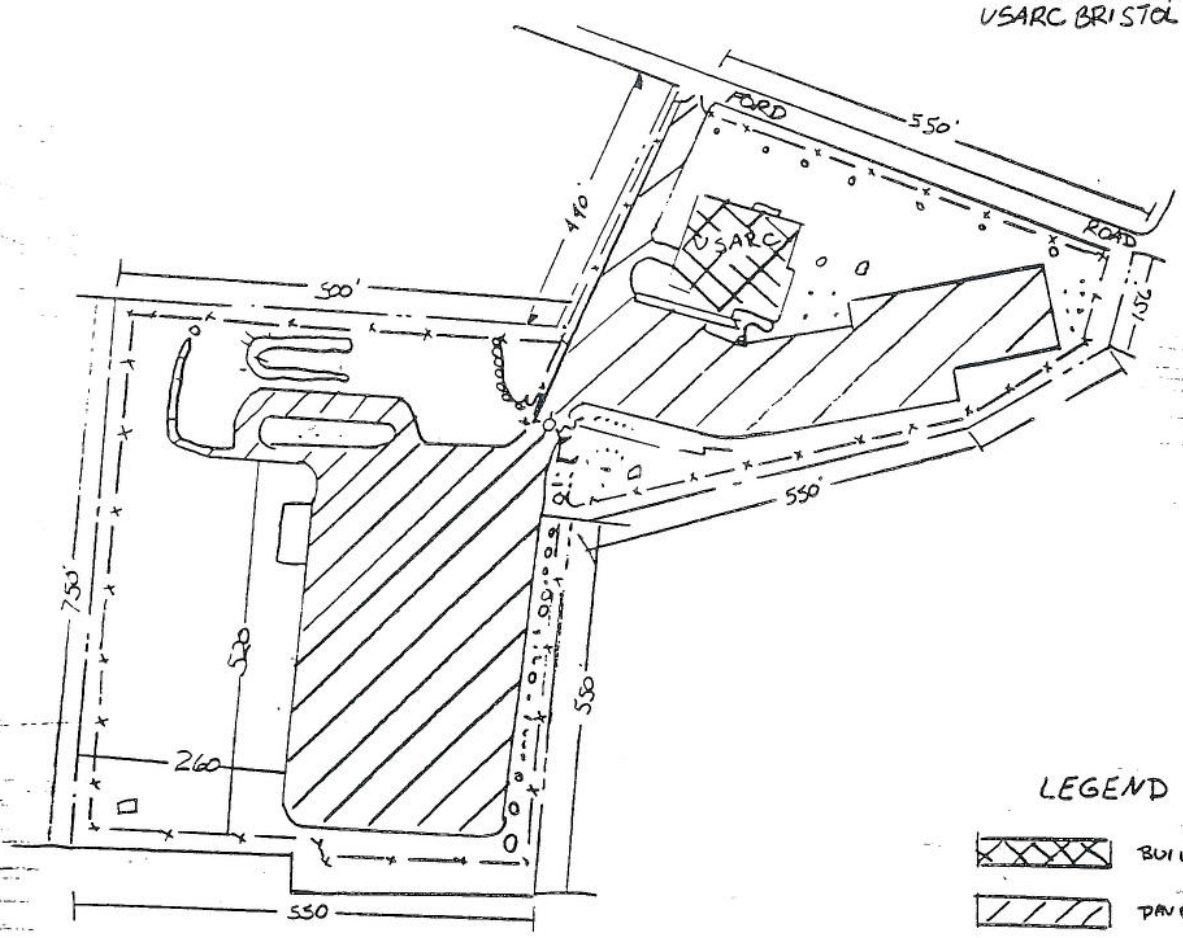
Bloomsburg USARC

Figure #5

September 1994



VICINITY MAP
USARC BRISTOL PA

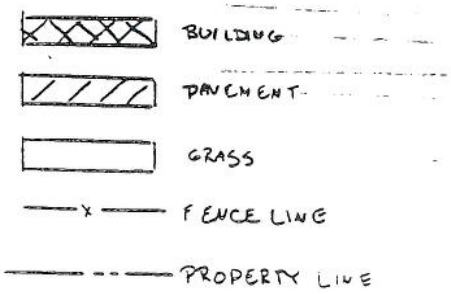


USARC BRISTOL

FORD ROAD

BRISTOL PA

LEGEND



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Baltimore District
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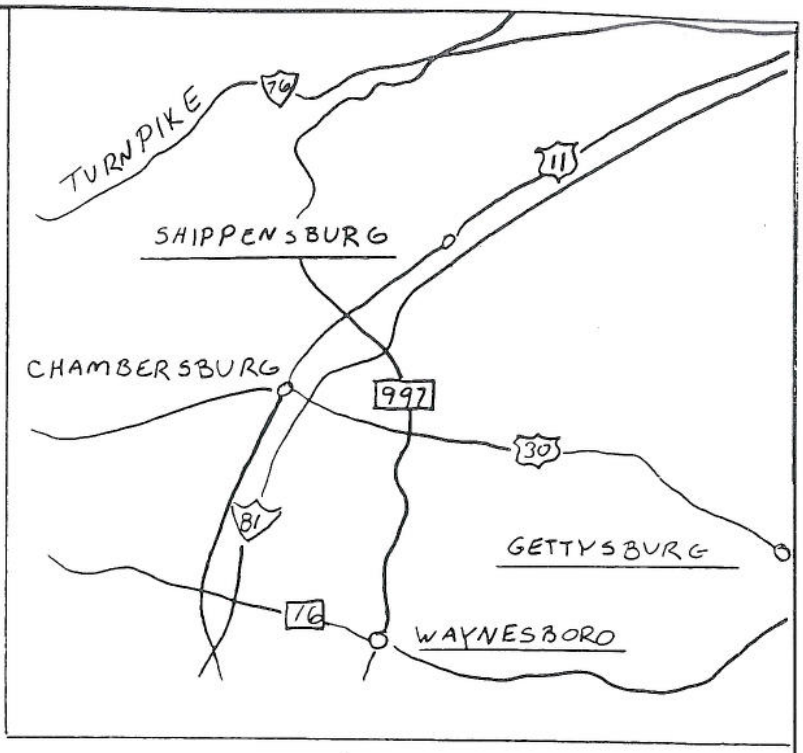
Bristol USARC

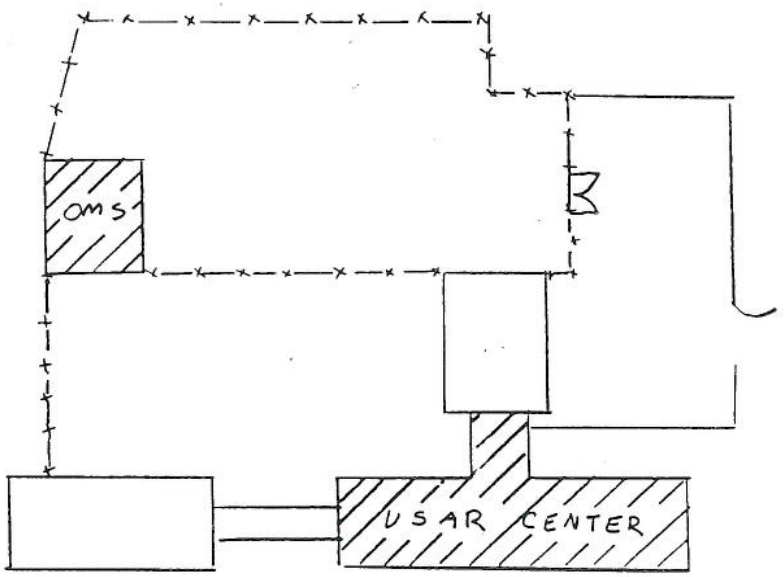
Figure #6

September 1994



VICINITY MAP

SCALE: 1" = 9 MI



CHAMBERSBURG USARC

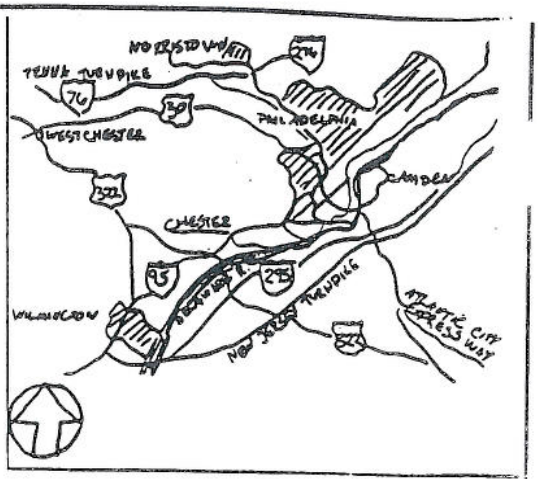
SCALE: NONE

US Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

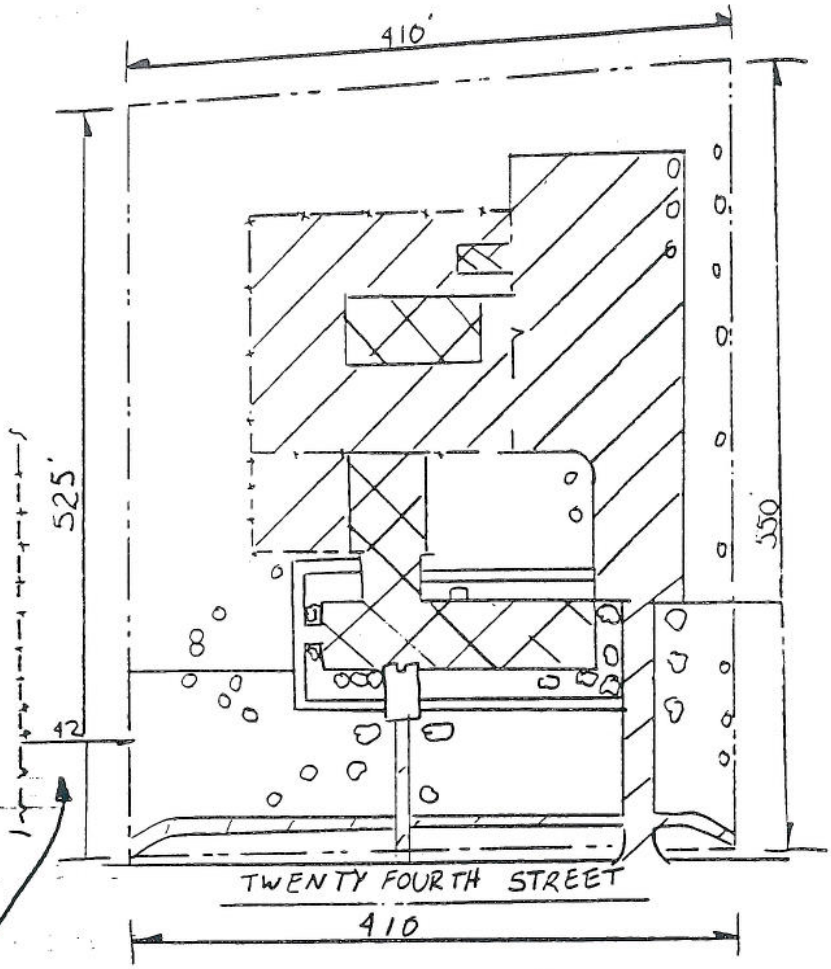
Chambersburg USARC

Figure #7

September 1994



VICINITY MAP
USARC CHESTER PA.



USARC CHESTER

500 W 24TH ST

CHESTER PA

100 50 0 100 200

LEGEND

- BUILDING
- PAVEMENT
- GRASS
- FENCE LINE
- PROPERTY LINE
- EVERGREENS, TREES

US Army Corps of Engineers
Baltimore District
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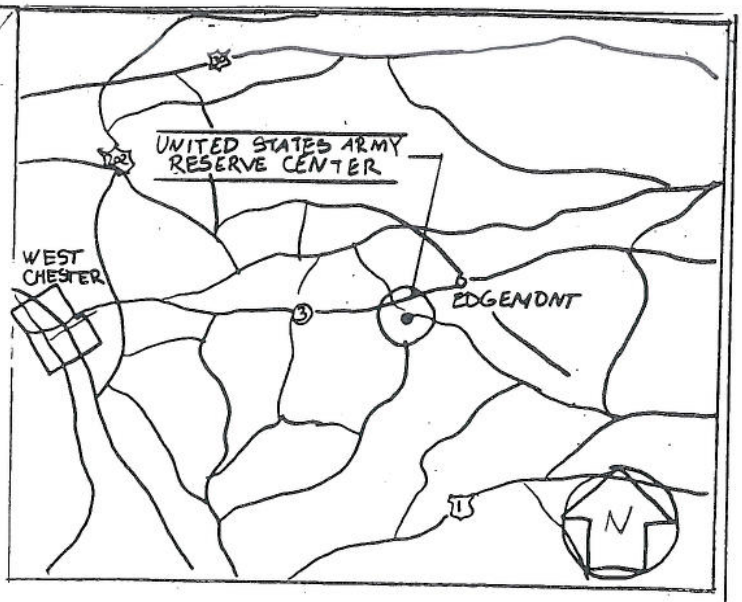
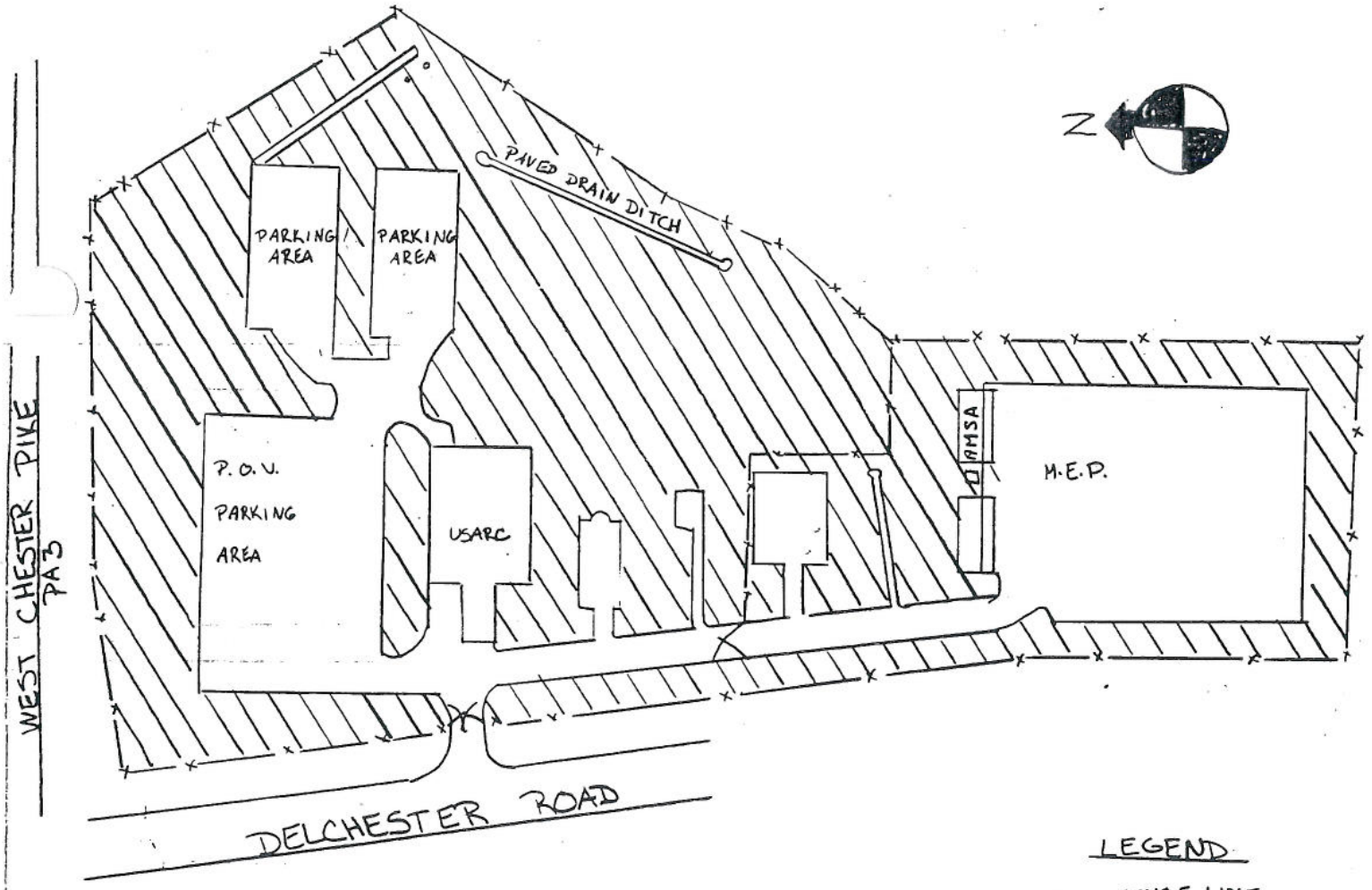
Chester USARC

Figure #8

September 1994





EDGEMONT USARC / AMSA

NOT TO SCALE

LEGEND

— × — FENCE LINE

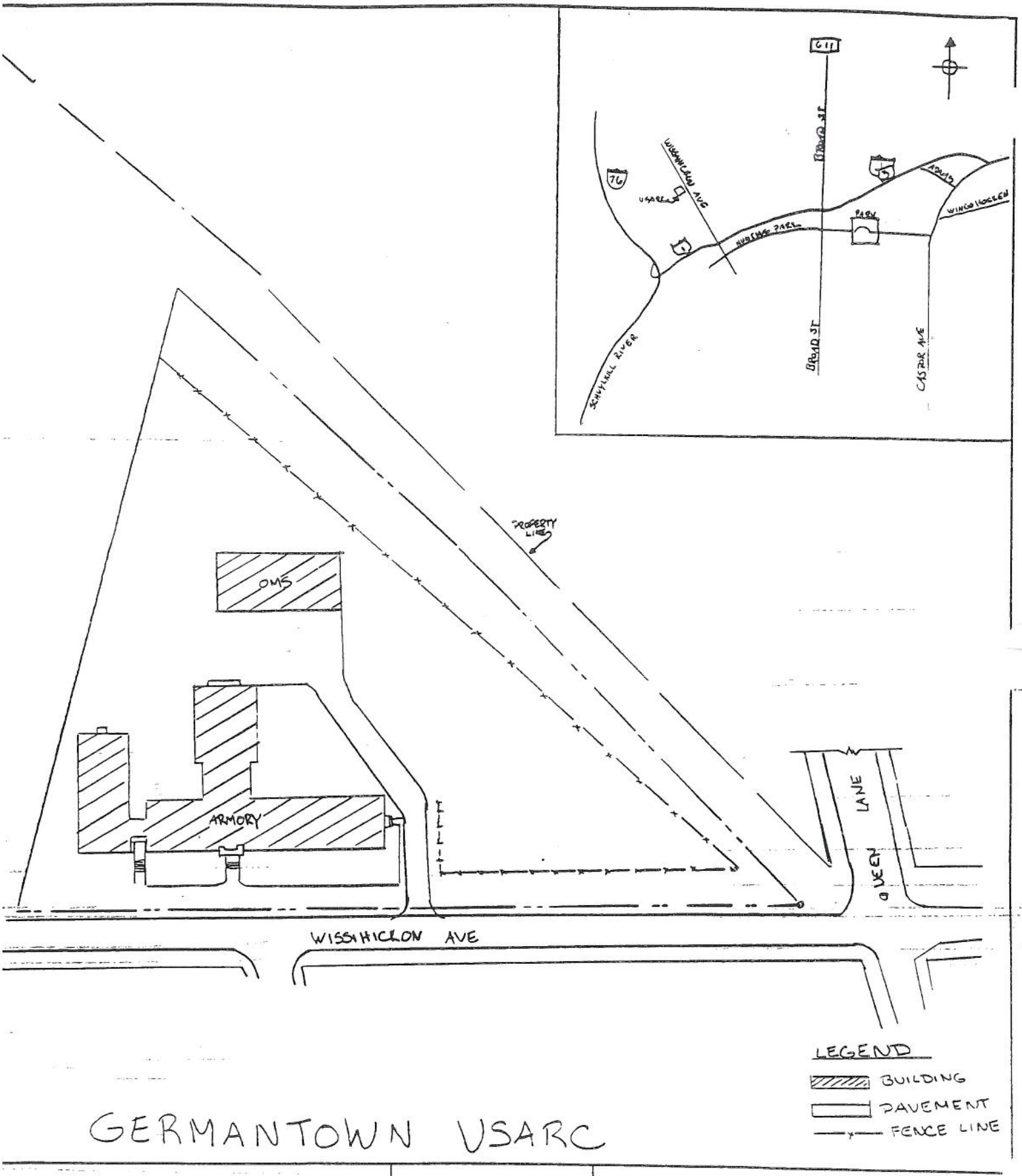
GRASS AREA 15.0 ACRES

US Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Edgemont USARC and AMSA

Figure #9

September 1994



GERMANTOWN USARC

US Army Corps of Engineers
Baltimore District
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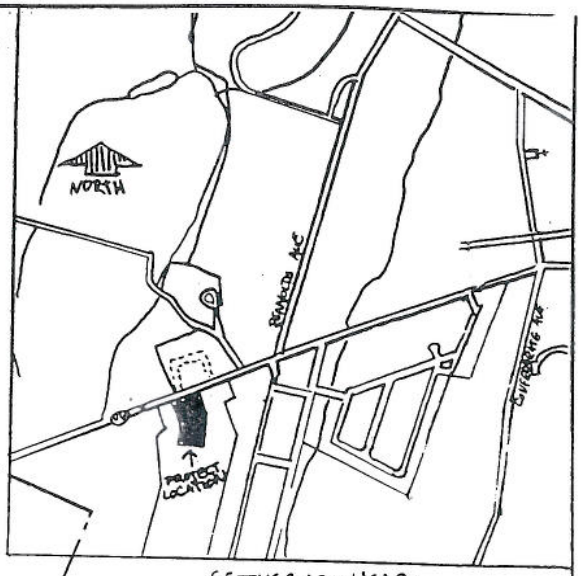
Baltimore, MD 21203-1715

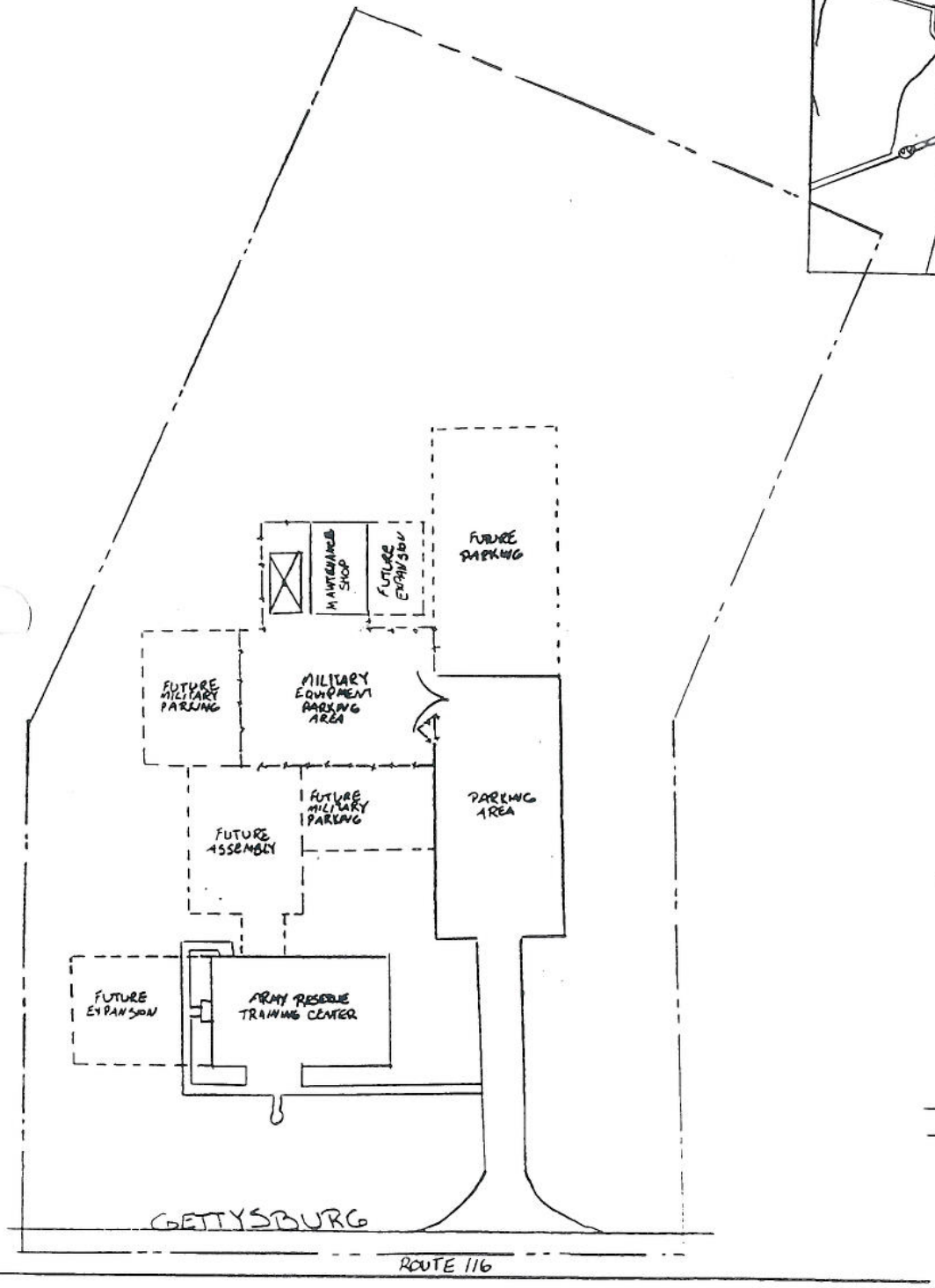
Germantown USARC

Figure #10

September 1994



GETTYSBURG USARC
LOCATION MAP



LEGEND

PROPERTY LINE

FENCE LINE

US Army Corps of Engineers
Baltimore District
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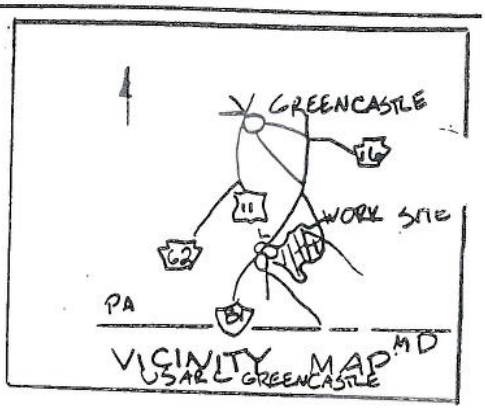
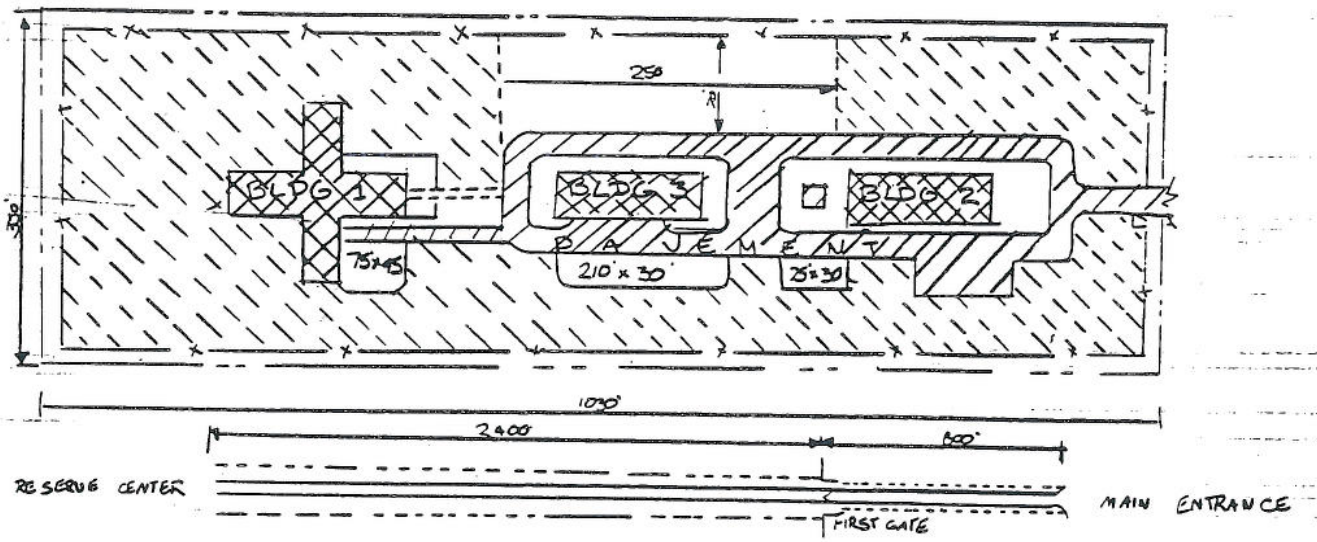
Gettysburg USARC

Figure #11

September 1994





USARC/AMSA GREENCASTLE
RTE 11 GREENCASTLE PA
SCALE - NONE

LEGEND

- BUILDING
- PAVEMENT
- STONES or GRAVEL SURFACE
- GRASS
- FENCE LINE
- PROPERTY LINE
- TREES, SHRUBS, BUSHES

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Baltimore District
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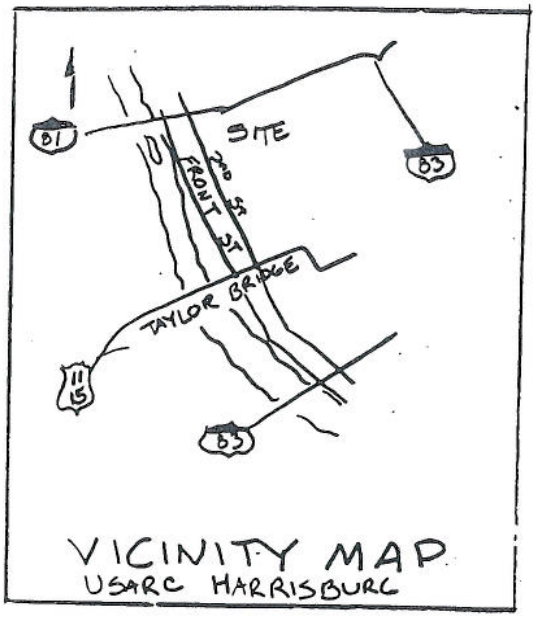
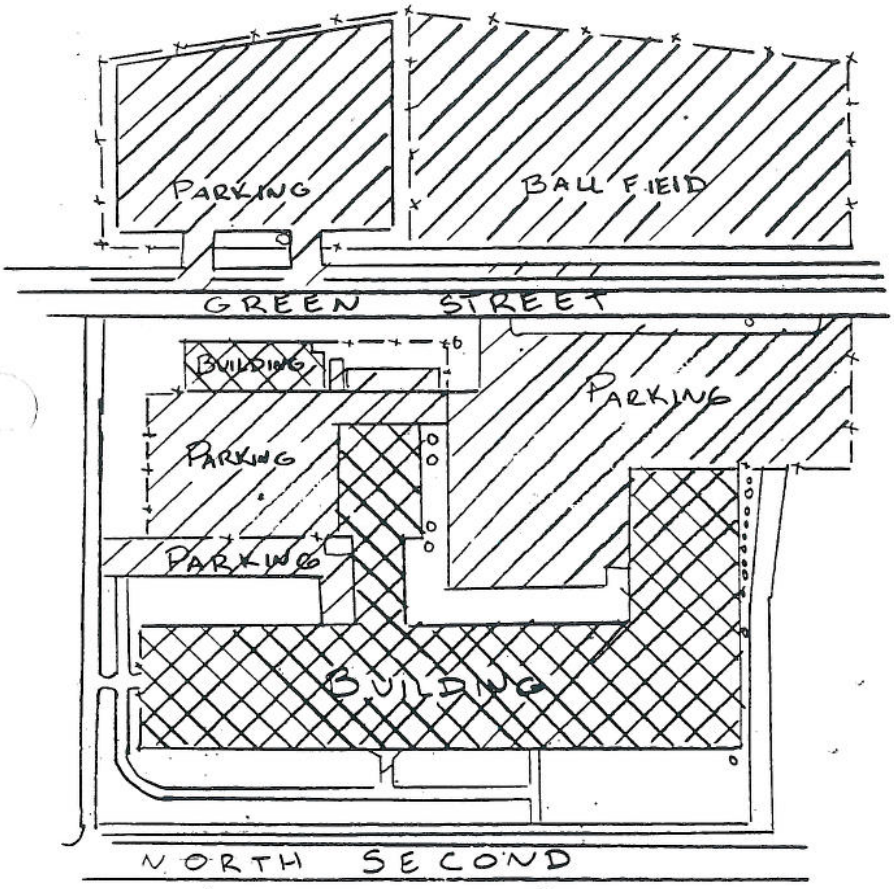
Greencastle USARC and AMSA

Figure #12

September 1994



VICINITY MAP
USARC HARRISBURG



LEGEND

BUILDING

TREES SHRUBS

PAVED AND OR MAINTAINED BY OTHERS

GRASS

HARRISBURG AFRC

2997 N. SECOND ST, HARRISBURG PA

US Army Corps of Engineers
Baltimore District
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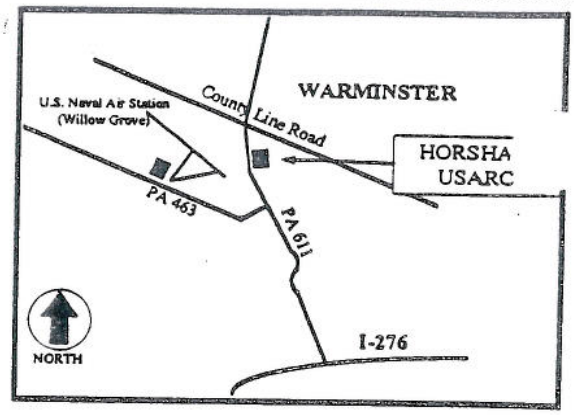
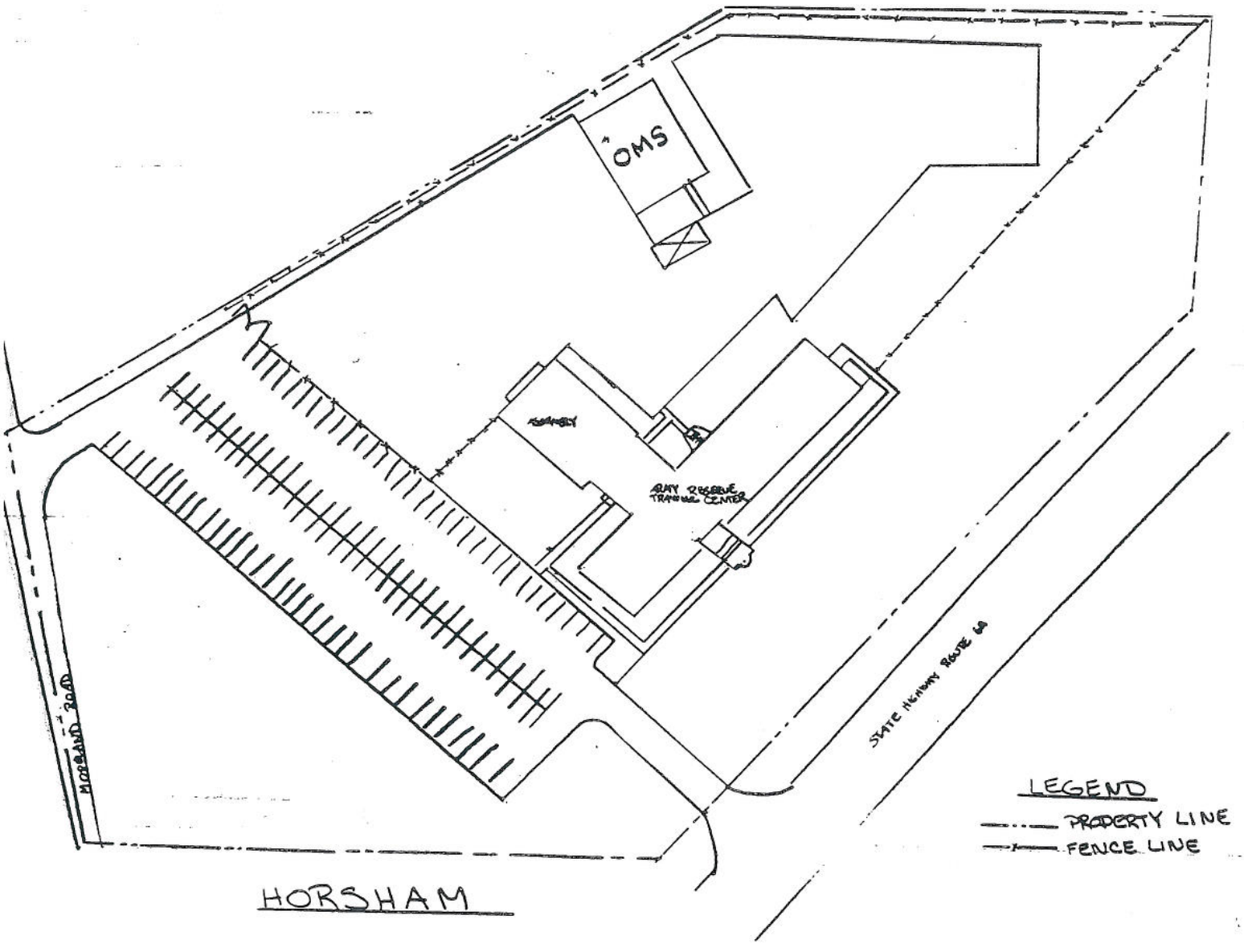
Baltimore, MD 21203-1715

Harrisburg AFRC

Figure #13

September 1994





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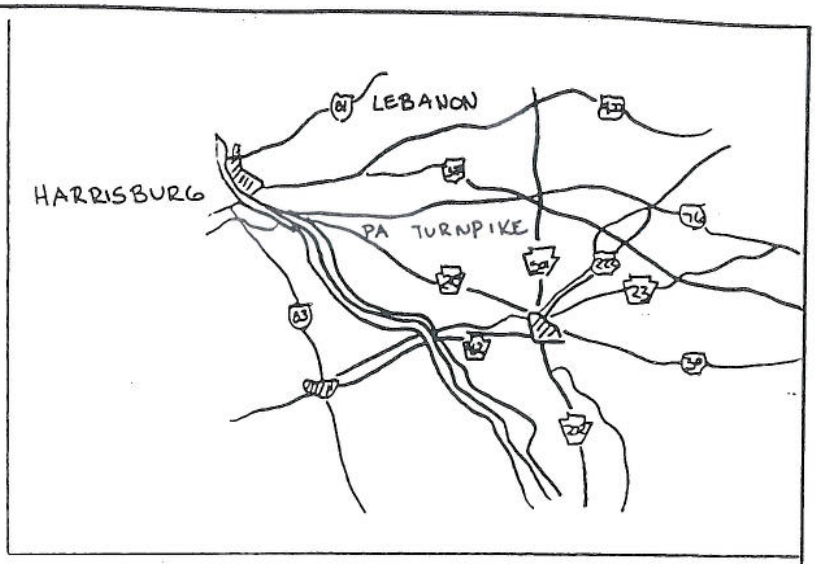
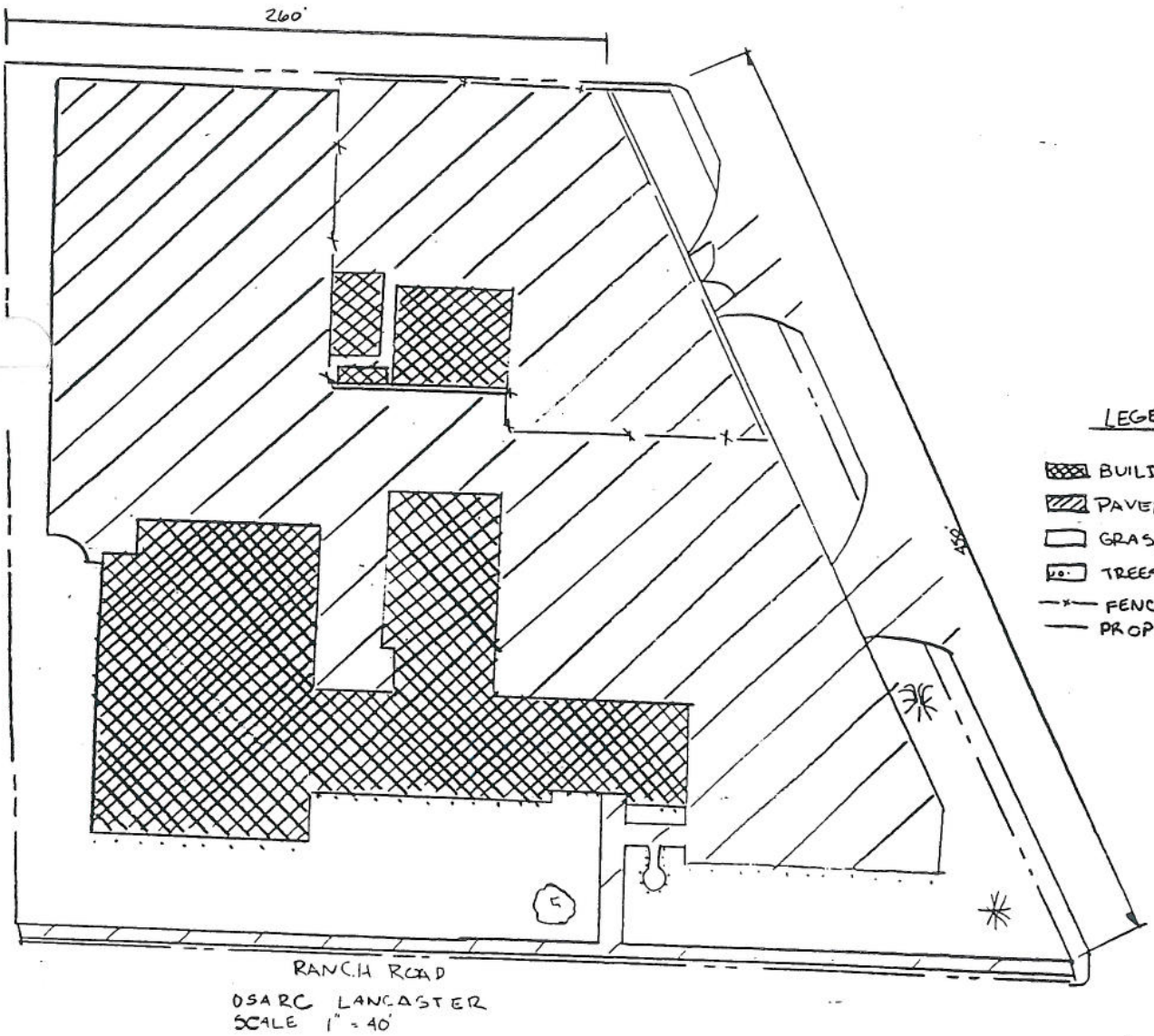
Baltimore, MD 21203-1715

Horsham USARC

Figure #14

September 1994





LEGEND

- BUILDING
- PAVEMENT
- GRASS
- TREES, BUSHES
- FENCE LINE
- PROPERTY LINE

US Army Corps of Engineers
Baltimore District
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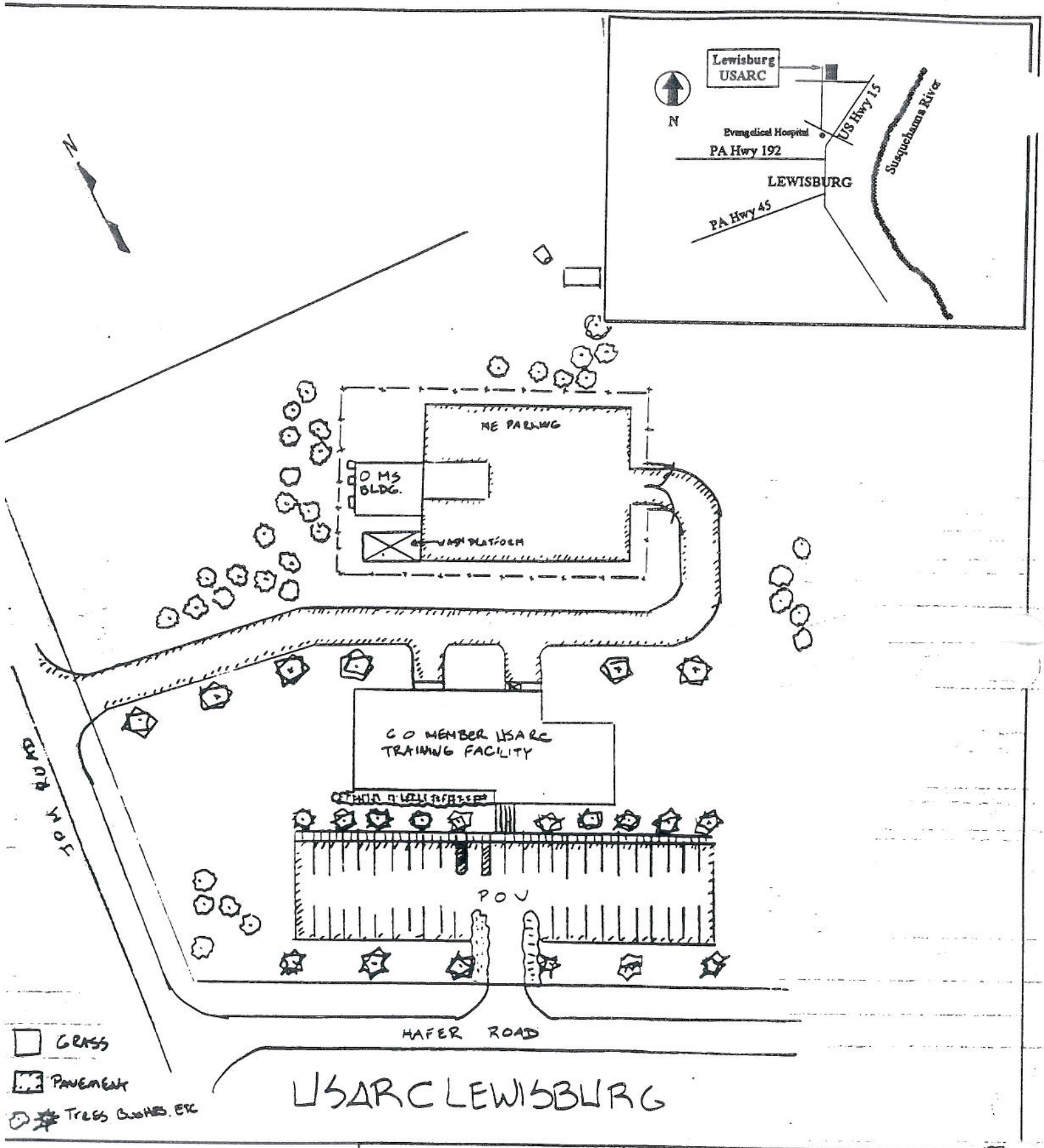
Lancaster USARC

Figure #15

September 1994



US Army Corps of Engineers
Baltimore District
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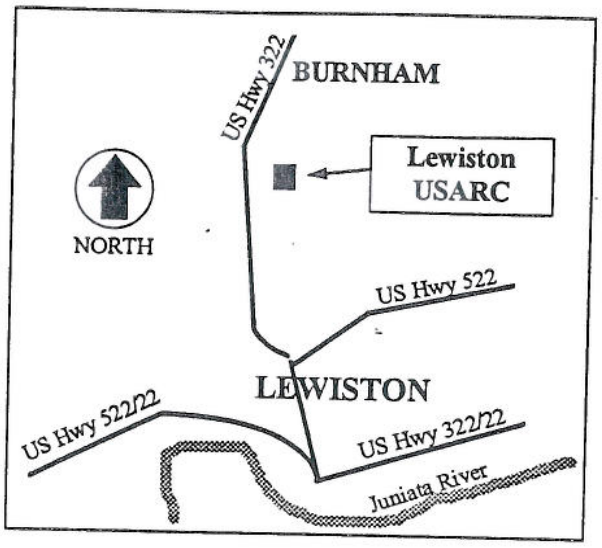
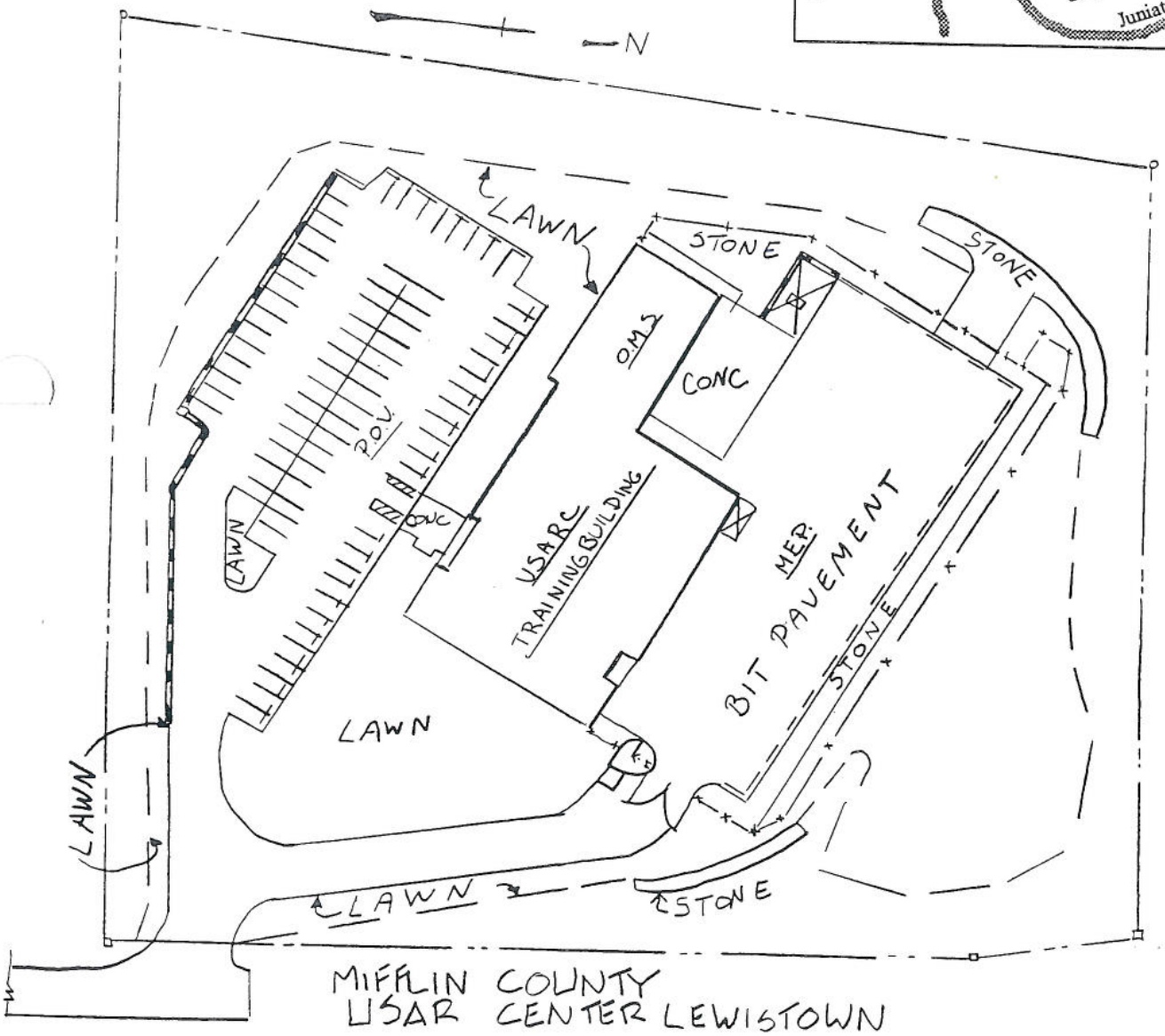
Baltimore, MD 21203-1715

Lewisburg USARC

Figure #16

September 1994





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Baltimore District
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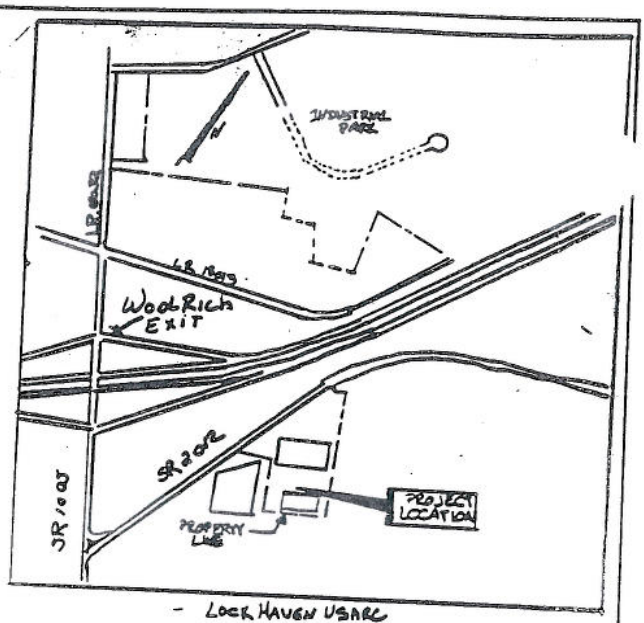
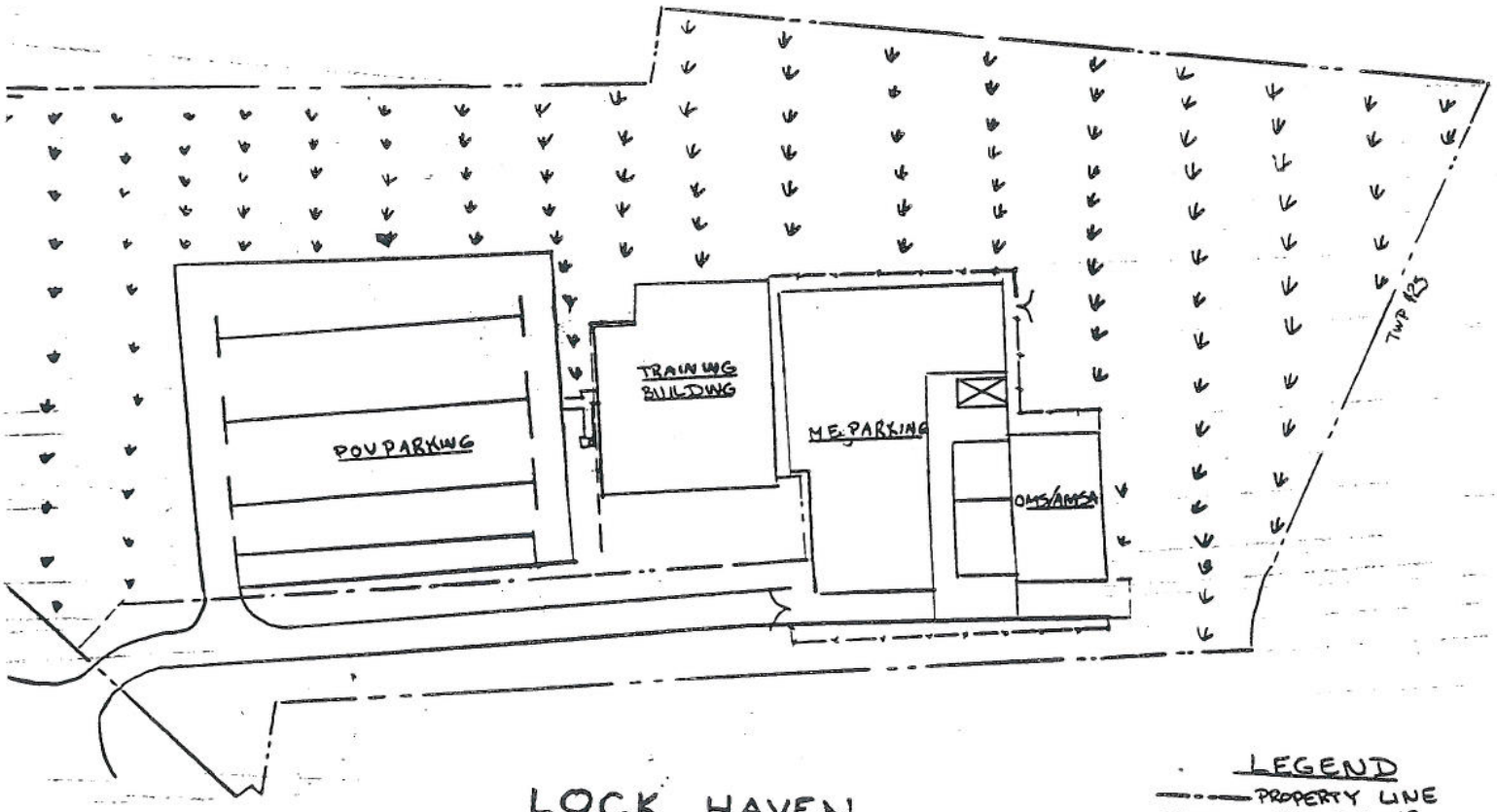
Lewistown USARC

Figure #17

September 1994



- LOCK HAVEN USARC
LOCATION MAP



LOCK HAVEN

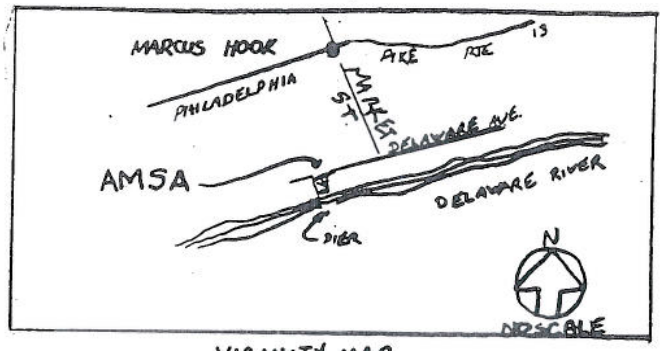
LEGEND
PROPERTY LINE
FENCE LINE
GRASS

US Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

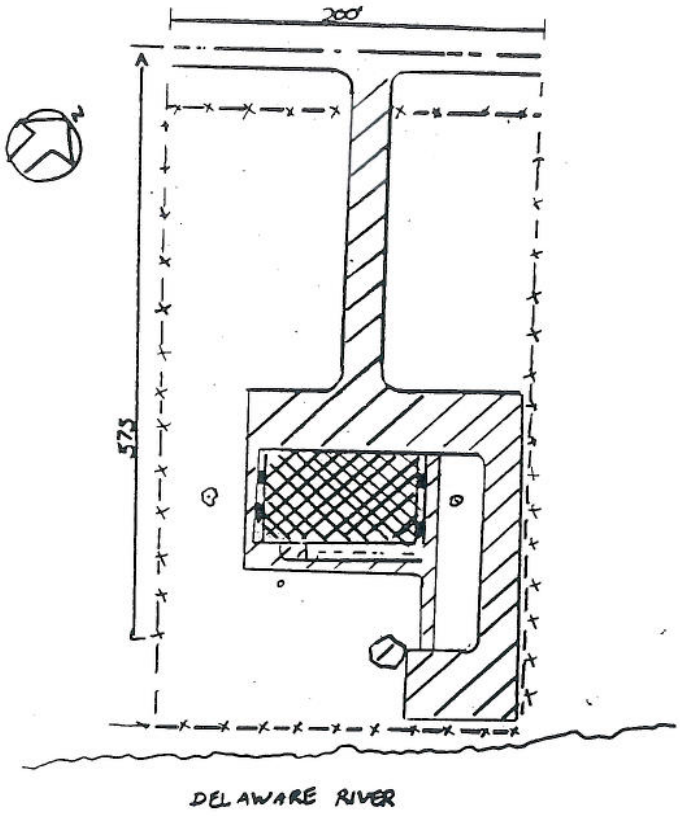
Lock Haven USARC and AMSA

Figure #18

September 1994



VICINITY MAP



AMSA MARCUS HOOK

BOY 385

MARKET ST & DELAWARE AVE

MARCUS HOOK, PA

50 35 0 30 60

LEGEND

BUILDING

PAVEMENT

GRASS

FENCE LINE

PROPERTY LINE

TREES, SHRUB

US Army Corps of Engineers
Baltimore District
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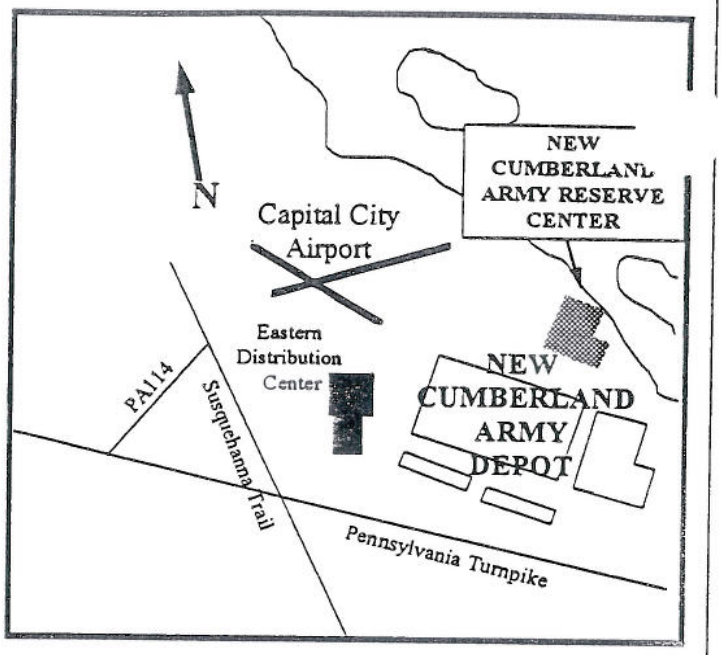
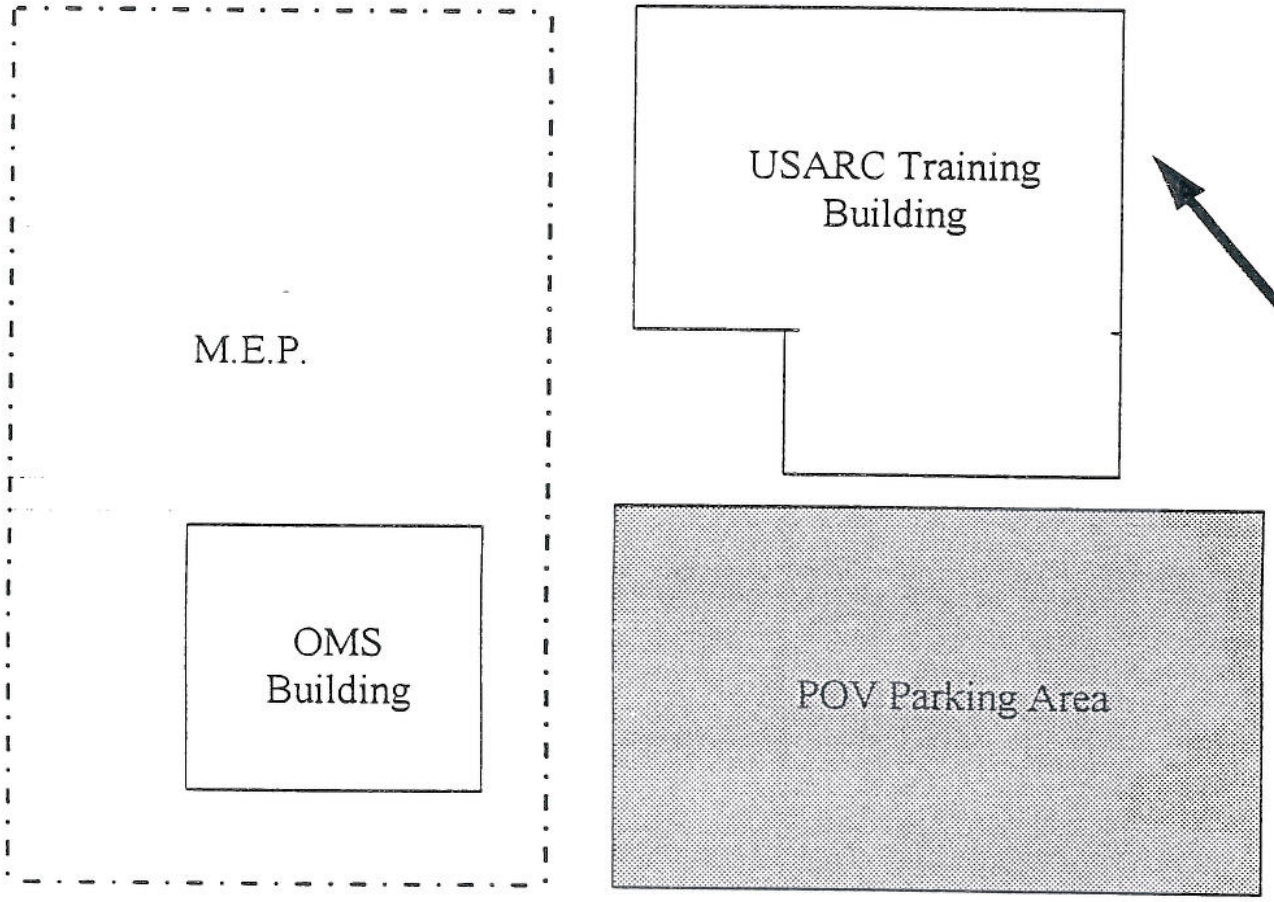
Baltimore, MD 21203-1715

Marcus Hook AMSA

Figure #19

September 1994





US Army Corps of Engineers
Baltimore District
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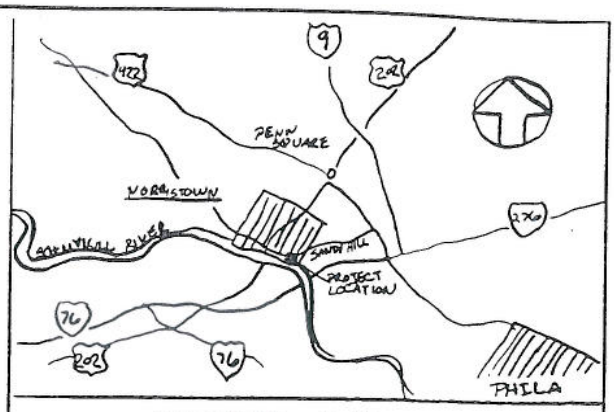
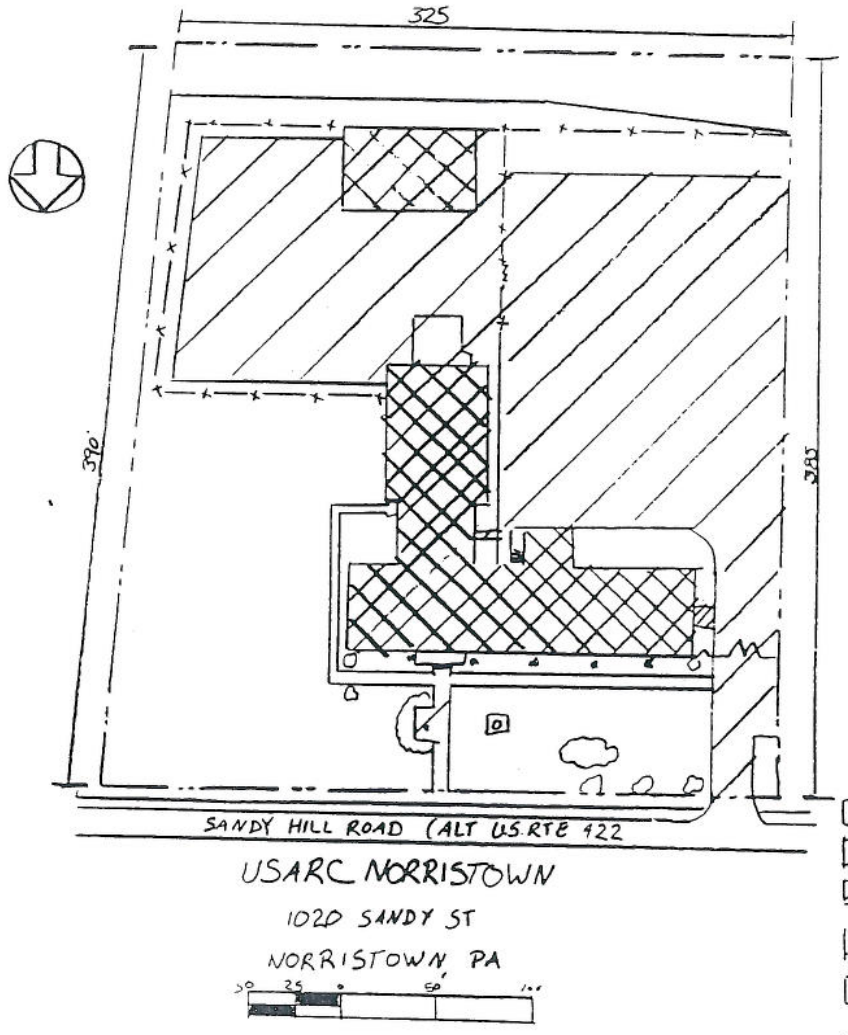
New Cumberland USARC

Figure #20

September 1994



VICINITY MAP
USARC NORRISTOWN



USARC NORRISTOWN
1020 SANDY ST
NORRISTOWN, PA

LEGEND
- EVERGREENS
- DECIDUOUS TREES OR SHRUBS
- BUILDING
- PAVEMENT
- GRASS
- FENCE LINE
- PROPERTY LINE

US Army Corps of Engineers
Baltimore District
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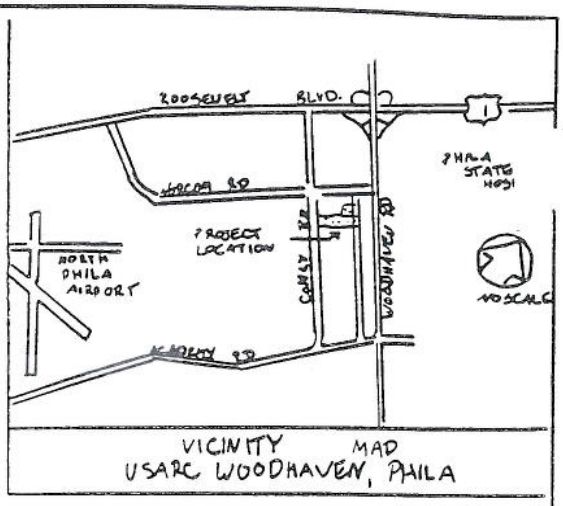
Baltimore, MD 21203-1715

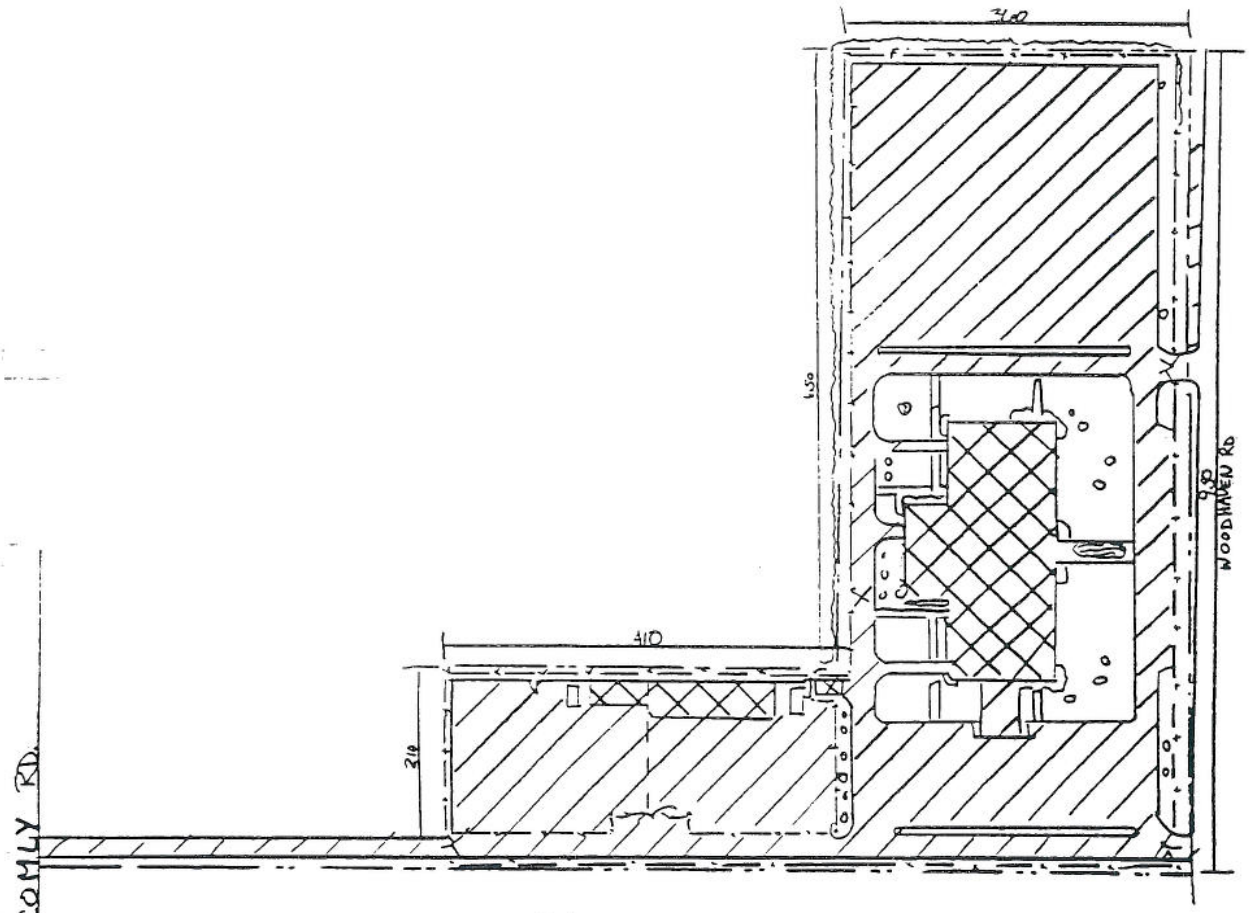
Norristown USARC

Figure #21

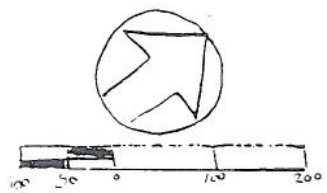
September 1994



VICINITY MAP
USARC WOODHAVEN, PHILA



USARC WOODHAVEN, PHILA



LEGEND

- DECIDUOUS SHRUBS OR TREES
- BUILDING
- PAVEMENT
- EVERGREEN SHRUBS
- FENCE LINE
- PROPERTY LINE

US Army Corps of Engineers
Baltimore District
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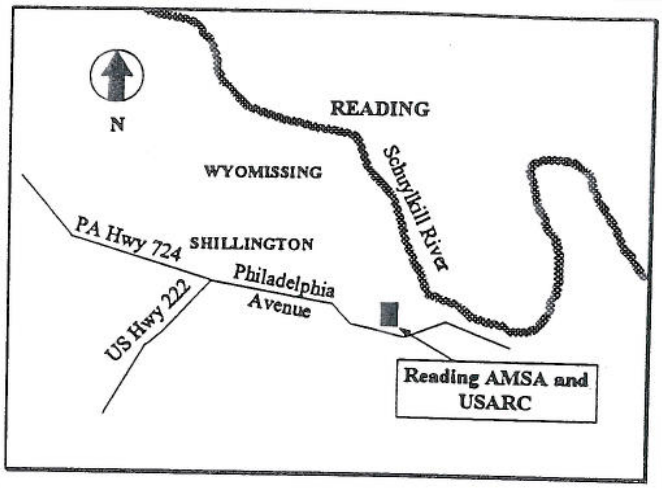
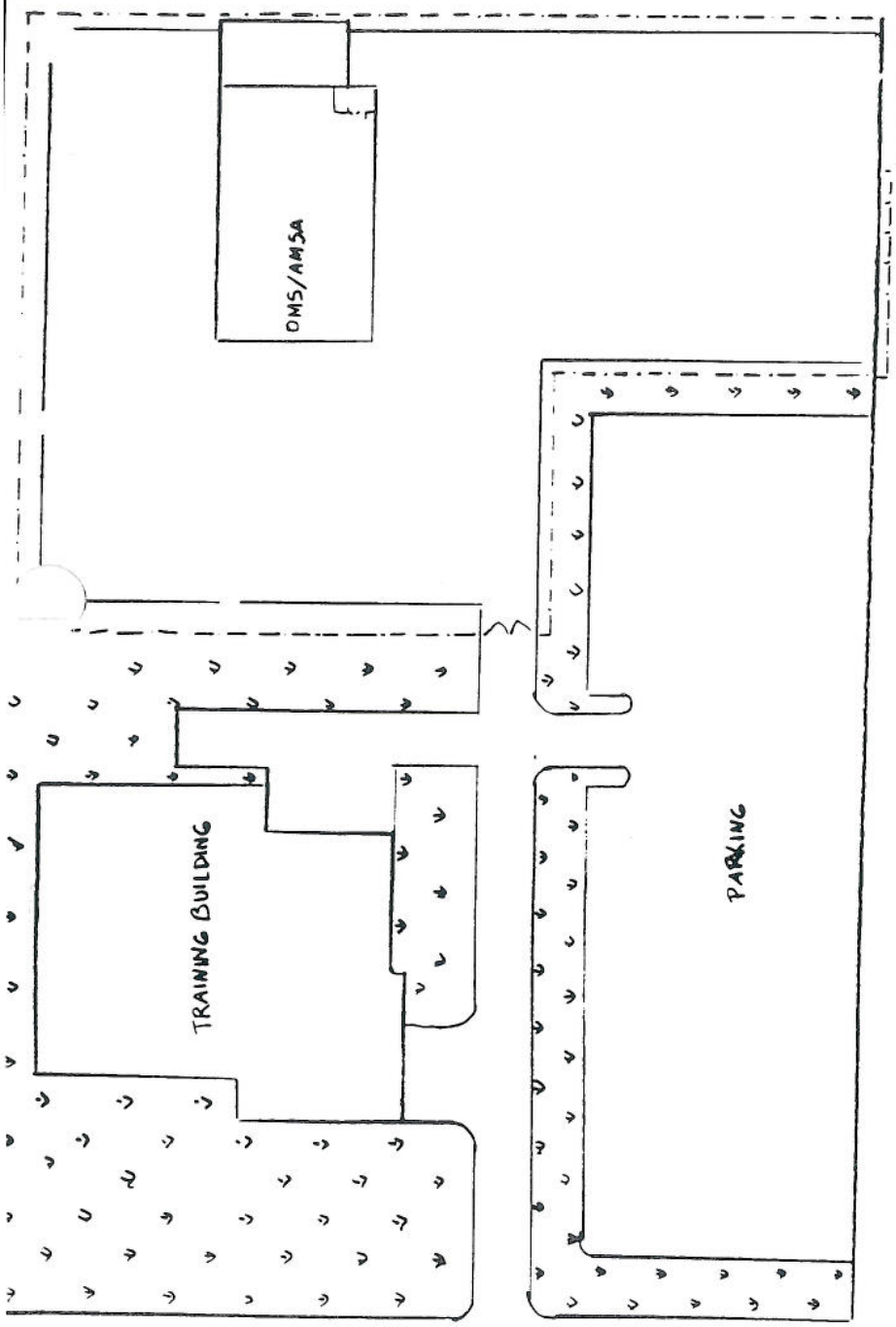
Philadelphia USARC

Figure #22

September 1994





N

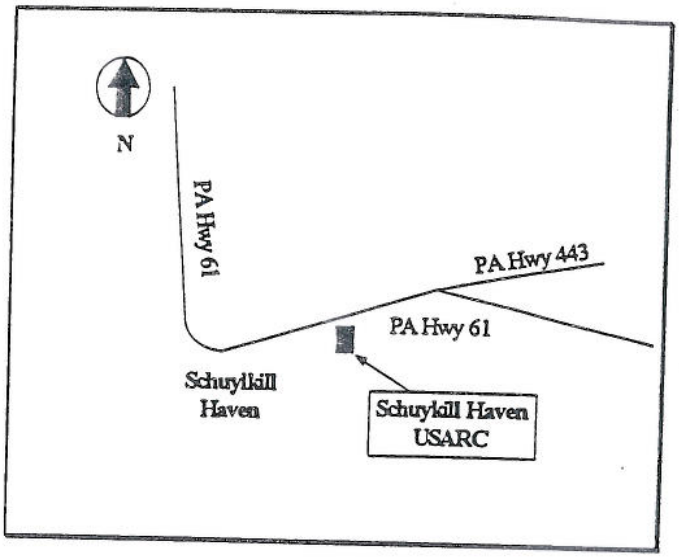
USARC Reading and AMSA

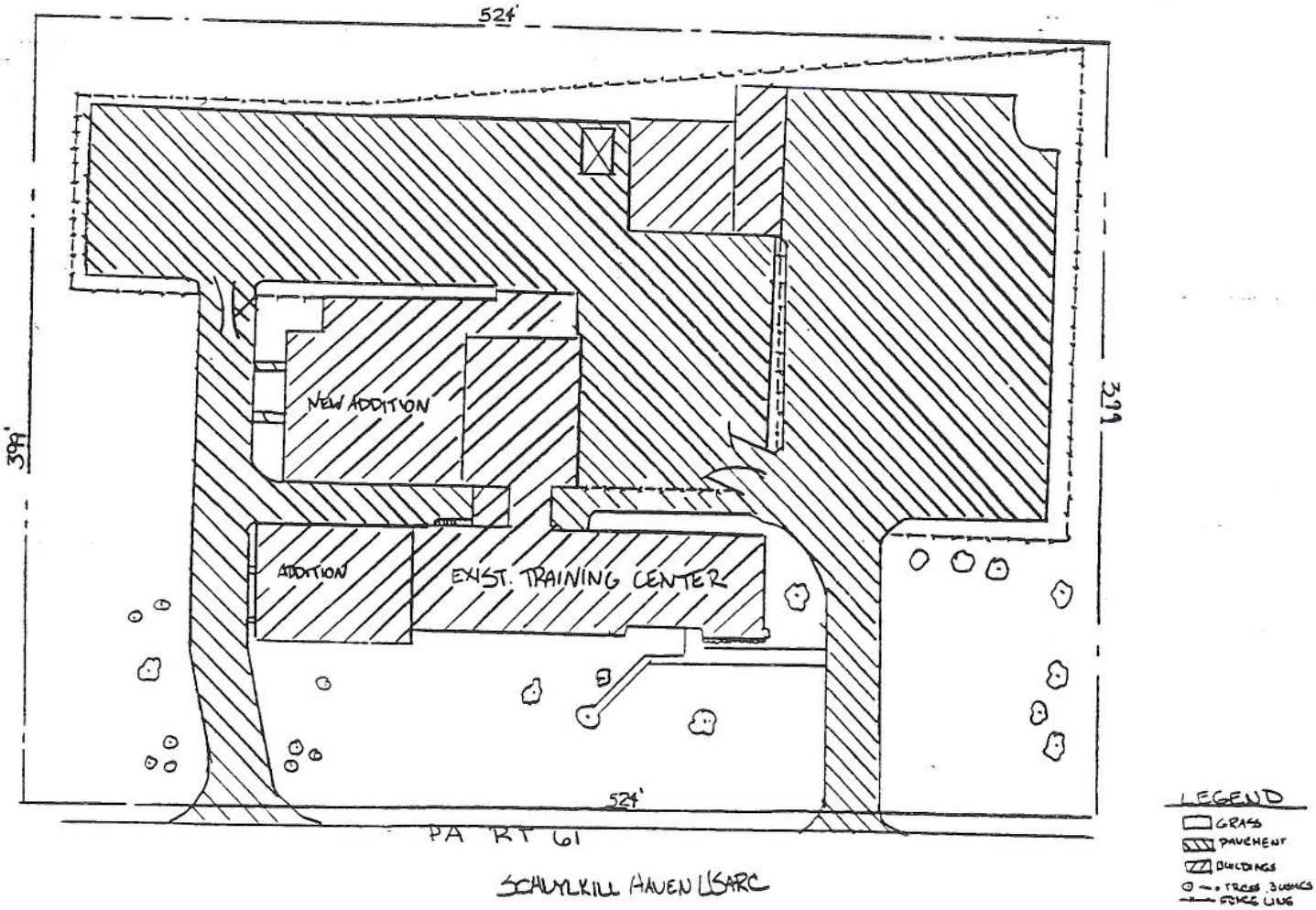
US Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Reading USARC and AMSA

Figure #23

September 1994





US Army Corps of Engineers
Baltimore District
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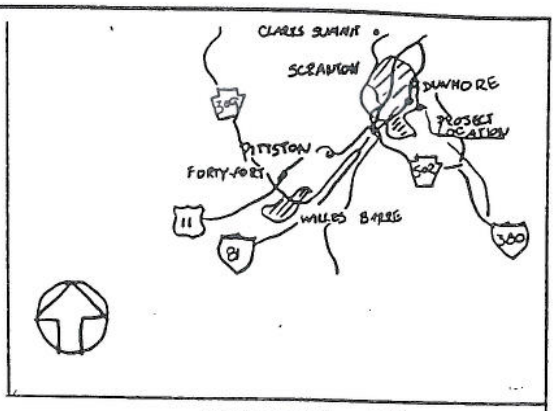
Baltimore, MD 21203-1715

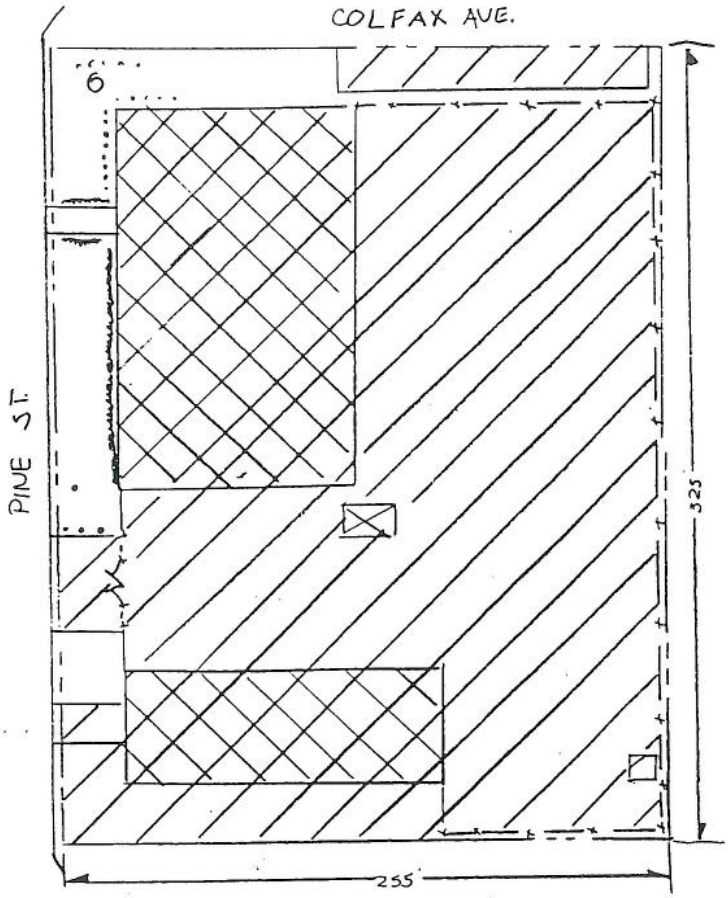
Schuylkill Haven USARC

Figure #24

September 1994



VICINITY MAP
USARC SCRANTON PA.



USARC SCRANTON
PINE ST & COLFAX AVE
SCRANTON, PA

50 25 0 50 100

LEGEND

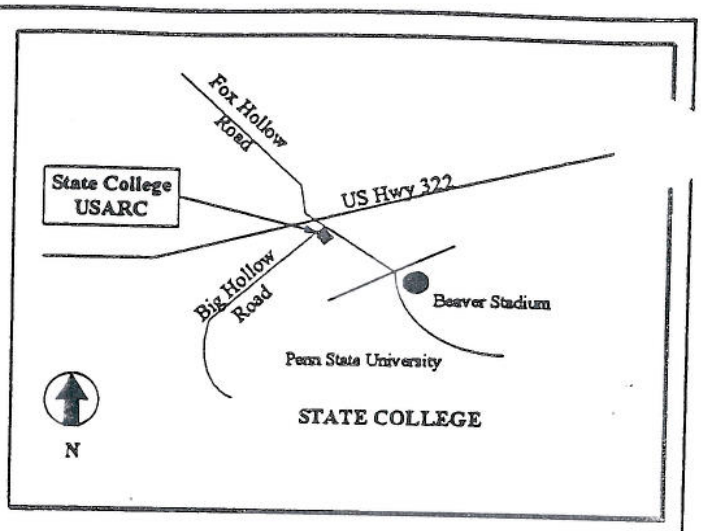
- BUILDING
- PAVEMENT
- GRASS
- FENCING
- PROPERTY LINE
- HEDGES SHRUBS BUSHES

US Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Scranton USARC

Figure #25

September 1994



370'

500

420'

BIG HOLLOW ROAD

380'

FOX HOLLOW RD

BUILDING
PAVEMENT
GRASS

N

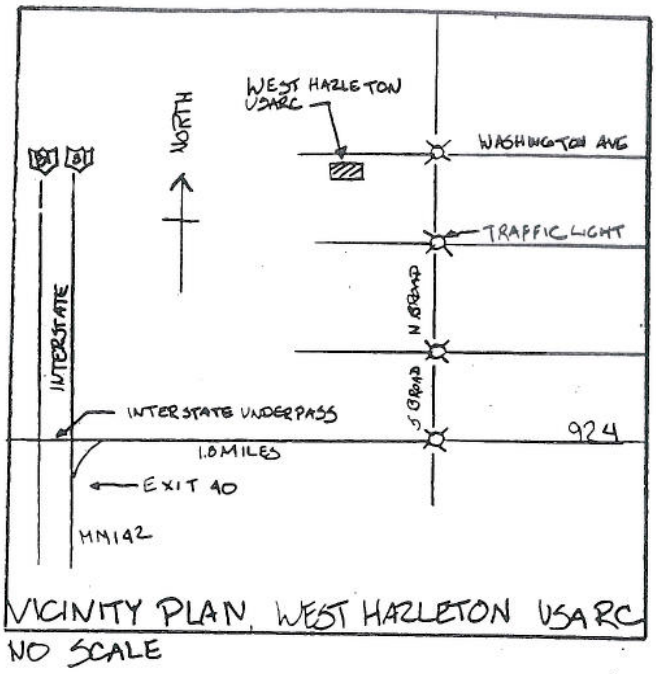
USARC State College

US Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

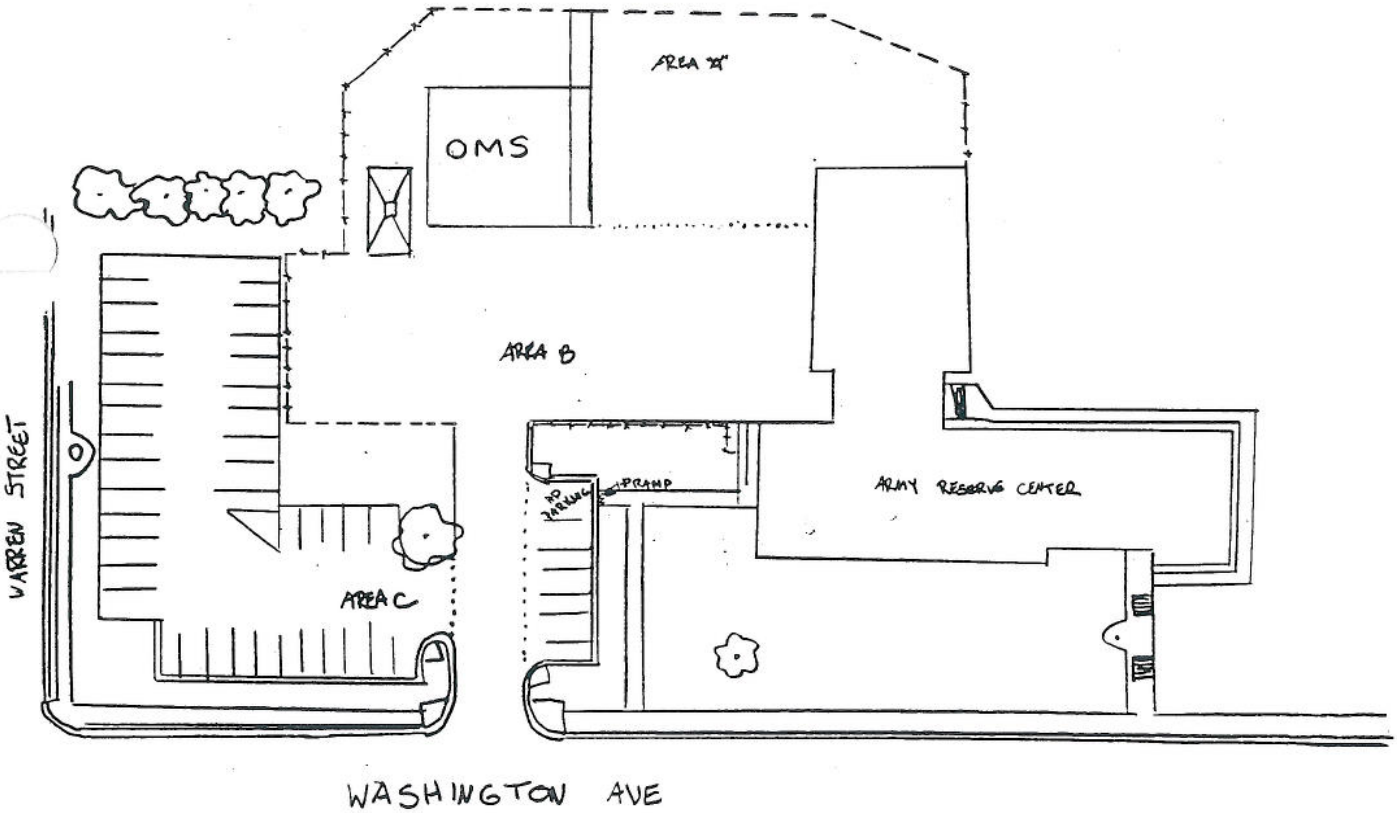
State College USARC

Figure #26

September 1994



VICINITY PLAN, WEST HAZLETON USARC
NO SCALE



WEST HAZLETON USARC

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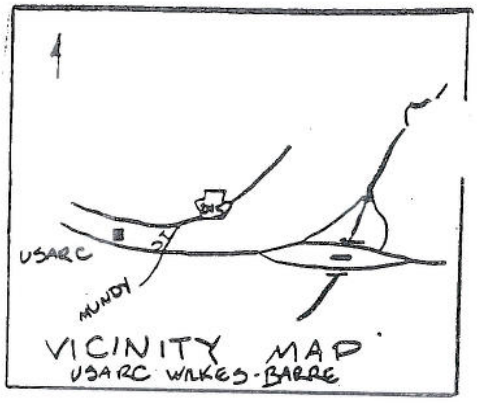
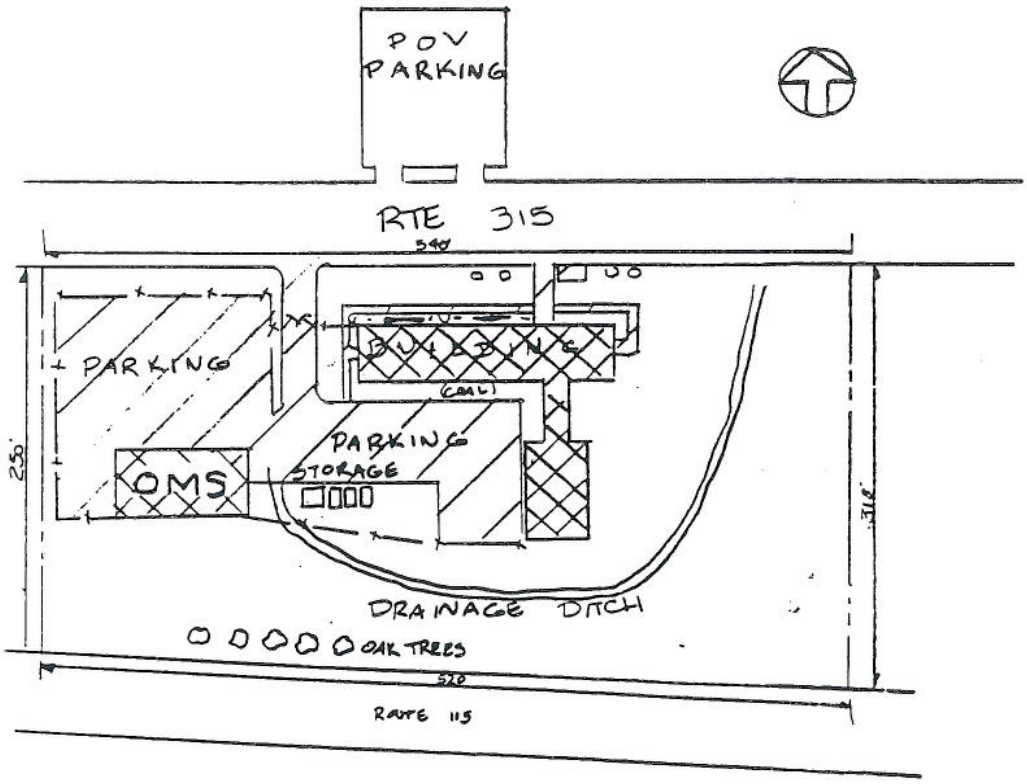
West Hazelton USARC

Figure #27

September 1994





LEGEND

PAVED
BUILDING
GRASS
FENCE
PROPERTY
HEDGES; BUSHS; SHRUB

USARC WILKES-BARRE
RTE 315 WILKES-BARRE, PA

NOT TO SCALE

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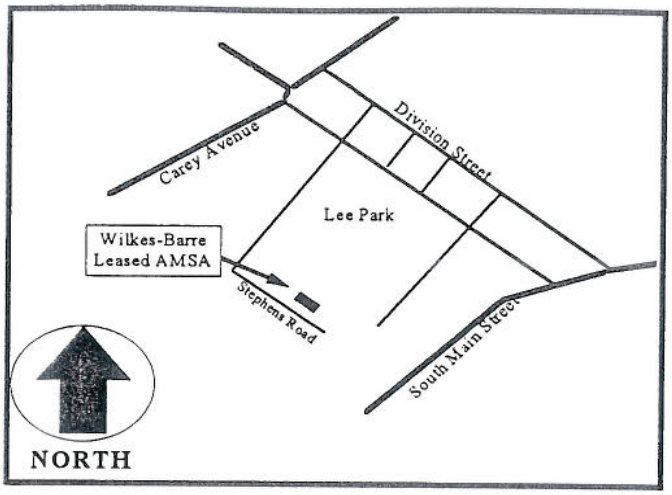
Wilkes-Barre USARC

Figure #28

September 1994



N

Fenced, Gravel MEP Area

Separate Non-Military Activity

AMSA

Paved POV Parking Lot

Stephens Road

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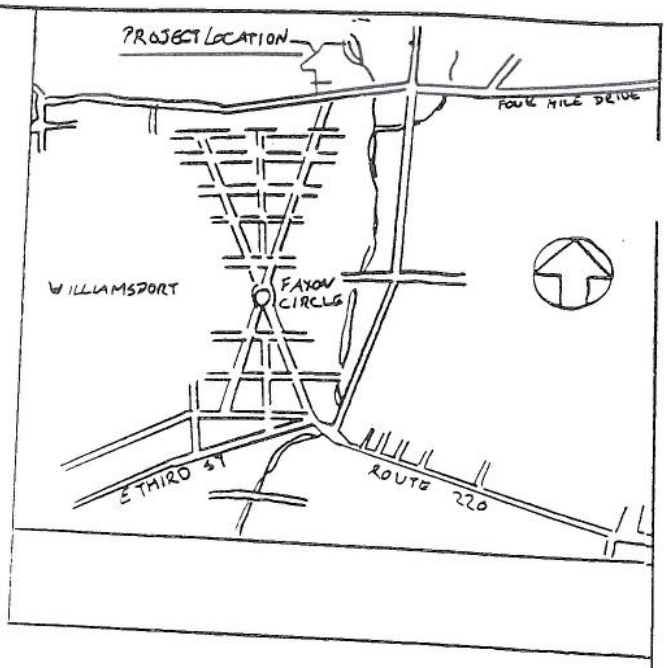
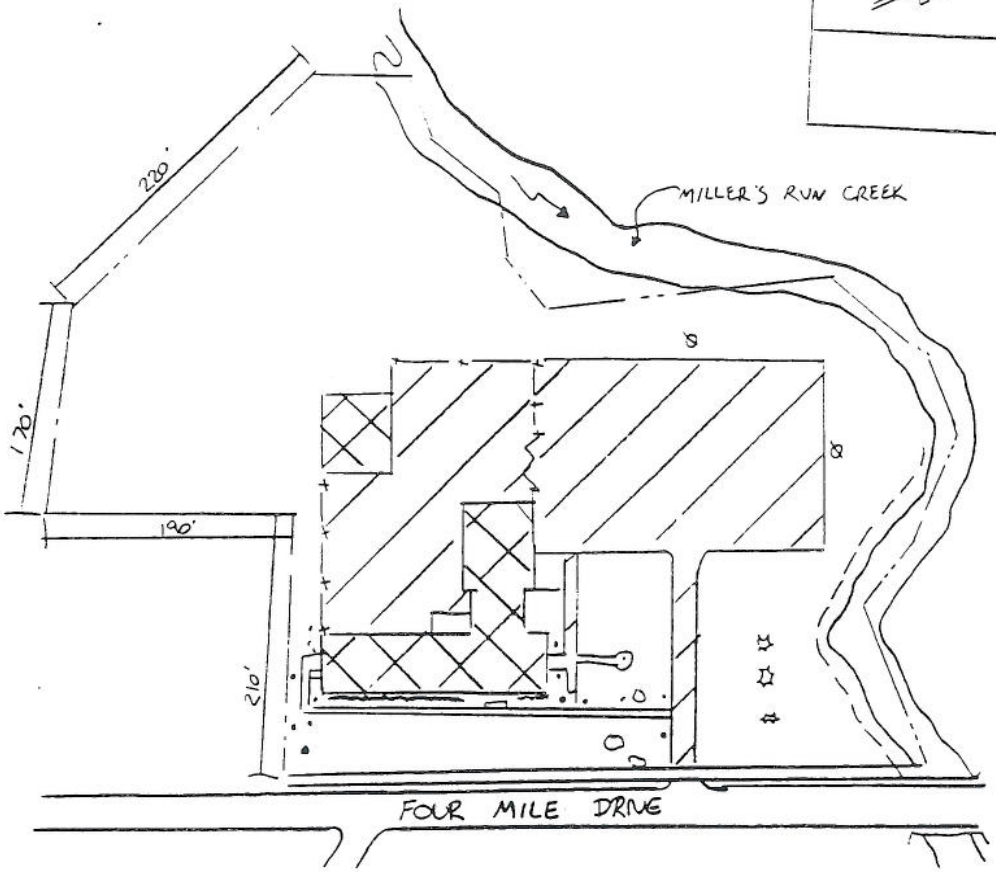
Wilkes-Barre Leased AMSA

Figure #29

September 1994





USARC WILLIAMSPORT

1605 FOUR MILE DR

WILLIAMSPORT, PA

100 50 0 100 200

LEGEND

- HEDGES, SHRUBS, BUSHES, TREES
- BUILDING
- PAVEMENT
- GRASS
- FENCE LINE
- PROPERTY LINE
- LIGHT POLE

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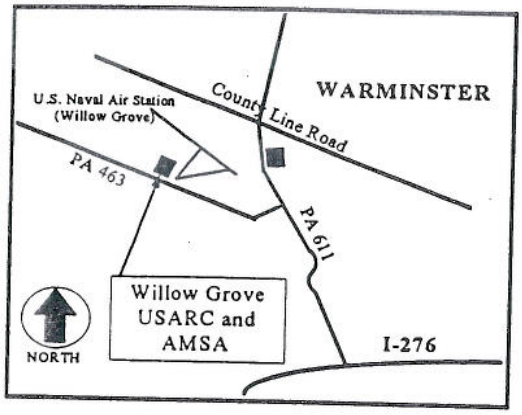
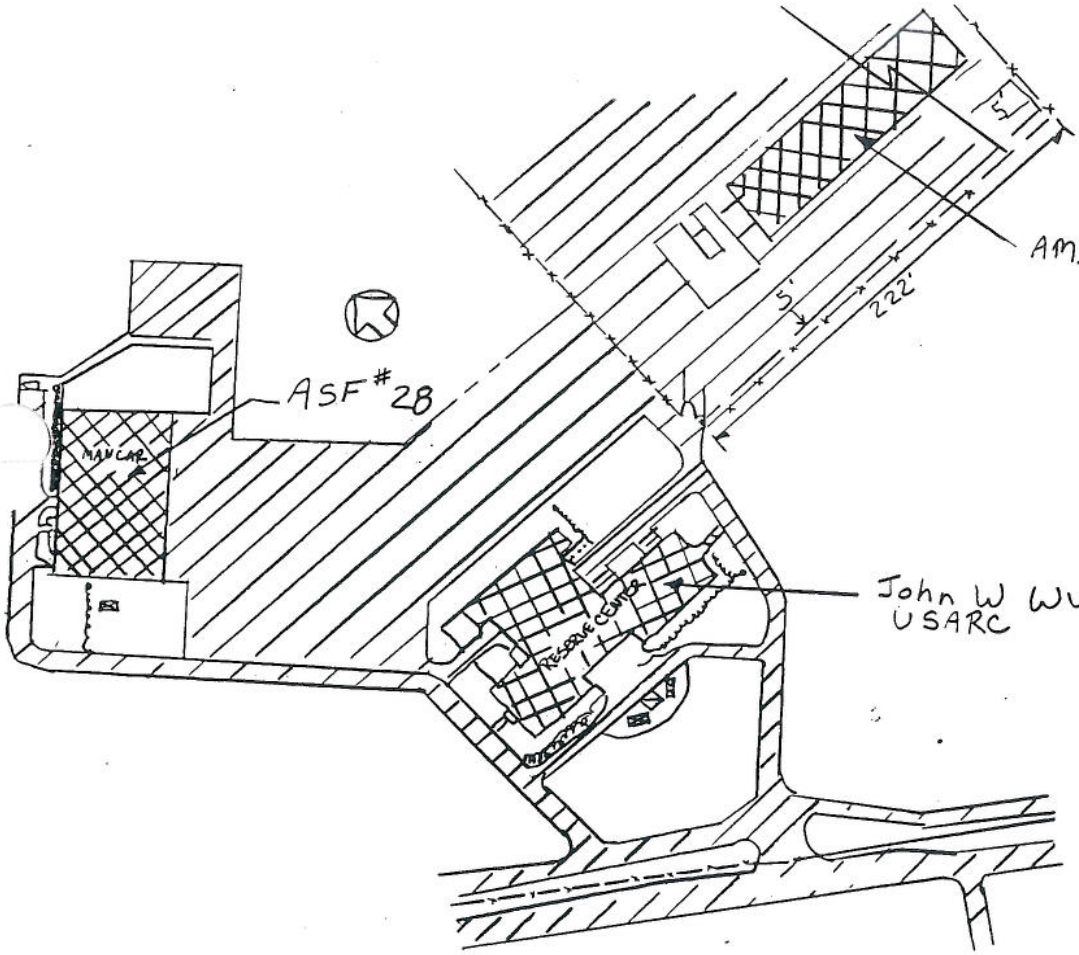
Williamsport USARC

Figure #30

September 1994





NOTE ENTRANCE TO RESERVE CENTER IS LOCATED ON RTE 611

WILLOW GROVE

50 25 0 50 100

LEGEND

- BUILDING
- PAVEMENT
- BUSHES
- GRASS
- SECURITY FENCE

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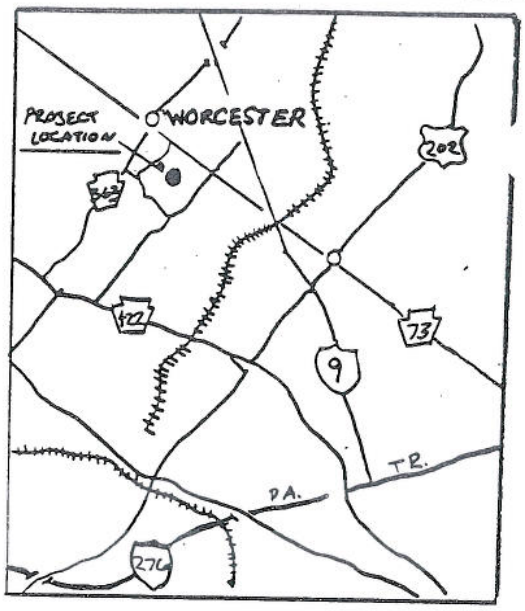
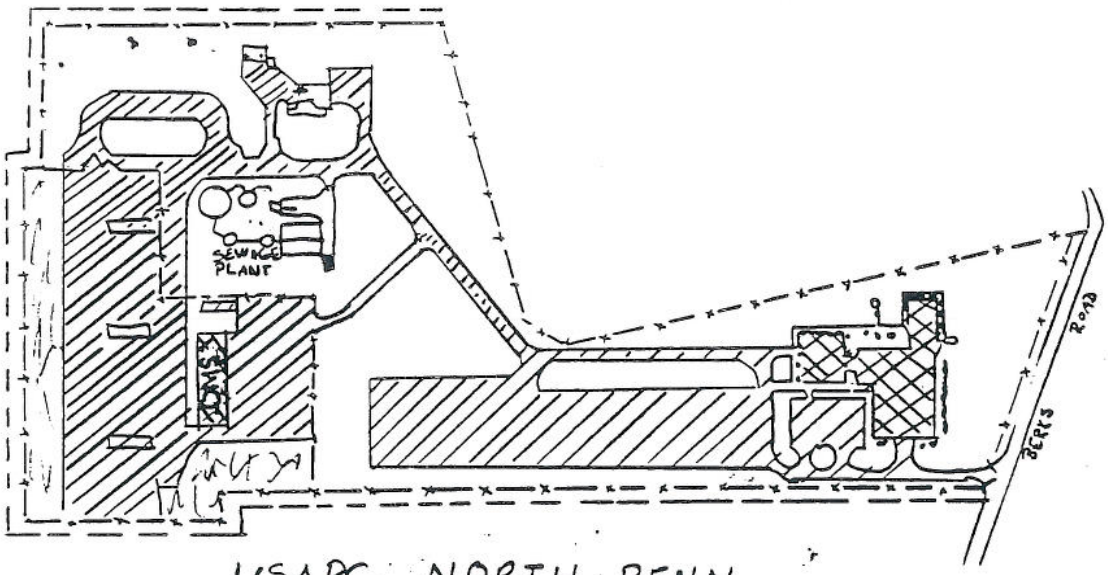
Willow Grove USARC and AMSA

Figure #31

September 1994





USARC NORTH PENN

POTSHOP & BERKS RD

WORCESTER, PA

200 100 0 200 400

LEGEND

BUILDINGS

PAVEMENT

GRASS

FENCE LINE

HEDGES, SHRUBS, BUSHES

SEEDED AREA

AREA OUTSIDE FENCE

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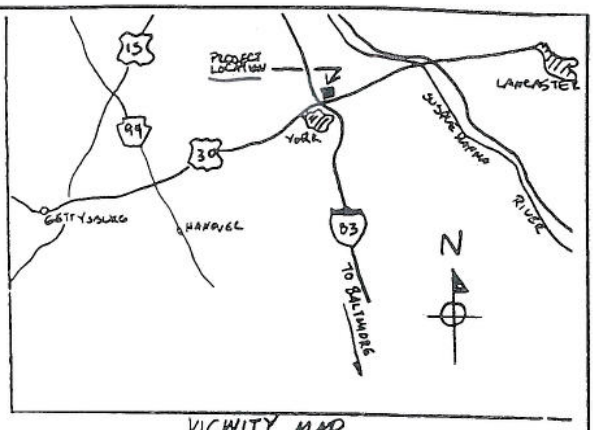
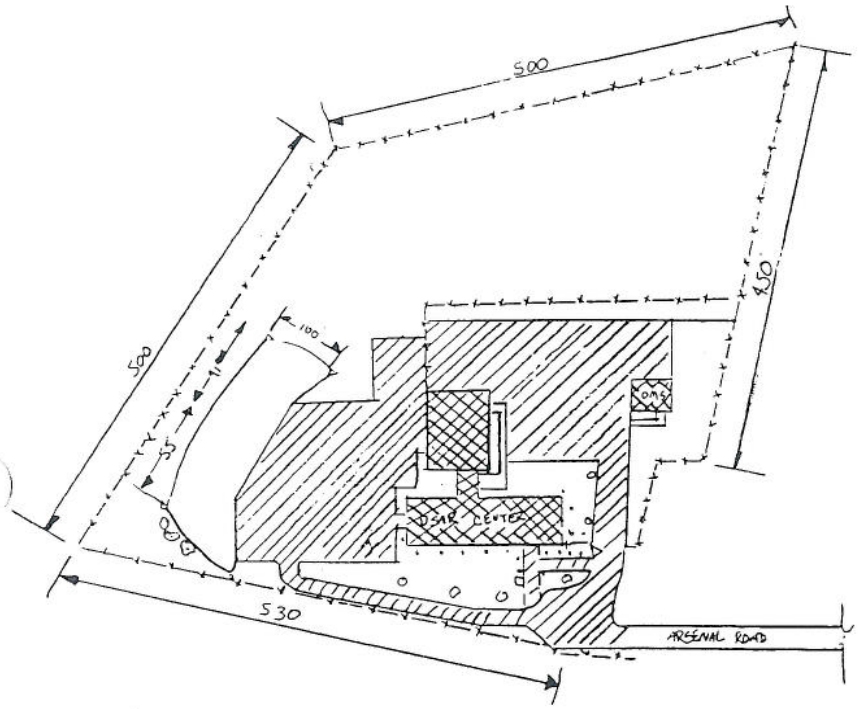
Worcester USARC

Figure #32

September 1994



VICINITY MAP
USARC YORK, PA



USARC YORK, PA
607 ARSENAL ROAD
YORK, PA 17402

LEGEND

- SHRUBS, BUSHES, HEDGES, TREES
- BUILDING
- PAVEMENT
- GRASS
- FENCE LINE
- PROPERTY LINE
- △ WOODEN STAKES

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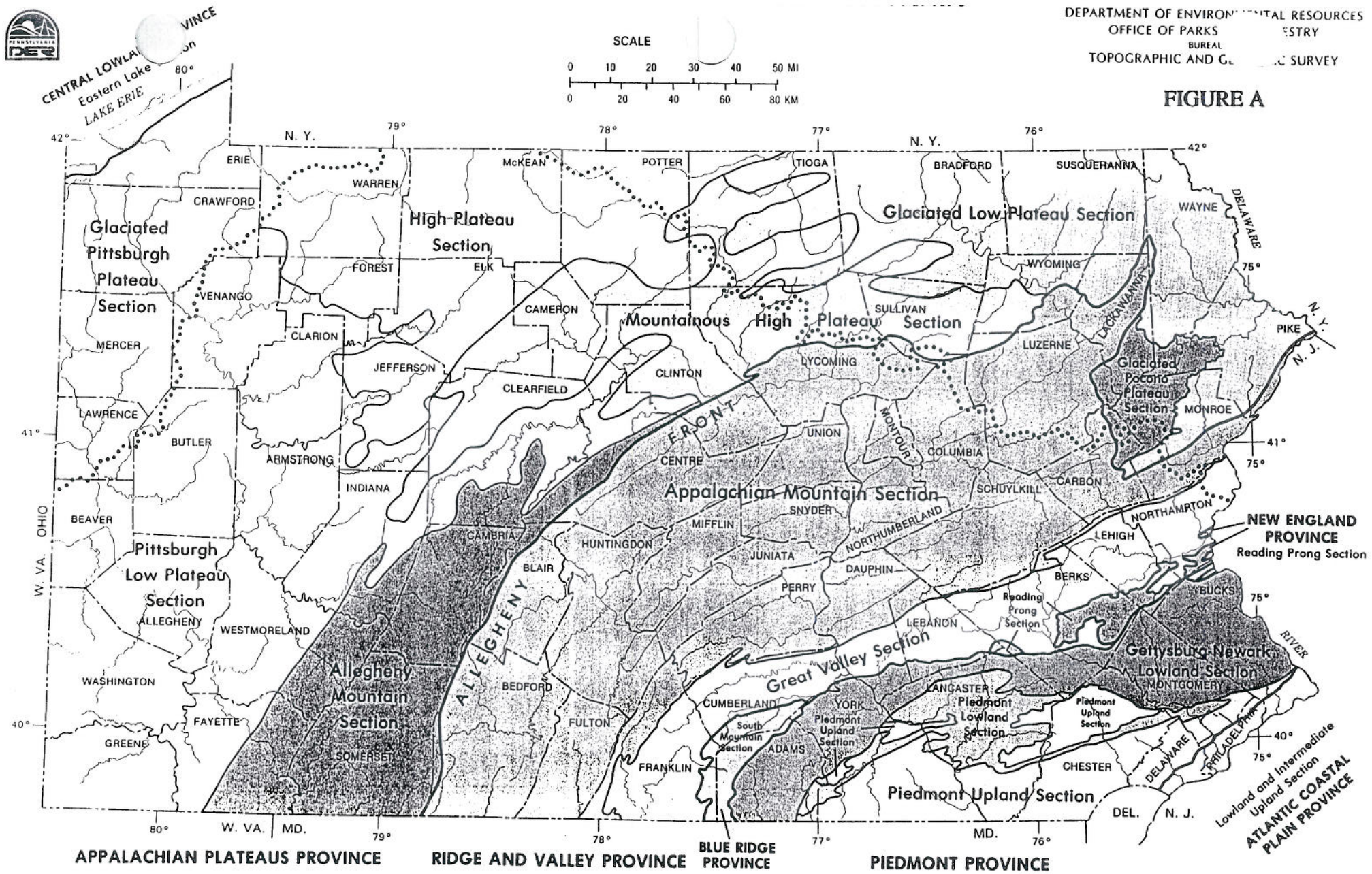
York USARC

Figure #33

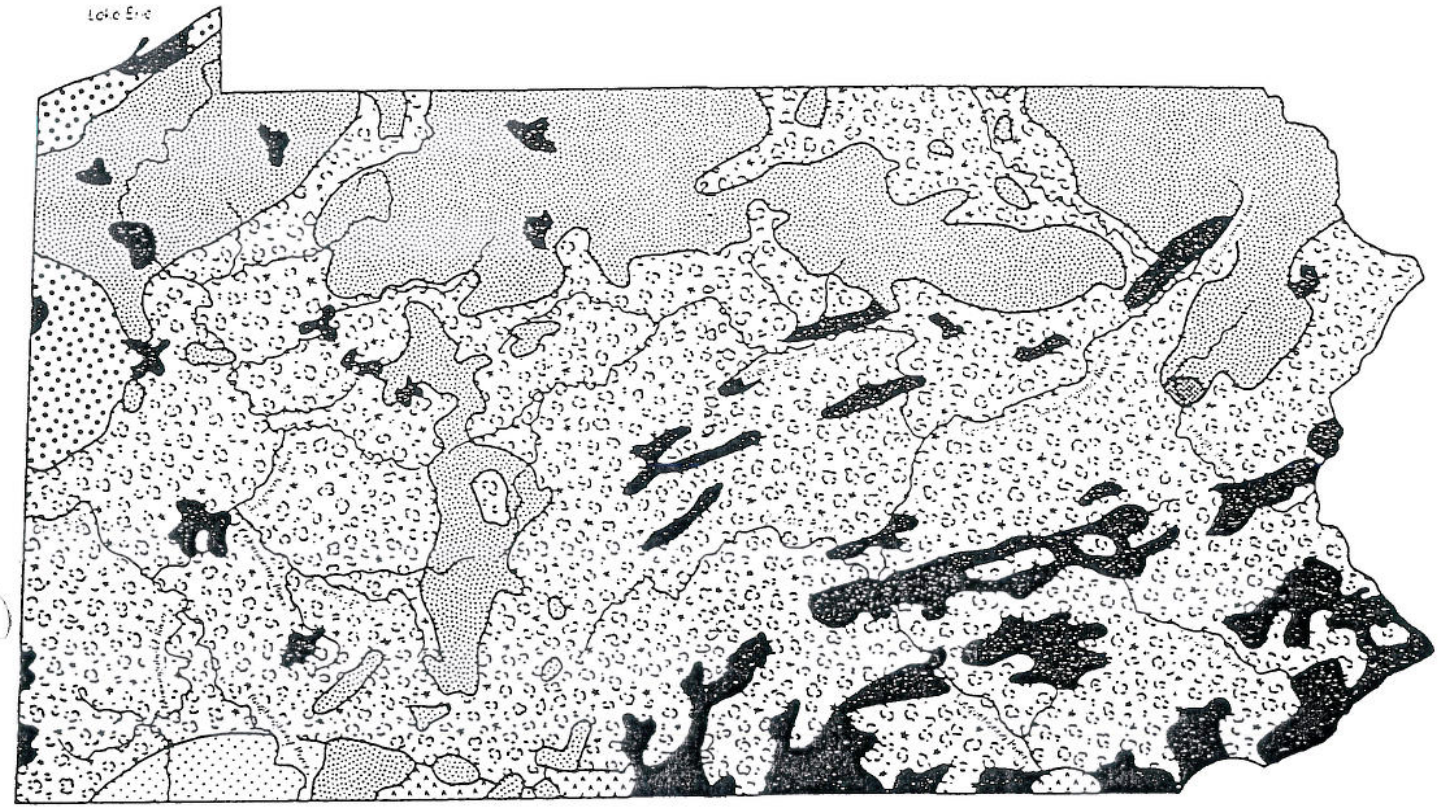
September 1994

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
APPENDIX B
FIGURES A THROUGH C

TABLE OF CONTENTS



ompiled by Thomas M. Berg, John H. Barnes, W. D. Sevon, Viktoras W. Skema, J. Peter Wilshusen, and Dawna S. Yannacci



Appalachian Oak Forest
Northern Hardwoods Forest
Beech-Maple Forest
Mixed Mesophytic Forest
Oak-Hickory-Pine Forest
Northern Hardwoods-Spruce Forest
Nonforest

Note: This map indicates potential natural vegetation, that is, not only plants that exist in Pennsylvania today but also those that would occur today if humans were not present and if plant succession were condensed into a single moment. It is as precise as possible in depicting the plant communities in Pennsylvania; unfortunately it is not possible to illustrate the great local variations caused by differences in topography and climate and by human activities.

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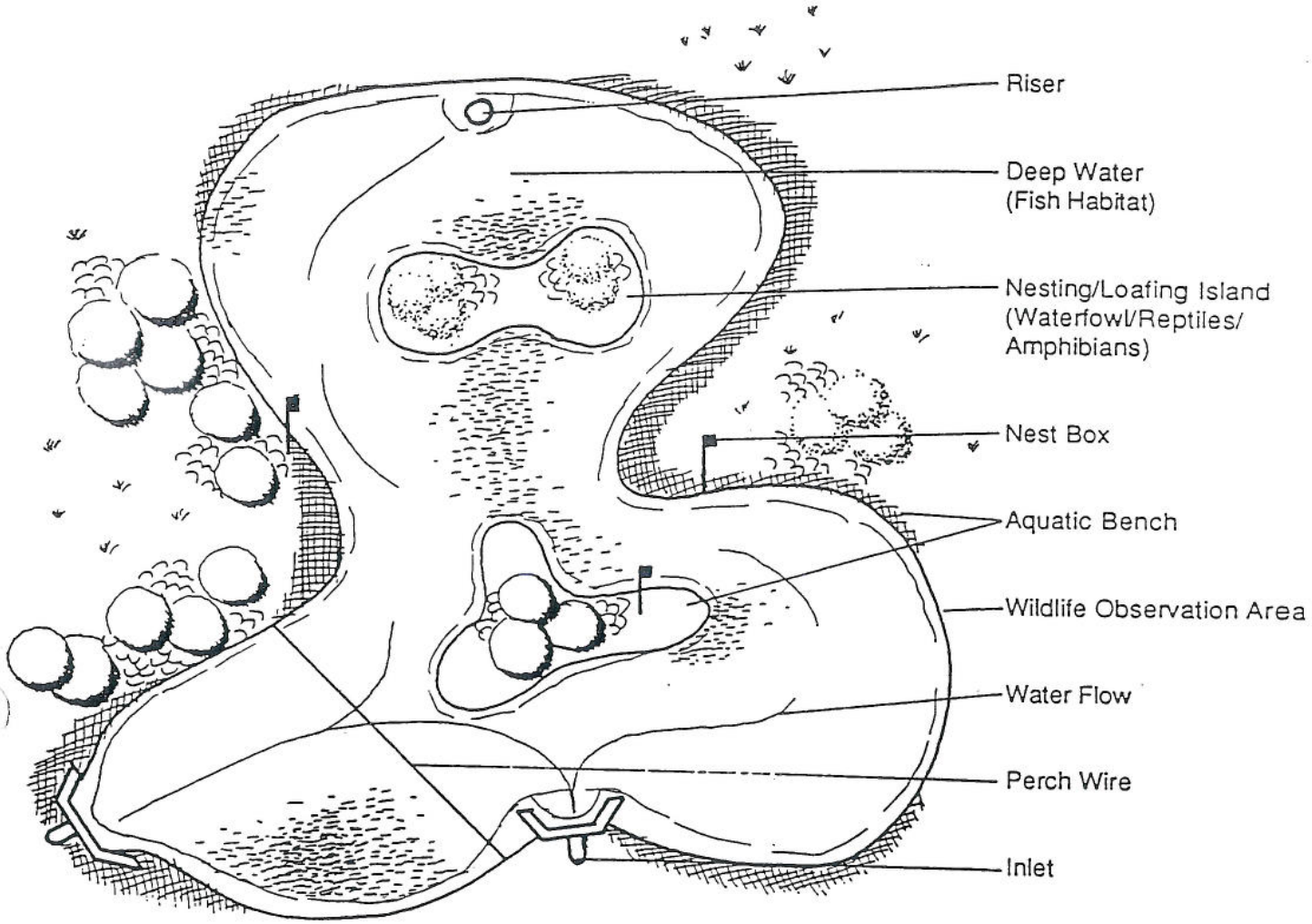
Figure B

Major Forest Types of Pennsylvania
Adapted from PADER



Adapted from: Daft-McCune-Walker
Natural Design and Development

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Baltimore, MD 21203-1715

Figure C

Stormwater Management Pond
Incorporating Wildlife Habitat

PHYSIOGRAPHIC PROVINCES OF PENNSYLVANIA

PHYSIOGRAPHIC PROVINCE	PHYSIOGRAPHIC SECTION	DOMINANT TOPOGRAPHIC FORM	LOCAL RELIEF[1]	UNDERLYING ROCK TYPE	GEOLOGIC STRUCTURE	APPROXIMATE ELEVATION Min.	APPROXIMATE ELEVATION Max.	DRAINAGE PATTERN	BOUNDARIES	ORIGIN
ATLANTIC COASTAL PLAIN	Lowland and Intermediate Upland	Flat upper terrace surface cut by narrow, steep-sided valleys to open, shallow valleys; includes Delaware River floodplain.	Very low.	Unconsolidated to poorly consolidated sand and gravel, underlain by schist, gneiss, and other metamorphic rocks.	Unconsolidated deposits underlain by very complex, faulted and folded metamorphic rocks.	0	200	Dendritic.	*North:* Maximum limit of continuous deposits of Pensauken and Bridgeton Formations, undivided.	Fluvial erosion and deposition; Delaware River floodplain includes glacial meltwater deposits.
PIEDMONT	Piedmont Upland	Broad, gently rolling hills and valleys.	Low to moderate.	Schist, gneiss, quartzite, and other metamorphic rocks; ultramafic rocks, granite, and pegmatite are also present; much of terrain is weathered to saprolite.	Extremely complex; faulted and folded.	100	1,220	Dendritic.	*East:* Coastal Plain deposits. *North:* Lower Paleozoic carbonate rocks and Mesozoic red beds.	Fluvial erosion of deeply weathered metamorphic rocks; some periglacial mass wasting.
	Piedmont Lowland	Broad, moderately dissected valleys separated by broad, low hills; karstic terrain is common.	Low.	Dominantly carbonate rocks (limestone, dolomite, marble); phyllitic shale and phyllite; some sandstone.	Very complexly folded and faulted.	170	630	Dendritic and karstic.	*South:* Metamorphic rocks of Piedmont Upland section. *North:* Mesozoic red beds.	Fluvial erosion of deeply weathered rocks; solution of carbonate rocks; some periglacial mass wasting.
	Gettysburg-Newark Lowland	Rolling lowlands; isolated hills and highlands.	Low to moderate.	Red and gray shale, siltstone, sandstone, and conglomerate; diabase.	Half-graben structure; low, monoclinal, dominantly northwest-dipping beds.	40	1,355	Dendritic.	Contacts with Paleozoic and Precambrian rocks of South Mountain, Great Valley, Reading Prong, and Piedmont.	Fluvial erosion of moderately resistant and nonresistant beds; minor periglacial mass wasting.
NEW ENGLAND	Reading Prong	Circular to linear, rounded hills or ridges, in some places isolated by limestone valleys.	Moderate.	Granitic gneiss, granodiorite, and quartzite.	Multiple nappes.	140	1,240	Dendritic.	*North:* Great Valley carbonate rocks. *South:* Mesozoic red beds.	Fluvial erosion of deeply weathered rocks; some periglacial mass wasting.
BLUE RIDGE	South Mountain	Pronounced ridges and deep valleys.	Moderate to high.	Metavolcanic rocks, quartzite, and some dolomite.	Major anticlinorium having many second- and third-order folds.	450	2,080	Dendritic.	*North and west:* Great Valley carbonate rocks. *East:* Mesozoic red beds and diabase.	Fluvial erosion of highly variable, metamorphosed extrusive rocks and quartzite; periglacial mass wasting and deposition.
RIDGE AND VALLEY	Great Valley	Very broad, moderately dissected valley having a gently undulating surface; karstic terrain in southern half.	Low to moderate.	Shale and sandstone on northwest side (includes slate belt at east end); limestone and dolomite on southeast side.	Thrust sheets, nappes, overturned folds, and steep faults; many third- and fourth-order folds.	140	1,100	Dendritic and karstic.	*North:* Foot of Blue Mountain. *South:* South Mountain, Mesozoic rocks, and Reading Prong rocks.	Fluvial erosion; some periglacial mass wasting; glacial erosion and deposition in north and east; solution of carbonate rocks.
	Appalachian Mountain	Long, narrow ridges and broad to narrow valleys; some karstic terrain.	Moderate to very high.	Wide variety of sedimentary rocks, including sandstone, siltstone, shale, conglomerate, limestone, dolomite, and others (anthracite in east).	Open and closed plunging folds having narrow hinges and planar limbs; thrust, reverse, and strike-slip faults.	300	3,135	Trellis, angulate, and some karstic.	*Southeast:* Foot of Blue Mountain. *North and west:* Crest of Allegheny Front. *East:* Delaware River escarpment. Arbitrary from Delaware River escarpment to Allegheny Front.	Fluvial erosion; periglacial mass wasting; glacial erosion and deposition in north and east; solution of carbonate rocks.
APPALACHIAN PLATEAUS	Glaciated Pocono Plateau	Broad, undulatory surface having dissected margins.	Low to moderate.	Sandstone, siltstone, and shale; some conglomerate.	Low, north-dipping beds; some small folds.	1,200	2,320	Deranged.	*South and east:* Pocono escarpment. *North:* Maximum slope change. *West:* Arbitrary.	Fluvial and glacial erosion; some glacial deposition.
	Glaciated Low Plateau	Rounded hills and valleys; some buried valleys.	Low to moderate.	Sandstone, siltstone, and shale.	Low-amplitude folds.	440	2,690	Dendritic.	*West and southeast:* Mainly escarpments at adjacent uplands. Arbitrary elsewhere.	Fluvial and glacial erosion; glacial deposition.
	Mountainous High Plateau	Broad, rounded to flat uplands separated by very deep, angular valleys, which follow structural axes to varying degrees.	Moderate to very high.	Sandstone, siltstone, shale, and conglomerate; some coal.	Moderate-amplitude, open folds; a few strike-slip faults near Allegheny Front.	570	2,590	Angulate and dendritic.	*Southeast:* Crest of Allegheny Front. *Northwest:* Arbitrary boundary where pronounced Plateau folds end. *Southwest:* Approximate limit of 1700-foot elevation.	Fluvial erosion; periglacial mass wasting; glacial erosion and deposition in east.
	High Plateau	Broad, rounded to flat uplands having deep, angular valleys.	Moderate to high.	Sandstone, siltstone, shale, conglomerate, and some coal.	Low-amplitude, open folds.	1,080	2,500	Dendritic.	*Northwest:* Glacial border. *Southeast:* Arbitrary boundary where pronounced Plateau folds end. *Southwest:* Approximate limit of 1,700-foot elevation.	Fluvial erosion; periglacial mass wasting; some glacial erosion and deposition in east.
	Allegheny Mountain	Wide ridges separated by broad valleys; ridge elevations decrease to northwest.	Moderate to high.	Sandstone, siltstone, shale, conglomerate, some limestone, and coal.	Large-amplitude, open folds; a few steep thrusts; many strike-slip faults in northeast.	775	3,210	Dendritic.	*East:* Crest of Allegheny Front. *West:* West flank of Chestnut Ridge. *North:* Approximate limit of 1,700-foot elevation.	Fluvial erosion, strongly controlled by major folds; some periglacial mass wasting.
	Pittsburgh Low Plateau	Smooth, undulating surface having numerous narrow, relatively shallow valleys; some high-level terraces.	Low to moderate.	Shale, siltstone, sandstone, limestone, and coal.	Moderate- to low-amplitude, open folds, decreasing in occurrence northwestward.	660	1,700	Dendritic.	*East:* West flank of Chestnut Ridge. *Northwest:* Glacial border. *Northeast:* Approximate limit of 1,700-foot elevation.	Fluvial erosion; some periglacial mass wasting.
	Glaciated Pittsburgh Plateau	Broad, rounded uplands having steep-sided, broad, linear valleys; numerous buried valleys.	Very low to moderate.	Shale, siltstone, and sandstone.	Subhorizontal beds.	900	2,200	Dendritic.	*Northwest:* Escarpment. *South and east:* Glacial border.	Glacial erosion and deposition; some fluvial erosion.
CENTRAL LOWLAND	Eastern Lake	Northwest-sloping, lake-parallel, low-relief ridges.	Very low to low.	Shale and siltstone.	Low, south-dipping to almost horizontal beds.	570	1,000	Parallel.	*Northwest:* Lake Erie. *Southeast:* Escarpment.	Glacial, lake, and fluvial deposition and erosion

[1] Local relief: 0 to 100 feet, very low; 101 to 300 feet, low; 301 to 600 feet, moderate; 601 to 1,000 feet, high; >1,000 feet, very high. (Relief categories listed here for Pennsylvania do not necessarily apply to other states or countries.)

Sciurus carolinensis	Gray Squirrel
Tamiasciurus hudsonicus	Red Squirrel
Glaucomys volans	Southern Flying Squirrel
Castoridae	
Castor canadensis	Beaver
Cricetidae	
Peromyscus maniculatus	Deer Mouse
Peromyscus leucopus	White-footed Mouse
Clethrionomys gapperi	Southern Red-backed Vole
Microtus pennsylvanicus	Meadow Vole
Microtus pinetorum	Woodland Vole
Synaptomys cooperi	Southern Bog Lemming
Muridae	
Rattus norvegicus	Norway Rat
Mus musculus	House Mouse
Zapodidae	
Zapus hudsonius	Meadow Jumping Mouse
Napaeozapus insignis	Woodland Jumping Mouse
Ondatra zibethicus	Muskrat
Carnivora	
Ursidae	
Ursus americanus	Black Bear
Canidae	
Vulpes vulpes	Red Fox
Vulpes cinereoargenteus	Gray Fox
Canis latrans	Coyote
Procyonidae	
Procyon lotor	Raccoon
Mustelidae	
Mustela frenata	Long-tailed Weasel
Mustela vison	Mink
Mephitis mephiti	Striped Skunk

(based on Gifford and Whitebread, 1951)

Certhis americana	Brown Creeper
Troglodytidae	
Thryothorus ludovicianus	Carolina Wren
Troglodytes aedon	House Wren
Troglodytes troglodytes	Winter Wren
Sylviinae	
Polipoptila caerulea	Blue-gray gnatcatcher
Turdinae	
Sialia sialis	Eastern Bluebird
Catharus fuscescens	Veery
Hylocichla mustelina	Wood Thrush
* Turdus migratorius	American Robin
Mimidae	
Dumetella corolinensis	Gray Catbird
* Mimus polyglottos	Northern Mockingbird
Toxostoma rufum	Brown Thrasher
Bombycillidae	
Bombycilla cedrorum	Cedar Waxwing
Sturnidae	
* Sturnus vulgaris	European Starling
Vireonidae	
Vireo griseus	White-eyed Vireo
Vireo solitarius	Solitary Vireo
Vireo flavifrons	Yellow-throated Vireo
Vireo gilvus	Warbling Vireo
Vireo olivaceus	Red-eyed Vireo
Emberizidae	
Vermivora pinus	Blue-winged Warbler
Dendroica petchia	Yellow Warbler
Dendroica pennsylvanica	Chestnut-sided Warbler
Dendroica coronata	Yellow-rumped Warbler
Mniotilta varia	Black-and-white Warbler
Setophaga ruticilla	American Redstart
Parula americana	Northern Parula
Helmitheros vermivorus	Worm-eating Warbler
Seiurus aurocapillus	Ovenbird
Seiurus noveboracensis	Northern Waterthrush
Oporornis formosus	Kentucky Warbler
Geothylpis trichas	Common Yellowthroat
Wilsonia citrina	Hooded Warbler
Icteria virens	Yellow-breasted Chat

Meleagridinae	
Meleagris gallopavo	Eastern Wild Turkey
Odontophorinae	
Colinus virginianus	Northern Bobwhite Quail
Charadriiformes	
Charadriidae	
* Charadrius vociferus	Killdeer
Scolopacidae	
Actitis macularia	Spotted Sandpiper
Scolopax minor	American Woodcock
Laridae	
Sterninae spp.	Terns
Columbiformes	
Colubidae	
* Columa livia	Rock Dove
* Zenaida macroura	Mourning Dove
Cuculiformes	
Cuculidae	
Coccyzus erthropthalmus	Black-billed Cuckoo
Coccyzus americanus	Yellow-billed Cuckoo
Strigiformes	
Strigidae	
Bubo virginianus	Great Horned Owl
Aegolius acadicus	Northern Saw-whet Owl
Otus asio	Northern Screech-Owl
Caprimulgiformes	
Caprimulgidae	
Chordeiles minor	Common Nighthawk
Caprimulgus vociferus	Whip-poor-will
Apodiformes	
Apodidae	
Chaetura pelagica	Chimney Swift

TABLE 8 (Continued)

Summary of Required Forest Habitat Characteristics and Management Recommendations for Forest Interior Breeding Birds

Northern Parula *Parula americana*	canopy	open	canopy	250	retain 60 - 70% canopy closure, increase shrub
Black-and-white Warbler *Mniotilta varia*	ground	open	mid-story	750	maintain early successional forest stage
American Redstart *Setophaga ruticila*	understory	open	mid-story	80	maintain closed canopy; thin competing understory trees
Prothonotary Warbler *Prothonotaria citrea*	snag	cavity	ground	250	maintain old growth stands with dead and decaying trees
Worm-eating Warbler *Helmitheros vermivorus*	ground	open	ground	750	maintain dense understory and low basal area of trees
Louisiana Waterthrush *Seiurus motacilla*	ground	open	ground	250	maintain wooded streambanks and ravines with thick undergrowth
Ovenbird *Seiurus aurocapillus*	ground	open	ground	250	maintain closed canopy and open understory; minimize disturbance
Kentucky Warbler *Oporornis formosus*	understory	open	ground	80	maintain dense understory and well-developed ground cover
Hooded Warbler *Wilsonia citrina*	understory	open	understory	80	maintain canopy closure and dense shrub layer
Scarlet Tanager *Piranga olivacea*	canopy	open	canopy	25	maintain pole stands and well-developed canopy

Observed (‹)
Compiled from Bushman and Therres (1988)

TABLE 7 Continued

LANDSCAPE PLANTINGS FOR URBAN SETTINGS WITH VALUE TO WILDLIFE

Shrubs

Smooth sumac (*Rhus glabra*)
Staghorn sumac (*Rhus typhina*)
Pasture gooseberry (*Ribes cynosbati*)
Meadow rose (*Rosa blanda*)
Pasture rose (*Rosa carolina*)
Rugosa rose (*Rosa rugosa*)
Virginia rose (*Rosa virginiana*)
Coralberry (*Symphoricarpos orbiculatus*)
Lowbush blueberry (*Vaccinium angustifolium*)

Plants That Withstand City Conditions

Trees

Norway maple (*Acer platanoides*)
Common hackberry (*Celtis occidentalis*)
Flowering dogwood (*Cornus florida*)
Hawthorns (*Crataegus* spp.)
American sweetgum (*Liquidambar styraciflua*)
Yellow-poplar (*Liriodendron tulipifera*)
Colorado spruce (*Picea pungens*)
Pin oak (*Quercus palustris*)

Shrubs

Serviceberries (*Amelanchier* spp.)
Devil's walkingstick (*Aralia spinosa*)
Red chokeberry (*Aronia arbutifolia*)
Japanese barberry (*Berberis Thunbergii*)
Gray dogwood (*Cornus racemosa*)
Autumn olive (*Elaeagnus umbellata*)
Witch-hazel (*Hamamelis virginiana*)
Inkberry (*Ilex glabra*)
Common spicebush (*Lindera benzoin*)
Honeysuckles (*Lonicera* spp.)
Scarlet firethorn (*Pyracantha coccinea*)
Common buckthorn (*Rhamnus cathartica*)
Roses (*Rosa* spp.)
American elder (*Sambucus canadensis*)
Common snowberry (*Symphoricarpos albus*)
Coralberry (*Symphoricarpos orbiculatus*)
Japanese yew (*Taxus cuspidata*)
Viburnums (*Viburnum* spp.)

Vines

Heartleaf ampelopsis (*Ampelopsis cordata*)
Common trumpetcreeper (*Campsis radicans*)
American bittersweet (*Celastris scandens*)

Flowering and Fruiting Periods of Medium Shrubs (6–10 feet)[1]

Plant	Flower color	Fruit color	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
American Hazel	i	brown	o	o	•	•			o	o	o	o	o	o
Beaked Filbert	i	brown	o	o		•	•		o	o	o	o	o	o
Speckled Alder	i	brown			•	•	•			o	o	o	o	o
Smooth Alder	i	brown				•	•			o	o	o	o	o
European Barberry	yellow	red	o	o	o	o•	•	•	o	o	o	o	o	o
Allegany Blackberry	white	black					•	•	o	o	o			
Pasture Rose	pink	red						•	o•	o•	o	o	o	o
Swamp Rose	pink	red						•	•	o•	o	o	o	o
Virginia Rose	pink	red						•	o•	o				
Rugosa Rose	pink	red					•	•	o	o•	o			
Red Chokeberry	white	red				•	•	•	•	o	o	o	o	o
Black Chokeberry	white	black	o	o		•	•	•	•	o	o	o	o	o
Bartram Serviceberry	wte/pnk	pur/blk					•	o•	o•	o•	o			
Flameleaf Sumac	i	red	o	o	o				•	o•	o•	o	o	o
Inkberry	i	black	o	o	o•	•	•	•	o	o	o	o	o	o
Devil's Walkingstick	white	black							•	•	o	o		
Silky Dogwood	white	blue						•	•	o	o	o		
Red-osier Dogwood	white	white					•	•	o•	o•	o	o		
Gray Dogwood	white	white					•	•	o•	o	o	o	o	o
Dangleberry	grn/pnk	black					•	o•	o	o	o			
Highbush Blueberry	pink	blue					•	o•	o	o	o			
Common Buttonbush	white	grn/brn	o	o	o			•	•	•	o•	o	o	o
American Elder	white	pur/blk						•	o•	o•	o			
Scarlet Elder	white	red				•	•	o•	o•	o	o			
Glossy Buckthorn	i	black					•	o•	o•	o	o			
Scarlet Firethorn	white	orange	o	o	o	o	•	•			o	o	o	o
Hobblebush	white	purple					•	•	o•	o	o	o		
American Cranberrybush	white	red	o	o	o	o	•	•	•	o	o	o	o	o
Witherod	white	pur/blk	o				•	•	•		o	o	o	o
Tatarian Honeysuckle	pnk/wte	red					•	o•	o	o	o	o	o	
Standish Honeysuckle	white	red				•		o	o	o				
Morrow Honeysuckle	wte/yel	red/yel					•	o•	o	o				
Northern Bayberry	i	gray	o	o	o	o	o•	o•	o•	o	o	o	o	o

[1]fruiting periods indicate when fruits and/or seeds are available for wildlife.
•flower; o, fruit; i, inconspicuous.

TABLE 6 Continued

Flowering and Fruiting Periods of Medium Trees (30–60 feet)[1]

Plant	Flower color	Fruit color	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Eastern Red Cedar	i	blue	o	o	o*	*	*				o	o	o	o
Balsam Fir	i	brown	o	o	o		*	*		o	o	o	o	o
Pitch Pine	i	brown	o	o	o	o*	o*	o	o	o	o	o	o	o
Northern White Cedar	i	brown				*	*			o	o	o		
Bigtooth Aspen	i	brown				*	o*	o						
Quaking Aspen	i	brown				*	o*	o						
Black Willow	i	green		*	*	o*	o*	o*	o					
Butternut	i	green				*	*				o	o	o	o
Mockernut Hickory	i	brown				*	*				o	o	o	o
Sweet Birch	i	brown	o			*	*			o	o	o	o	o
American Hornbeam	i	brown				*	*	*		o	o	o		
Common Hackberry	i	red/pur	o	o		*	*				o	o	o	o
White Mulberry	green	wte/pnk					*		o	o				
Red Mulberry	green	red				*	*	o*	o	o				
Common Sassafras	grn/yel	blue				*	*	*		o	o	o		
American Mountain-ash	white	red/orng	o	o	o		*	*	*	o	o	o	o	o
Siberian Crabapple	white	red/yel	o	o	o		*			o	o	o	o	o
Downy Serviceberry	white	pur			*	*	*	o*	o	o				
Black Tupelo	grn/wte	blu/blk				*	*	*		o	o	o		
Flowering Dogwood	white	red			*	*	*	*		o	o	o	o	
Common Persimmon	white	orng/yel			*	*	*	*			o	o	o	
Green Ash	i	brown	o	o		*	*				o	o	o	o
Black Ash	i	brown	o	o	o	*	*	o	o	o	o	o	o	o

[1]fruiting periods indicate when fruits and/or seeds are available to wildlife.
*flower; o, fruit; i, inconspicuous.

Flowering and Fruiting Periods of Low Shrubs (1–5 feet)[1]

Plant	Flower color	Fruit color	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Canada Yew	i	red				*	*		o	o	o			
Common Juniper	i	blue	o	o	o	o	o*	o	o	o	o	o	o	o
Prairie Willow	i	i			*	o*	o							
Sweetfern	i	i				*	*	*		o	o	o		
Japanese Barberry	yellow	red	o	o	o	*	*	*	o	o	o	o	o	o
Pasture Gooseberry	green	red				*	*	*	o	o	o			
American Black Currant	yel/wte	black				*	*	o*	o	o	o			
Broadleaf Meadowsweet	pnk/wte	brown						*	o*	o*	o*	o	o	
Narrowleaf Meadowsweet	wte/ros	brown						*	*	o*	o*	o	o	
Hardhack	pnk/pur	brown							*	o*	o*	o	o	
Fragrant Thimbleberry	ros/pur	red					*	*	o*	o*	o*			
Northern Dewberry	white	black					*	o*	o	o				
Common Snowberry	white	white	o	o	o	o	o*	*	*	o	o	o	o	o
Meadow Rose	pink	red					*	*	o	o	o	o	o	o
Alderleaf Buckthorn	i	black					*	*	*	o	o	o		
Shrubby St. Johnswort	yellow	brown	o						*	o*	o*	o	o	o
Black Huckleberry	green	black				*	*	o	o	o				
Box Huckleberry	pnk/wte	black					*	*	o	o				
Dwarf Huckleberry	pnk/wte	black					*	o*	o	o	o	o		
Common Bearberry	pnk/wte	red	o	o	o	*	*	*	o*	o	o	o	o	o
Lowbush Blueberry	white	blue				*	*	*	o	o	o			
Mapleleaf Viburnum	white	pur/blk	o				*	*	o*	o*	o	o	o	o
Coralberry	grn/pur	red	o						*	*	o	o	o	o
American Fly Honeysuckle	yel/grn	red				*	*	o*	o	o				
Swamp Fly Honeysuckle	grn/yel	red					*	*	o*	o	o			
Blackcap Raspberry	white	black					*	*	o	o				
Red Raspberry	white	red					*	*	o					

[1]fruiting periods indicate when fruits and/or seeds are available for wildlife.
*flower; o, fruit; i, inconspicuous.

Woody Plants (continued)

Common Name	Scientific Name
Southern Arrowood	*Viburnum dentatum*
Big Tooth Aspen	*Populus grandidentata*
American Holly	*Ilex opaca*
Mulberry	*Morus sp.*
Crepe Myrtle	*Pyrus cornaria*
Crabapple	*Berberis canadensis*
Shagbark Hickory	*Carya ovata*
Silky Dogwood	*Cornus amomum*
Blackberry	*Rubus sp.*
Spice Bush	*Lindera benzoin*
Virginia Creeper	*Parthenocissus cinquefolia*
Mockernut Hickory	*Carya tomentosa*
American Elm	*Ulmus americana*
Tulip Popular	*Liriodendron tulipifera*
Flowering Dogwood	*Cornus florida*
Honey Locust	*Gleditsia tricanthus*
Linden	*Tilia americana*
Sweetgum	*Liquidambar styraciflua*
Sumac	*Rhus sp.*
Box Elder	*Acer negundo*
Norway Maple	*Acer platanoides*

TABLE 2 Continued

SOIL ASSOCIATION SYMBOL AND MAJOR SOILS 1/	DOMINANT SLOPE	PERCENT OF ASSOCIATION 2/	SUITABILITY FOR: 3/ CROPLAND 4/ CORN	ALFALFA	WOODLAND 5/	DEGREE OF LIMITATION AND MAJOR LIMITING FACTORS FOR: 3/ 6/ TOWN AND COUNTRY PLANNING SITE SEWAGE DISPOSAL	HOMESITES WITH BASEMENTS	RECREATION CAMPSITES	PICNIC AND PLAY AREAS
Soils of the Ridge and Valley Province Cont'd.									
Edgemont	3–20	30	Excellent	Excellent	Good	MODERATE - Slope, depth to bedrock	MODERATE - Slope, depth to bedrock	MODERATE - Coarse fragments, slope	MODERATE - Coars fragments, slope
Hazleton	3–20	30	———	———	Good	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
Gilpin	3–20	25	Fair	Fair	Very Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Coarse fragments, slope	MODERATE - Coars fragments, slope
Clymer	0–15	15	Excellent	Excellent	Very Good	MODERATE - Depth to bedrock, slope	MODERATE - Depth to bedrock, slope	MODERATE - Coarse fragments, slope	MODERATE - Coars fragments, slope
Cookport	0–12	10	Good	Fair	Very Good	SEVERE - Seasonal high water table, slow permeability	MODERATE - Seasonal high water table	MODERATE - Slow permeability	SLIGHT
Gilpin	3–20	30	Fair	Fair	Very Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Coarse fragments, slope	MODERATE - Coars fragments, slope
Hazleton	3–20	20	———	———	Good	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
Calvin	3–20	10	Fair	Poor	Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Coarse fragments, slope	MODERATE - Coars fragments, slope
Gilpin	3–20	40	Fair	Fair	Very Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Coarse fragments, slope	MODERATE - Coars fragments, slope
Ernest	0–15	20	Fair	Fair	Very Good	SEVERE - Seasonal high water table, slow permeability	MODERATE - Seasonal high water table, slope	MODERATE - Moderately slow permeability, slope	MODERATE - Slope
Wharton	3–20	5	Fair	Fair	Very Good	SEVERE - Slow permeability	MODERATE - Seasonal high water table, slope	MODERATE - Slow permeability, slope	MODERATE - Slope
Gilpin	3–20	25	Fair	Fair	Very Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Coarse fragments, slope	MODERATE - Coars fragments, slope
Upshur	3–15	25	Fair	Good	Good	SEVERE - Slow permeability	MODERATE - High shrink swell potential, slope, slip hazard	MODERATE - Surface texture, slow permeability	MODERATE - Surface texture, slope
Weikert	3–40	20	———	———	Fair	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
Hazleton	3–20	40	———	———	Good	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
Cookport	0–12	20	Good	Fair	Very Good	SEVERE - Seasonal high water table, slow permeability	MODERATE - Seasonal high water table	MODERATE - Slow permeability	SLIGHT
Hazleton	3–20	25	———	———	Good	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
Gilpin	3–20	25	Fair	Fair	Very Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Coarse fragments, slope	MODERATE - Coars fragments, slope
Ernest	0–15	10	Fair	Fair	Very Good	SEVERE - Seasonal high water table, moderately slow permeability	MODERATE - Seasonal high water table, slope	MODERATE - Moderately slow permeability, slope	MODERATE - Slope
Rayne	3–15	35	Good	Excellent	Very Good	MODERATE - Slope	MODERATE - Slope	MODERATE - Slope	MODERATE - Slope
Wharton	3–20	10	Fair	Fair	Very Good	SEVERE - Slow permeability	MODERATE - Seasonal high water table, slope	MODERATE - Slow permeability, slope	MODERATE - Slope
Ernest	0–15	10	Fair	Fair	Very Good	SEVERE - Seasonal high water table, moderately slow permeability	MODERATE - Seasonal high water table, slope	MODERATE - Moderately slow permeability, slope	MODERATE - Slope

1/ *Soil Names are subject to change pending final correlation.*

2/ *The percentage does not total 100 because of minor soils in each association.*

3/ *The degree of limitation or suitability rating is based on the dominant surface texture and degree of stoniness or rockiness.*

4/ *The ratings given are for bushels per acre of corn and tons per acre of alfalfa hay and are defined as follows: EXCELLENT equals 110 or more for corn and 4.0 or more for alfalfa, GOOD equals 96–110 for corn or 3.6–4.0 for alfalfa, FAIR equals 76–95 for corn or 3.1–3.5 for alfalfa, and POOR equals 75 or less for corn or 3.0 for alfalfa. A dashed line (———) indicates that the soil is generally not suited to corn or alfalfa.*

5/ *The ratings given are for upland oak and are based on the average height obtained by the dominant and codominant trees at age 50 years and are defined as follows: EXCELLENT equals a site index of 85 or more, VERY GOOD equals a site index of 75–84, GOOD equals a site index of 65–74, FAIR equals a site index of 55–64, and POOR equals a site index of less than 54.*

6/ *SLIGHT - These soils have few limitations for the use indicated. MODERATE - These soils have one or more properties that limit their use. Correcting these factors will increase the installation and maintenance costs. SEVERE - These soils have one or more properties that seriously limit their use. Using soils with a severe limitation will increase the probability of failure and add to the cost of installation and maintenance.*

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TABLE 2 Continued

IL ASSOCIATION SYMBOL AND AJOR SOILS 1/	DOMI-NANT SLOPE	PERCENT OF ASSOCIATION 2/	SUITABILITY FOR: 3/ CROPLAND 4/ CORN	ALFALFA	WOODLAND 5/	DEGREE OF LIMITATION AND MAJOR LIMITING FACTORS FOR: 3/ 6/ TOWN AND COUNTRY PLANNING ON-SITE SEWAGE DISPOSAL	HOMESITES WITH BASEMENTS	RECREATION CAMPSITES	PICNIC AND PLAY AREA
Soils of the Piedmont Lowlands (Cont'd)									
gorastown	0–12	40	Excellent	Excellent	Excellent	MODERATE - Depth to bedrock, hazard of ground-water contamination	MODERATE - Depth to bedrock, sinkhole hazard	SLIGHT	SLIGHT
lom	3–20	15	Fair	Fair	Very Good	MODERATE - Depth to bedrock, slope	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Slope
rrill	3–15	60	Excellent	Excellent	Good	MODERATE - Slope, hazard of ground-water contamination	MODERATE - Slope	MODERATE - Gravelly, slope	MODERATE - Gravelly, slope
rkesburg	3–20	20	Fair	Fair	Very Good	SEVERE - Seasonal high water table, slow permeability	MODERATE - Seasonal high water table, slope	MODERATE - Seasonal high water table, slow permeability, slope	MODERATE - Seasonal high water table, slope
shington	0–15	50	Excellent	Excellent	Excellent	MODERATE - Slope, hazard of ground-water contamination	MODERATE - Slope	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
ffield	0–12	20	Excellent	Excellent	Excellent	SLIGHT - Hazard of ground-water contamination	SLIGHT	SLIGHT	SLIGHT
ca	3–20	40	Fair	Fair	Very Good	MODERATE - Depth to bedrock, slope	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Slope
kert	3–40	20	———	———	Fair	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
esville	3–35	5	———	———	Fair	SEVERE - Slope, depth to bedrock	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
rnsey	3–30	35	Fair	Poor	Very Good	SEVERE - Slope, instability, seasonal high water table	SEVERE - Slope, instability	SEVERE - Slope	SEVERE - Slope
ooka	3–20	35	Fair	Fair	Very Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Slope
ison	3–20	70	———	———	Good	SEVERE - Hazard of ground-water contamination, slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
derlip	3–20	10	Poor	Poor	Good	MODERATE - Slope	MODERATE - Slope	MODERATE - Surface texture, slope	MODERATE - Surface texture, slope
s	3–20	30	Good	Good	Very Good	MODERATE - Slope, hazard of ground-water contamination	MODERATE - Slope	MODERATE - Cherty, slope	MODERATE - Cherty, slope
ser	3–25	20	Fair	Fair	Very Good	MODERATE - Hazard of ground-water contamination, slope	MODERATE - Slope	SEVERE - Coarse fragments, slope	SEVERE - Coarse fragments, slope
mer	3–15	15	Fair	Fair	Good	SEVERE - Seasonal high water table, slow permeability	MODERATE - Slope, seasonal high water table	MODERATE - Coarse fragments, slow permeability, slope	MODERATE - Coarse fragments, slope
Soils of the Gettysburg-Newark Lowlands									
ottstown	0–5	45	Fair	———	Good	SEVERE - Slow permeability, seasonal high water table	SEVERE - Seasonal high water table	MODERATE - Slow permeability, seasonal high water table	MODERATE - Seasonal high water table
lestown	0–5	15	Poor	———	Fair	SEVERE - High water table	SEVERE - High water table	SEVERE - High water table	SEVERE - High water table
dington	0–8	5	Good	Fair	Good	SEVERE - Moderately slow permeability, seasonal high water table	MODERATE - Seasonal high water table	MODERATE - Moderately slow permeability	SLIGHT
in	3–20	25	Fair	Poor	Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock	MODERATE - Slope	MODERATE - Slope
Hill	3–25	25	Excellent	Excellent	Good	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
esville	3–15	10	Good	Good	Very Good	SEVERE - Moderately slow permeability	MODERATE - Slope	MODERATE - Moderately slow permeability, slope	MODERATE - Slope

FACILITY LOCATION	BUILT	ACRES	BLDGS	FACILITY NAME
Norristown, PA	1956	3.3	2	Ray S. Musselman Reserve Center
Phildelphia	1965	8.7	3	Philadelphia Memorial AFRC
Reading, PA	1987	10.0	2	Reading Reserve Center and AMSA 29
Schuylkill Haven, PA	1960	8.0	2	Robert E. Roeder Reserve Center
Scranton, PA	1951	3.0	2	CSM S.P. Serrenti Memorial Reserve Center
State College, PA	1963	7.0	2	Centre County Memorial Reserve Center
West Hazelton, PA	1958	5.1	2	Lenkalis Reserve Center
Wilkes-Barre, PA (Leased Facility)	1966	5.0	1	AMSA 32 Wilkes-Barre
Wilkes-Barre, PA	1955	6.0	2	Wilkes-Barre Reserve Center
Williamsport, PA	1960	11.0	2	Lycoming Memorial Reserve Center
Willow Grove, PA (On Naval Air Station)	1977	10.0	3	MG John W. Wurts Memorial Reserve Center, HQ 79th ARCOM and AMSA #23
Worcester, PA	1954	31.4	5	North Penn Reserve Center
York, PA	1958	2.0	2	York Memorial Reserve Center

PROGRAMMATIC NATURAL RESOURCE MANAGEMENT PLAN
APPENDIX C
TABLES

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TABLE 1
79TH ARCOM RESERVE FACILITIES IN PENNSYLVANIA

FACILITY LOCATION	BUILT	ACRES	BLDGS	FACILITY NAME
Ashley, PA	1978	22.0	2	CH (CPT) Sabalis Memorial Reserve Center
Bellefonte, PA	1959	3.5	2	SGT Paul Beck AFRC
Bethlehem, PA	1961	7.0	2	Wilson Kramer Reserve Center
Bloomsburg, PA	1965	3.0	2	Bloomsburg Reserve Center
Bristol, PA	1974	27.0	2	Bristol Veterans Reserve Center
Chambersburg, PA	1958	5.0	2	Frank M. Parker Reserve Center
Chester, PA	1958	8.0	2	James W. Reese Reserve Center
Edgemont, PA	1976	44.0	3	AMSA 31 G. Newton Square
Germantown, PA	1955	6.0	2	Germantown Reserve Center
Gettysburg, PA	1962	6.0	1	Adams County Memorial Reserve Center
Greencastle, PA	1953	37.0	3	AMSA 113 Greencastle
Harrisburg, PA	1955	11.0	2	Harrisburg AFRC
Horsham, PA	1960	11.0	2	Horsham Memorial Reserve Center
Lancaster, PA	1957	7.0	2	Lancaster Reserve Center
Lewisburg, PA	1988	10.0	2	Lewisburg Reserve Center
Lewiston, PA	1985	6.1	2	Mifflin County Reserve Center
Lock Haven, PA	1985	19.0	2	AMSA 112 Lock Haven
Marcus Hook, PA	1971	5.0	2	AMSA 84 Marcus Hook
New Cumberland, PA (On DDRE)	1994	3.0	2	New Cumberland Reserve Center

TABLE 2

INTERPRETATIONS FOR THE GENERAL SOIL MAP OF PENNSYLVANIA FOR SELECTED USES

SOIL ASSOCIATION SYMBOL AND MAJOR SOILS 1/	DOMINANT SLOPE	PERCENT OF ASSOCIATION 2/	SUITABILITY FOR: 3/			DEGREE OF LIMITATION AND MAJOR LIMITING FACTORS FOR: 3/ 8/			
			CROPLAND 4/		WOODLAND 5/	TOWN AND COUNTRY PLANNING		RECREATION	
			CORN	ALFALFA		ON-SITE SEWAGE DISPOSAL	HOMESITES WITH BASEMENTS	CAMPSITES	PICNIC AND PLAY AREA
Soils of the Coastal Plain									
Howell	3–8	60	Excellent	Excellent	Very Good	SLIGHT	SLIGHT	MODERATE - Moderately slow permeability	SLIGHT
Fallsington	0–3	5	Excellent	-----	Very Good	SEVERE - High water table	SEVERE - High water table	SEVERE - High water table	SEVERE - High water table
Soils of the Piedmont Uplands									
Chester	3–15	40	Excellent	Excellent	Very Good	MODERATE - Slope	MODERATE - Slope	MODERATE - Slope	MODERATE - Slope
Glenelg	0–20	30	Excellent	Excellent	Very Good	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Slope	MODERATE - Slope
Edgemont	3–20	55	Excellent	Excellent	Good	MODERATE - Slope, depth to bedrock	MODERATE - Slope, depth to bedrock	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
Highfield	3–20	25	Excellent	Excellent	Good	MODERATE - Slope, depth to bedrock	MODERATE - Slope	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
Glenelg	0–20	45	Excellent	Excellent	Very Good	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Slope	MODERATE - Slope
	3–20	25	Fair	Poor	Very Good	MODERATE - Slope, hazard of ground-water contamination	MODERATE - Slope	MODERATE - Channery, slope	MODERATE - Channel slope
ufield	3–20	65	Excellent	Excellent	Good	MODERATE - Slope, depth to bedrock	MODERATE - Slope	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
Arendtsville	5–20	10	Excellent	Excellent	Good	MODERATE - Slope	MODERATE - Slope	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
Myersville	3–20	5	Excellent	Excellent	Excellent	MODERATE - Slope, depth to bedrock	MODERATE - Slope	MODERATE - Slope	MODERATE - Slope
Lehigh	0–8	30	Fair	-----	Good	SEVERE - Moderately slow permeability, seasonal high water table	SEVERE - Seasonal high water table	MODERATE - Seasonal high water table, slow permeability	MODERATE - Seasonal high water table
Brecknock	3–20	20	Fair	Poor	Fair	MODERATE - Slope, depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
Neshaminy	3–25	15	-----	-----	Very Good	SLIGHT	SEVERE - Slope, stony	MODERATE - Stony	SLIGHT
Soils of the Piedmont Lowlands									
Duffield	0–12	50	Excellent	Excellent	Excellent	SLIGHT - Hazard of groundwater contamination	SLIGHT	SLIGHT	SLIGHT
Conestoga	0–15	20	Excellent	Excellent	Excellent	SLIGHT - Hazard of groundwater contamination	SLIGHT	SLIGHT	SLIGHT
Hagerstown	0–12	5	Excellent	Excellent	Excellent	MODERATE - Depth to bedrock, hazard of groundwater contamination	MODERATE - Depth to bedrock, sinkhole hazard	SLIGHT	SLIGHT
Hagerstown	0–12	50	Excellent	Excellent	Excellent	MODERATE - Depth to bedrock, hazard of ground-water contamination	MODERATE - Depth to bedrock, sinkhole hazard	SLIGHT	SLIGHT
Duffield	0–12	25	Excellent	Excellent	Excellent	SLIGHT- Hazard of groundwater contamination	SLIGHT	SLIGHT	SLIGHT

TABLE 2 Continued

SSOCIATION BOL AND MAJOR SOILS 1/	DOMI-NANT SLOPE	PERCENT OF ASSOCIATION 2/	SUITABILITY FOR: 3/ CROPLAND 4/ CORN	CROPLAND 4/ ALFALFA	WOODLAND 5/	DEGREE OF LIMITATION AND MAJOR LIMITING FACTORS FOR: 3/ 6/ TOWN AND COUNTRY PLANNING -SITE SEWAGE DISPOSAL	TOWN AND COUNTRY PLANNING HOMESITES WITH BASEMENTS	RECREATION CAMPSITES	RECREATION PICNIC AND PLAY AREA
Soils of the Gettysburg-Newark Lowlands Contd.									
Lansdale	3–15	30	Good	Excellent	Good	MODERATE - Slope, depth to bedrock	MODERATE - Slope, depth to bedrock	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
Penn	3–15	20	Fair	Poor	Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Slope
Readington	0–8	10	Good	Fair	Good	SEVERE - Moderately slow permeability, seasonal high water table	MODERATE - Seasonal high water table	MODERATE - Moderately slow permeability	SLIGHT
Lewisberry	3–20	45	Fair	Poor	Good	MODERATE - Slope	MODERATE - Slope	MODERATE - Gravelly, slope	MODERATE - Gravelly slope
Penn	3–15	25	Fair	Poor	Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Slope
Meckesville	3–15	40	Good	Good	Very Good	SEVERE - Moderately slow permeability	MODERATE - Slope	MODERATE - Moderately slow permeability, slope	MODERATE - Slope
Albrights	3–15	20	Good	Fair	Good	SEVERE - Moderately slow permeability, seasonal high water table	MODERATE - Seasonal high water table, slope	MODERATE - Slope, moderately slow permeability	MODERATE - Slope
Penn	3–15	35	Fair	Poor	Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Slope
Klinesville	3–35	15	-----	-----	Fair	SEVERE - Depth to bedrock	MODERATE - Slope, depth to bedrock	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
Reaville	0–8	15	Poor	-----	Fair	SEVERE - Depth to bedrock, slow permeability, seasonal high water table	MODERATE - Depth to bedrock, seasonal high water table	MODERATE - Seasonal high water table, coarse fragments	MODERATE - Seasonal high water table, coarse fragments
Soils of the Ridge and Valley Province									
[illegible]	8–30	50	Poor	Poor	Good	SEVERE - Slope, depth to bedrock	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
[illegible]rt	3–40	15	-----	-----	Fair	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
Bedington	3–15	5	Excellent	Excellent	Very Good	MODERATE - Slope, depth to bedrock	MODERATE - Slope	MODERATE - Coarse fragments, slope	MODERATE - Coarse fragments, slope
Cookport	0–12	30	Good	Fair	Very Good	SEVERE - Seasonal high water table, slow permeability	MODERATE - Seasonal high water table	MODERATE - Slow permeability	SLIGHT
Clymer	0–15	15	Excellent	Excellent	Very Good	MODERATE - Depth to bedrock	MODERATE - Depth to bedrock	MODERATE - Coarse fragments	MODERATE - Coarse fragments
Hazleton	3–20	15	-----	-----	Good	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
Cookport	0–12	20	Good	Fair	Very Good	SEVERE - Seasonal high water table, slow permeability	MODERATE - Seasonal high water table	MODERATE - Slow permeability	SLIGHT
Cavode	0–15	20	Fair	-----	Very Good	SEVERE - Seasonal high water table, slow permeability	SEVERE - Seasonal high water table	MODERATE - Seasonal high water table, slow permeability	MODERATE - Seasonal high water table, slope
Wharton	3–20	10	Fair	Fair	Very Good	SEVERE - Slow permeability	MODERATE - Seasonal high water table, slope	MODERATE - Slow permeability, slope	MODERATE - Slope
Culleoka	3–20	60	Fair	Fair	Very Good	SEVERE - Depth to bedrock	MODERATE - Depth to bedrock, slope	MODERATE - Slope	MODERATE - Slope
Weikert	3–40	10	-----	-----	Fair	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope
Dekalb	3–35	40	-----	-----	Fair	SEVERE - Depth to bedrock, slope	SEVERE - Depth to bedrock, slope	SEVERE - Slope	SEVERE - Slope
Laidig	3–20	20	-----	-----	Good	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope	SEVERE - Slope, stony
Buchanan	3–25	5	-----	-----	Good	SEVERE - Seasonal high water table, slope, slow permeability	SEVERE - Slope	MODERATE - Stony, slow permeability, slope	MODERATE - Stony, coarse fragments, slope

TABLE 3
EXISTING VEGETATION MASTER PLANT LIST

Herbaceous Plants

Common Name	Scientific Name
Wintercress	*Barbarea vulgaris*
Teasel	*Dipsacus laciniatus*
Goldenrod	*Solidago sp.*
Broadleaved Cattail	*Typha latifolia*
Sedges	*Carex spp.*
Crown Vetch	*Coronilla varia*
Wool Grass	*Scirpus cyperinus*
Soft Rush	*Juncus effusus*
Blue Flag	*Iris versicolor*
Boneset	*Eupatorium perfoliatum*
Swamp Milkweed	*Asclepias incarnata*
Daisy Fleabane	*Erigeron annuus*
Common Mullein	*Verbascum thapsus*

Woody Plants (Trees, shrubs, and vines)

Black Locust	*Robinia pseudoacacia*
Red Cedar	*Juniperus virginianus*
Black Cherry	*Prunus serotina*
White Pine	*Pinus strobus*
Juniper	*Juniperus communis*
Pacific Yew	*Taxus canadensis*
Sugar Maple	*Acer sacharum*
Douglas Eastern arborvitae	*Thuja occidentalis*
Poison Ivy	*Toxicodendron radicans*
Japanese Honeysuckle	*Lonicera japonica*
Black Willow	*Salix nigra*
Pin Oak	*Quercus palustris*
Black Walnut	*Juglans nigra*
Spruce	*Picea sp.*
Green Ash	*Fraxinus pennsylvanica*
American Sycamore	*Platanus occidentalis*
Northern Red Oak	*Quercus rubra*
Eastern Hemlock	*Tsuga canadensis*
White Birch	*Betula papyrifera*
Red Maple	*Acer rubrum*

TABLE 4
OBSERVED WILDLIFE
MASTER WILDLIFE LIST

Birds

Common Name	Scientific Name
Black Capped Chickadee	*Parus atricapillus*
Tufted Titmouse	*Parus bicolor*
Northern Cardinal	*Cardinalis cardinalis*
American Robin	*Turdus migratorius*
House Sparrow	*Passer domesticus*
Common Grackle	*Quiscalus quiscala*
European Starling	*Sturnus vulgaris*
American Crow	*Corvus brachyrhynchos*
Mallard	*Anas platyrhynchos*
Barn Swallow	*Hirundo rustica*
Killdeer	*Charadrius vociferus*
House Finch	*Carpoclacus mexicanus*
Northern Mockingbird	*Mimus polyglottos*
Red-Winged Blackbird	*Agelaius phoeniceus*
Mourning Dove	*Zenaida macroura*
Canada Goose	*Branta canadensis*
Turkey Vulture	*Cathartes aura*
Pigeon	*Columbia livia*

Mammals

Common Name	Scientific Name
Eastern Cottontail	*Sylvilagus floridanus*
Gray Squirrel	*Sciurus carolinensis*
Groundhog	*Marmota monax*
Virginia Opossum	*Didelphis marsupialis*
White - Tailed Deer	*Odocoileus virginianus*
Eastern Chipmunk	*Tamias striatus*
Raccoon	*Procyon lotor*

TABLE 5

RELATIVE IMPORTANCE OF COMMON PENNSYLVANIA NATIVE PLANTS TO WILDLIFE

The following lists the relative importance of common native plants for use as food and cover for native wildlife. A low numerator (stars) over a large denominator (users) indicates that the plant is used by many wildlife species, but only to a limited extent by each. A higher numerator and small denominator characterizes a plant of great importance to a limited segment of wildlife.

Adapted from Martin, et al., 1951.

Regional Listing of Wildlife Plants

Northeast Region

	Water-birds	Marsh-Shore-birds	Upland Game-birds	Song-birds	Fur & Game Mamm.	Small Mamm.	Browsers
WOODY PLANTS							
Oak (71*/43)	7*/3	0*/1	11*/5	25*/17	21*/14	4*/2	3*/1
Blackberry (50*/56)	—	—	13*/5	27*/34	4*/10	4*/5	2*/2
Wild Cherry (44*/56)	—	—	4*/5	27*/29	9*/13	2*/7	2*/2
Pine (43*/33)	—	—	1*/2	30*/18	8*/10	2*/2	2*/1
Dogwood (42*/47)	3*/2	—	6*/5	25*/28	4*/6	1*/4	3*/2
Grape (37*/53)	1*/1	—	15*/5	14*/37	7*/8	0*/2	—
Maple (36*/27)	—	—	2*/4	13*/7	12*/11	3*/3	6*/2
Beech (34*/31)	1*/1	—	2*/3	8*/12	21*/12	2*/2	0*/1
Blueberry (29*/37)	1*/2	—	3*/2	9*/21	9*/7	5*/3	2*/2
Birch (27*/22)	—	—	6*/3	8*/7	9*/8	0*/2	4*/2
Sumac (23*/28)	—	—	4*/3	10*/19	7*/4	—	2*/2
Aspen (23*/17)	—	—	5*/3	0*/1	12*/10	0*/1	6*/2
Spruce (20*/16)	—	—	—	11*/8	9*/6	0*/1	0*/1
Hickory (17*/19)	—	—	0*/1	6*/6	9*/9	2*/3	—
Fir (16*/13)	—	—	0*/1	6*/4	4*/5	0*/1	6*/2
Alder (14*/11)	—	—	2*/3	7*/3	3*/3	—	2*/2
Poison-ivy (13*/28)	—	—	2*/4	11*/21	0*/3	—	—
Blackgum (13*/27)	0*/1	—	0*/3	9*/18	4*/5	—	—
Mulberry (13*/25)	—	—	—	11*/21	2*/4	—	—
Elm (13*/15)	2*/1	—	0*/3	8*/6	3*/4	—	0*/1
Cedar (13*/8)	—	—	—	13*/7	0*/1	—	—
Serviceberry (12*/39)	—	—	0*/2	6*/25	5*/6	0*/4	1*/2
Hazelnut (12*/16)	—	—	3*/3	0*/1	6*/6	2*/4	1*/2

Northeast Region (cont.)

	Water-birds	Marsh-Shore-birds	Upland Game-birds	Song-birds	Fur & Game Mamm.	Small Mamm.	Browsers
WOODY PLANTS (cont.)							
Willow (12*/13)	—	—	2*/3	—	5*/7	0*/1	5*/2
Hemlock (12*/13)	—	—	0*/1	7*/5	3*/4	0*/2	2*/1
Greenbrier (11*/23)	0*/1	—	4*/3	6*/14	1*/5	—	—
Ash (11*/18)	0*/1	—	1*/2	6*/6	3*/5	0*/2	1*/2
Elderberry (10*/36)	—	—	1*/2	8*/28	1*/3	0*/2	0*/1
Virginia-creeper (10*/22)	—	—	—	10*/19	0*/3	—	—
Tuliptree (10*/14)	—	—	—	7*/7	1*/4	1*/2	1*/1
Mountain-ash (10*/9)	—	—	3*/2	4*/5	—	0*/1	3*/1
Holly (6*/20)	—	—	0*/1	5*/14	0*/2	0*/2	1*/1
Hawthorn (6*/15)	—	—	1*/3	3*/3	2*/6	0*/1	0*/2
Black Walnut (6*/4)	—	—	—	—	6*/4	—	—
UPLAND WEEDS AND HERBS							
Ragweed (67*/49)	—	3*/3	11*/6	53*/37	0*/1	0*/1	0*/1
Bristlegrass (62*/40)	1*/1	0*/4	9*/6	52*/29	—	—	—
Sedge (32*/43)	6*/13	5*/7	2*/5	16*/12	0*/3	0*/1	3*/2
Crabgrass (32*/20)	—	—	3*/4	27*/15	2*/1	—	—
Panicgrass (28*/32)	—	0*/1	0*/4	25*/25	3*/2	—	—
Pigweed (16*/21)	—	—	0*/3	16*/16	0*/1	—	0*/1
Clover (15*/21)	—	0*/1	8*/5	0*/3	7*/7	0*/4	0*/1
Sheepsorrel (12*/23)	—	—	1*/5	9*/14	2*/1	0*/3	—
Goosefoot (12*/18)	—	—	0*/2	11*/15	—	1*/1	—
Dropseedgrass (8*/7)	—	—	—	8*/7	—	—	—
Bluegrass (7*/9)	4*/1	—	1*/2	0*/1	2*/3	0*/1	0*/1
Pokeweed (6*/25)	—	—	2*/1	3*/19	1*/4	0*/1	—
Dandelion (5*/14)	—	—	3*/5	1*/4	1*/3	0*/1	0*/1
Plantain (5*/6)	—	—	0*/1	0*/1	5*/3	—	0*/1
MARSH AND AQUATIC PLANTS							
Smartweed (59*/50)	18*/16	4*/9	3*/2	34*/22	0*/1	—	—
Pondweed (59*/32)	55*/23	4*/9	—	—	—	—	—
Wildrice (48*/25)	32*/16	5*/2	1*/1	10*/6	—	—	—
Bulrush (37*/36)	26*/17	8*/12	—	0*/4	3*/2	0*/1	—
Wildcelery (26*/17)	26*/16	0*/1	—	—	—	—	—
Naiad (21*/17)	21*/17	—	—	—	—	—	—
Cordgrass (17*/8)	9*/5	1*/1	—	7*/2	—	—	—
Widgeongrass (16*/22)	14*/15	2*/7	—	—	—	—	—
Cutgrass (13*/13)	8*/9	1*/1	—	2*/1	2*/2	—	—
Spikerush (12*/14)	8*/8	4*/5	—	—	0*/1	—	—
Eelgrass (12*/12)	12*/11	0*/1	—	—	—	—	—
Burreed (11*/13)	8*/9	0*/3	—	—	3*/1	—	—
Wildmillet (10*/16)	8*/7	1*/2	0*/2	1*/4	0*/1	—	—
Duckweed (10*/9)	10*/7	0*/2	—	—	—	—	—
Algae (9*/10)	9*/9	0*/1	—	—	—	—	—
Arrowhead (7*/6)	4*/4	3*/2	—	—	—	—	—
Muskgrass (6*/16)	6*/14	0*/2	—	—	—	—	—
Arrow-arum (5*/2)	5*/1	0*/1	—	—	—	—	—

TABLE 6

FLOWERING AND FRUITING PERIODS OF NATIVE PLANTS VALUABLE TO WILDLIFE

Adapted from Degraaf and Witman, 1979

Flowering and Fruiting Periods of Tall Trees (60-100+ feet)[1]

Plant	Flower color	Fruit color	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Eastern Hemlock	i	brown	o				•	•			o	o	o	o
Red Spruce	i	brown				•	•				o	o		
White Spruce	i	brown					•			o	o	o	o	
Colorado Spruce	i	brown	o	o		•	•				o	o	o	o
Eastern Larch	i	brown					•			o	o			
White Pine	i	brown				•	•	•		o	o			
Red Pine	i	brown	o	o	o	o•	o•	o•	o	o	o	o	o	o
Scotch Pine	i	brown	o	o	o	o	•	•			o	o	o	o
Eastern Poplar	i	brown		•	•	o•	o•	o						
Eastern Black Walnut	i	green				•	•	•			o	o	o	
Shagbark Hickory	i	brown				•	•				o	o	o	o
Pignut Hickory	i	brown				•	◦	•			o	o	o	o
Yellow Birch	i	brown	o	o		•	•			o	o	o	o	o
Paper Birch	i	brown	o	o		◦	•	•		o	o	o	o	o
American Beech	i	brown				•	•				o	o	o	
White Oak	i	brown			•	•	•				o	o	o	
Northern Red Oak	i	brown				•	•				o	o	o	o
Scarlet Oak	i	brown				•	•				o	o	o	
Pin Oak	i	brown				•	•				o	o	o	
Black Oak	i	brown				•	•				o	o	o	o
American Elm	i	brown		•	•	o•	o•	o						
Yellow-poplar	grn/orng	brown	o			•	•	•			o	o	o	o
American Sweetgum	i	yellow			•	•	•				o	o	o	
Black Cherry	white	pur/blk			•	•	•	o•	o	o	o	o		
Sugar Maple	yellow	brown				•	•	o•	o	o	o	o	o	o
Silver Maple	grn/red	brown		•	•	o•	o•	o						
Norway Maple	yellow	brown				•	•	•			o	o	o	
Boxelder	yel/grn	brown	o	o	o•	•	•			o	o	o	o	o
Red Maple	red	brown		•	o•	o•	o•	o	o					
White Ash	i	brown	o	o		•	•	•			o	o	o	o

[1]fruiting periods indicate when fruits and/or seeds are available for wildlife.
•flower; o, fruit; i, inconspicuous.

Flowering and Fruiting Periods of Low Trees (10–30 feet)[1]

Plant	Flower color	Fruit color	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Gray Birch	i	brown	o	o		•	•				o	o	o	o
American Holly	i	red	o	o	o	o	o•	o•		o	o	o	o	o
American Hop-hornbeam	i	brown				•	•	•		o	o	o	o	o
Bobwhite Crabapple	pnk/wte	yellow	o	o	o	o	•			o	o	o	o	o
Dorothea Crabapple	pnk/wte	yellow	o	o	o		•			o	o	o	o	o
Sargent Crabapple	white	red	o	o	o		•			o	o	o	o	o
Japanese Flowering Crabapple	white	red/yel	o	o	o		•			o	o	o	o	o
Tea Crabapple	white	yel/red	o	o			•			o	o	o	o	o
Common Apple	wte/pnk	red/grn				•	•	•			o	o	o	
Smooth Serviceberry	white	pur/blk			•	•	•	o•	o	o				
Shadblow Serviceberry	white	pur			•	•	•	o•	o	o				
Pin Cherry	white	red			•	•	•	•	o•	o	o	o	o	o
Common Chokecherry	white	pur/blk				•	•	•	o•	o	o	o		

[1]fruiting periods indicate when fruits and/or seeds are available to wildlife.
•flower; o, fruit; i, inconspicuous.

TABLE 6 Continued

Flowering and Fruiting Periods of Tall Shrubs (11–20+ feet)[1]

Plant	Flower color	Fruit color	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Pussy Willow	i	i			•	o•	o							
Purpleosier Willow	i	i				o•	o•							
Allegany Chinkapin	i	brown						•	•	o	o			
Common Spicebush	grn/yel	red			•	•	•		o	o	o	o		
Witch-hazel	yellow	brown	o	o	o	o	o	o	o	o	•	•	•	o
Multiflora Rose	white	red	o	o	o	o		•	o•	o	o	o	o	o
Cockspur Hawthorn	white	red	o	o			•			o	o	o	o	o
Washington Hawthorn	white	orng/red	o					•			o	o	o	o
Paul's Scarlet Hawthorn	pnk/red	red					•				o	o		
Smooth Sumac	green	red	o	o	o			•	•	o•	o	o	o	o
Staghorn Sumac	green	red	o	o	o		•	•	•	o	o	o	o	o
Common Winterberry	grn/wte	red	o	o	o	•	•	•	•	o	o	o	o	o
Smooth Winterberry	i	red					•	•			o	o	o	o
Common Buckthorn	i	black	o			•	•	o•	o•	o	o	o	o	o
Autumn Olive	yellow	red	o				•	•		o	o	o	o	o
Russian Olive	sil/yel	sil/wte	o	o	o	o	•	•	•	o	o	o	o	o
Alternate-leaf Dogwood	white	blu/blk					•	•	o	o	o			
Northern and Southern Arrowwood	white	blue						•	•	o•	o	o	o	
Nannyberry	white	blu/blk			•	•	•		o	o	o			
Amur Honeysuckle	white	red					•	•	o•	o	o	o	o	

[1]fruiting periods indicate when fruits and/or seeds are available for wildlife.
•flower; o, fruit; i, inconspicuous.

Flowering and Fruiting Periods of Vines[1]

Plant	Flower color	Fruit color	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Fox Grape	i	pur/blk					•	•	•	o	o	o		
Riverbank Grape	i	blu/blk					•	•	•	o	o			
Summer Grape	i	black					•	•	•		o	o		
New England Grape	i	black						•	•		o			
Frost Grape	i	black					•	•			o	o		
American Bittersweet	i	yel/orng					•	•		o	o	o	o	o
Common Greenbriar	i	blu/blk	o	o	o	•	•	•	•	•	o	o	o	o
Cat Greenbriar	i	blu/blk	o	o	o		•	•			o	o	o	o
Heartleaf Ampelopsis	i	blue					•	•		o	o	o	o	
Virginia Creeper	i	blue	o	o				•	•	o•	o	o	o	o
Common Trumpetcreeper	orng/red	brown							•	o•	o•	o		
Common Moonseed	i	black					•	•	•	o	o	o		
Poison Ivy	i	white	o	o			•	•	•	o	o	o	o	o

[1]fruiting periods indicate when fruits and/or seeds are available to wildlife.
•flower; o, fruit; i, inconspicuous.

TABLE 7

LANDSCAPE PLANTINGS FOR URBAN SETTINGS WITH VALUE TO WILDLIFE

Adapted from Degraaf and Witman, 1979

Street Trees That Are Valuable for Birds

Shade trees for street planting should show six characteristics:

Hardiness to city conditions
Straightness of growth
Insect resistance
Shade production
Cleanliness—lack of litter
Longevity

Some trees that meet these criteria, and are also valuable to birds in the Northeast are given below:

Wide Streets (more than 50 feet wide)

Sugar maple (*Acer saccharum*)*
Common hackberry (*Celtis occidentalis*)
White ash (*Fraxinus americana*)
Green ash (*Fraxinus pennsylvanica*)
Yellow-poplar (*Liriodendron tulipifera*)
White oak (*Quercus alba*)

Medium Streets (40–50 feet wide)

Norway maple (*Acer platanoides*)
Red maple (*Acer rubrum*)
American sweetgum (*Liquidambar styraciflua*)
Northern red oak (*Quercus rubra*)
Scarlet oak (*Quercus coccinea*)
Pin oak (*Quercus palustris*)

Narrow Streets (less than 40 feet wide)

Flowering dogwood (*Cornus florida*)
Cockspur hawthorn (*Crataegus crus-galli*)
Paul's scarlet hawthorn (*Crataegus oxycantha pauli*)
Washington hawthorn (*Crataegus phaenopyrum*)

*Not recommended for streets salted in winter.

Sources:

Bush-Brown, J. and L. 1965. *America's garden book.* New York: Charles Scribner's Sons.
Fenska, R. R. 1956. *The complete modern tree expert's manual.* New York: Dodd, Mead and Co.

Plants That Will Grow in Dry, Sandy Soils

Trees

EVERGREEN

Eastern red cedar (*Juniperus virginiana*)
White spruce (*Picea glauca*)
Red pine (*Pinus resinosa*)
Pitch pine (*Pinus rigida*)
White pine (*Pinus strobus*)
Scotch pine (*Pinus sylvestris*)

DECIDUOUS

Boxelder (*Acer negundo*)
Gray birch (*Betula populifolia*)
Pignut hickory (*Carya glabra*)
Bigtooth aspen (*Populus grandidentata*)
Quaking aspen (*Populus tremuloides*)
Black cherry (*Prunus serotina*)
Scarlet oak (*Quercus coccinea*)
Common sassafras (*Sassafras albidum*)

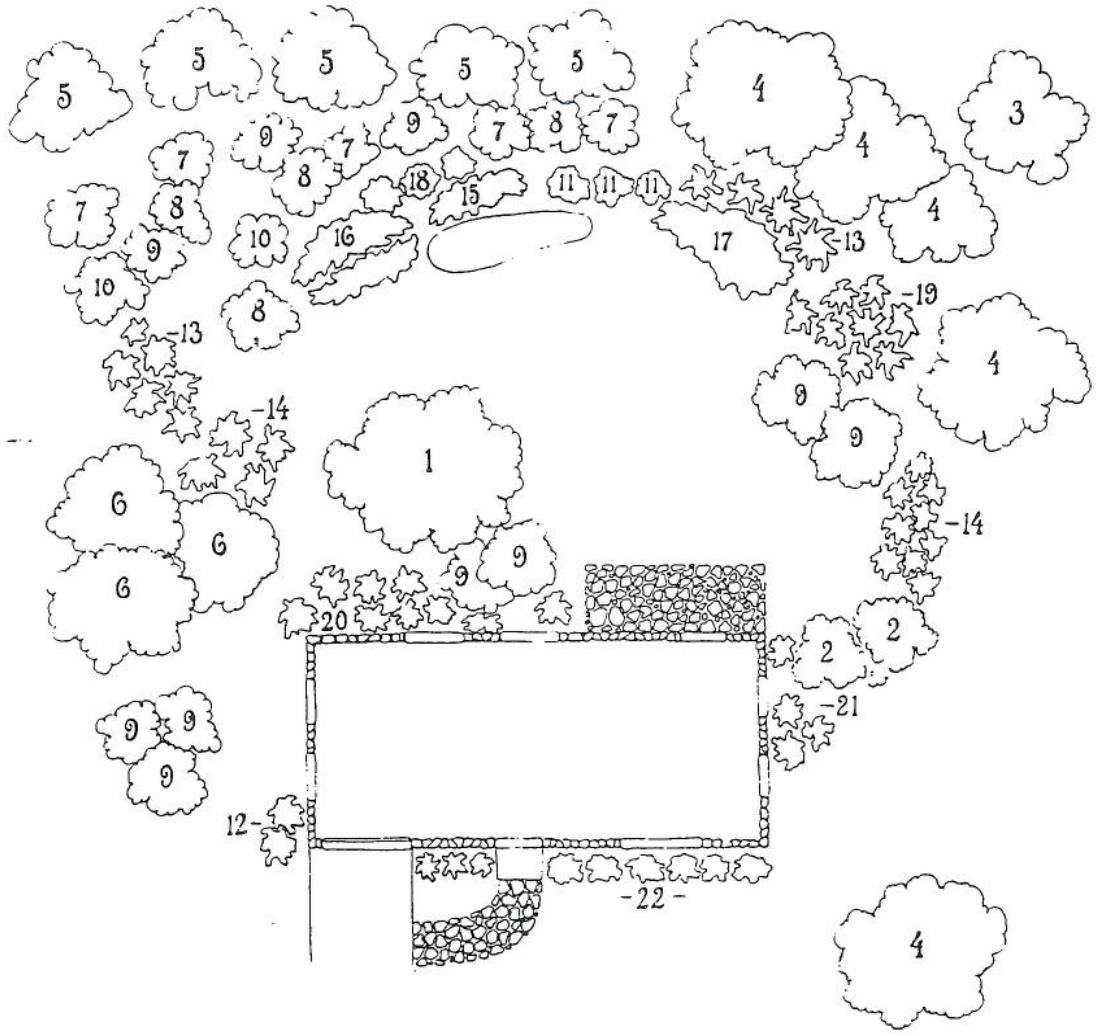
Shrubs

EVERGREEN

Common bearberry (*Arctostaphylos uva-ursi*)
Inkberry (*Ilex glabra*)
Common juniper (*Juniperus communis*)

DECIDUOUS

Japanese barberry (*Berberis Thunbergii*)
European barberry (*Berberis vulgaris*)
Sweetfern (*Comptonia peregrina*)
Russian olive (*Elaeagnus angustifolia*)
Black huckleberry (*Gaylussacia baccata*)
Shrubby St. Johnswort (*Hypericum spathulatum*)
Morrow honeysuckle (*Lonicera Morrowi*)
Northern bayberry (*Myrica pensylvanica*)
Common buckthorn (*Rhamnus cathartica*)
Glossy buckthorn (*Rhamnus frangula*)
Flameleaf sumac (*Rhus copallina*)



LARGE TREES
1. American Beech
2. Northern Red Oak
3. White Oak
4. Sugar Maple
5. Eastern White Pine
6. White Spruce
7. Eastern Hemlock

SMALL TREES
8. American Mountain-ash
9. Flowering Dogwood
10. Washington Hawthorn

LARGE SHRUBS
11. Common Winterberry
12. Amur Honeysuckle
13. Autumn Olive
14. American Cranberrybush
15. American Elder

SMALL SHRUBS
16. American Blackberry
17. Silky Dogwood
18. Red-osier Dogwood
19. Tatarian Honeysuckle
20. Common Snowberry
21. Japanese Barberry
22. Your favorite ornamental—
Pyracantha, Yew, Juniper, etc.

US Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Sample Wildlife Habitat
Landscape Planting Plan

TABLE 8

Summary of Required Forest Habitat Characteristics and Management Recommendations for Forest Interior Breeding Birds

Species	Nest Location	Nest Type	Feeding Location	Minimum Forest Size (Acres)	Management Recommendations
Red-Shouldered Hawk * *Buteo lineatus*	canopy	open	open areas	250	maintain mature forest at 148 to 400 trees per acre with few understory trees
Barred Owl *Strix varia*	snag	cavity	open understory	250	retain large hollow cut areas on rotations of 150 years or more
Whip-poor-will *Caprimulgus vociferus*	ground	no nest	open areas	300	maintain pole-size even-age stands
Hairy Woodpecker * *Picoides villosus*	snag	cavity	trunk	10	retain decaying trees and healthy trees during forest management activities
Pileated Woodpecker * *Dryocopus pileatus*	trunk	cavity	trunk	125	retain dead and decaying trees with rotations of 150 years or more
Acadian Flycatcher *Empidonax virescens*	shrub	open	subcanopy	80	maintain tall closed canopy; thin understory trees
Yellow-throated Vireo *Vireo flavifrons*	canopy	open	canopy	250	selective cutting to maintain partially open canopy
Red-eyed Vireo *Vireo olivaceus*	canopy	open	canopy	50	retain at least 70% canopy closure

TABLE 9
REPTILES PRESENT IN EASTERN/CENTRAL PENNSYLVANIA THAT MAY BE FOUND ON THE 79TH ARCOM SITES

TURTLES

Common Name	Scientific Name
Common Snapping	Chelydra s. serpentina
Stinkpot	Sternotherus odoratus
Spotted	Clemmys guttata
Wood	Clemmys insculpta
Bog	Clemmys muhlenbergi (1)
Eastern Box	Terrapene carolina
Map	Graptemys geographica
Midland Painted	Chrysemys picta marginata
Red-bellied	Pseudemys rubriventris (2)

LIZARDS

Common Name	Scientific Name
Northern Fence Lizard	Sceloporus undalatus hyacinthius
Northern Coal Skink	Eumeces anthracinus (3)
Five-lined Skink	Eumeces fasciatus

SNAKES

Common Name	Scientific Name
Northern Water	Nerodia spiedon
Northern Brown	Storeria dekayi
Northern Red-bellied	S. oipitomaculata
Eastern Ribbon	Thamnophis sauritus
Eastern Garter	T. s. sirtalis
Eastern Hognose	Heterodon platyrhinos
Northern Ringneck	Diadophis punctatus edwardsi
Northern Black Racer	Coluber constrictor
Eastern Smooth Green	Opheodrys vernalis
Black Rat	Elaphe obsoleta
Eastern Milk	Lampropeltis triangulum
Northern Copperhead	Agkistrodon contortrix makeson
Timber Rattlesnake	Crotalus horridus

---

(1) extreme western edge of range comes into The Great Valley (The Great Valley is in Franklin and Cumberland Counties)

(2) one aount in Franklin county on West Branch of Conocheague Creek in 1968 by PA Fish Commission.

(3) scattered and extremely localized; uncertain locality given by S. F. Baird in 1850 in western Franklin county on eastern most ridge of the Valley and Ridge section.

(McCoy, 1982)

TABLE 10
AMPHIBIANS PRESENT IN EASTERN/CENTRAL PENNSYLVANIA THAT MAY BE FOUND ON 79TH ARCOM SITES

SALAMANDERS

Common Name	Scientific Name
Jefferson	Ambystoma jeffersonianum
Spotted	Ambystoma maculatum
Marbled	Ambystoma opacum
Red-spotted Newt	Notophthalmus viridescens
Northern Dusky	Desmognathus fuscus
Mountain Dusky	Desmognathus ochrophaeus (1)
Redbacked	Plethodon cinereus
Slimy	Plethodon glutinosus
Valley and Ridge	Plethodon hoffmani (2)
Four-toed	Hemidactylium scutatum (3)
Northern Spring	Gyrinophilus porphyriticus
Northern Red	Pseudotriton ruber
Northern Two-lined	Eurycea bislineata
Long-tailed	Eurycea longicauda
Eastern Spadefoot	Scaphiopus holbrooki (4)

TOADS AND FROGS

Common Name	Scientific Name
Eastern American Toad	Bufo a. americanus
Fowler's Toad	B. woodhousei fowleri
Northern Cricket Frog	Acris crepitans
Northern Spring Peeper	Hyla crucifer
Gray Treefrog	Hyla versicolor
Striped Chorus Frog	Pseudacris triseriata
Bullfrog	Rana catesbeiana
Green Frog	Rana clamitans melanota
Pickerel Frog	Rana palustris
Wood Frog	Rana sylvatica

---

(1) a few scattered populations in the Valley and Ridge section; absent from southeastern PA
(2) would be restricted to the Valley and Ridge Mountains
(3) special habitat requirements of forest pools and bogs
(4) scattered and extremely localized

(McCoy, 1982)

TABLE 11

A LIST OF BIRDS IN EASTERN AND CENTRAL PENNSYLVANIA THAT MAY BE FOUND ON OR ADJACENT TO 79TH ARCOM SITES

Scientific Name	Common Name
Podicipediformes	
Podicipedidae	
Podilymbus podiceps	Pied-billed Grebe
Ciconiiformes	
Ardeidae	
Ardea horodias	Great Blue Heron
Butorides striatus	Green-backed Heron
Casmerodrus albus	Great Egret
Anseriformes	
Anserinae	
Branta canadensis	Canada Goose
Anatinae	
* Anas platyrhynchos	Mallard
Aix sponsa	Wood Duck
Falconiformes	
Cathartidae	
* Cathartes aura	Turkey Vulture
Accipitrinae	
Accipiter straitus	Sharp-shinned Hawk
Buteo lineatus	Red-shouldered Hawk
Buteo jamaicensis	Red-tailed Hawk
Falconidae	
Falco sparverius	American Kestrel
Galliformes	
Phasianidae	
Phasianus colchius	Ring-necked Pheasant
Tetraoninae	
Bonasa umbellus	Ruffed Grouse

Trochilidae	
Archilochus colubris	Ruby-throated Hummingbird
Coraciiformes	
Alcedinidae	
Ceryle alcyon	Belted Kingfisher
Piciformes	
Picidae	
Melanerpes carolinus	Red-bellied Woodpecker
Picoides pubescens	Downy Woodpecker
Picoides villosus	Hairy Woodpecker
* Calaptes auratus	Northern Flicker
Dryocopus pileatus	Pileated Woodpecker
Passeriformes	
Tyrannidae	
Contopus borealis	Eastern Wood-Pewee
Empidonax virescens	Acadian Flycatcher
Empidonax alnorum	Alder Flycatcher
Empidonax minimum	Least Flycatcher
Sayornis phoebe	Eastern Phoebe
Myiarchus crinitius	Great Crested Flycatcher
Tyrannus tyrannus	Eastern Kingbird
Hirundininae	
Tachycineta bicolor	Tree Swallow
Stelgidopteryx serripennis	Northern Rough-winged Swallow
Riparia riperia	Bank Swallow
Hirundo pyrrhonota	Cliff Swallow
Hirundo rustica	Barn Swallow
Corvidae	
* Cyanocitta cristata	Blue Jay
* Corvus brachyrhynchos	American Crow
Corvus ossifragus	Fish Crow
Corvus corax	Northern Raven
Paridae	
* Parus atricapillus	Black-capped Chickadee
* Parus bicolor	Tufted Titmouse
Sittidae	
Sitta corolinensis	White-breasted Nuthatch
Certhiidae	

Passeridae	
* Passer domesticus	House Sparrow
Thraupinae	
Piranga olivacea	Scarlet Tanager
Emberizinae	
Pipilo erythrophthalmus	Rufous-sided Towhee
Spizella passerina	Chipping Sparrow
Spizella pusilla	Field Sparrow
Pooecetes gramineus	Vesper Sparrow
Ammodramus savannarum	Grasshopper Sparrow
Ammodramus henslowii	Henslow's Sparrow
Melospiza melodia	Song Sparrow
Melospiza geogiana	Swamp Sparrow
Junco hyemalis	Dark-eyed Junco
Icterinae	
* Agelaius phoeniceus	Red-wigned Blackbird
Sturnella magna	Eastern Meadowlark
* Quiscalus quiscula	Common Grackle
Molothrus ater	Brown-headed Cowbird
Icterus galbula	Northern Oriole
Icterus spurius	Orchard Oriole
Fringillidae	
Pheucticus ludovicianus	Rose-breasted Grosbeak
Passerina cyanea	Indigo Bunting
Cardinalis cardinalis	Northern Cardinal
Carpodacus purpureus	Purple Finch
Carpodacus mexicanus	House Finch
Carduelis tristis	American Goldfinch

* Observed at one or more 79th ARCOM facilities.

TABLE 12

MAMMALS OF EASTERN AND CENTRAL PENNSYLVANIA THAT MAY BE FOUND ON 79TH ARCOM SITES

Scientific Name	Common Name
Marsupialia	
Didelphidae	
Didelphis virginiana	Virginia Opossum
Insectivora	
Soricidae	
Sorex cinereus	Masked Shrew
Blarina brevicauda	Short-tailed Shrew
Sorex palustris	Water Shrew
Sorex fumeus	Smokey Shrew
Sorex dispar	Long-tailed Shrew
Sorex hoyi	Pygmy Shrew
Cryptotis parva	Least Shrew
Talpidae	
Scalopus aquaticus	Eastern Mole
Condylura cristata	Star-nosed Mole
Chiroptera	
Vespertilionidae	
Myotis lucifugus	Little Bornw Myotis
Myotis keenii	Keen's Myotis
Myotis leibii	Small-footed Myotis
Pipistrellus subflavus	Eastern Pipistrelle
Eptesicus fuscus	Big Brown Bat
Lagomorpha	
Leporidae	
Sylvilagus floridanus	Eastern Cottontail
Rodentia	
Sciuridae	
Tamias striatus	Eastern Chipmunk
Marmota monax	Woodchuck

TABLE 13
EXISTING COMMUNITY INVOLVEMENT PROGRAMS

INSTALLATION	TYPE OF PROGRAMS HOSTED AT INSTALLATIONS
Bellefonte	Penn DOT
Bethlehem	Pennsylvania State Police Training
Bristol	Vitenam Veterans Cheerleading Groups Civil Air Patrol
Edgemont	Civil Air Patrol Red Cross Blood Drive Pennsylvania State Police use of drill hall Union meetings
Germantown	Community groups
Horsham	Young Marines
Lancaster	Commercial truck drivers license testing Lancaster City Police training
Lewisburg	Scouts Easter Egg Hunt
Lewiston	VFW/American Legion
Lock Haven	Fire Department use of parking lot for demonstrations
Marcus Hook	Boating Rergatta "Bless the Fleet" Fireworks
Norristown	State Police
Reading	Defense Logistics Agency meetings Reserve Officer's Association meetings. Commercial truck drivers license testing
Scranton	Civil Air Patrol Penn DOT classes
State College	Pennsylvania State Police use of buildings Eye testing for the elderly (on and off) IRS help station for elderly on taxes Special Olympics at Penn State University Reserve speaker at scout meetings Provide generators to scouts of prison
Williamsport	Community meetings County Police training courses Special Olympics activities
Woodhaven	Voting center Philadelphia Police Boy Scouts
Worcester	State Police defensive training
York	Mason Drill Team practice in drill hall

RADON PROGRAM COMPLIANCE
GERMANTOWN USARC

1. RADON PROGRAM OVERVIEW

Radon is a naturally occurring, colorless, odorless, and radioactive gas released by the natural degradation of uranium. Radon can be found in high concentrations in soils and rocks containing uranium, shale, granite, and phosphate. High concentrations of uranium in the soil is the primary source of elevated radon levels indoors. Radon becomes a health hazard when it concentrates inside enclosed or poorly ventilated areas. Radon gas can enter buildings through cracks in floors, floor drains, sumps, and other tiny cracks in hollow block walls. Elevated levels of radon are considered a health hazard due to the increased chances of developing lung cancer.

The primary objectives of the Army Radon Program are to:

- Implement the Army Radon Assessment Plan;
- Identify all structures with indoor radon levels greater than four picocuries per liter (pCi/l) and modify these structures to reduce levels to four pCi/l or less; and
- Implement the Army Radon Mitigation Plan with a specified action plan for completion of mitigation based on radon levels.

2. APPLICABILITY OF REGULATORY REQUIREMENTS

There are no federal regulations relating to radon. Based on information currently available, EPA believes that a safe indoor radon concentration level is four pCi/l. The Commonwealth of Pennsylvania and the Army have adopted a safe action level of four pCi/l. The Army requires mitigation for radon levels that exceed four pCi/l (Table 1).

3. RESPONSIBILITIES

The installation responsibilities include the following:

- Funding, executing, documenting, and managing the radon monitoring and mitigation efforts;

- Purchasing radon detectors and shipping detectors back to laboratory for analytical services;

- Ensuring that "spike" samples are analyzed;

- Maintaining radon results and summarizing those results for the 79th ARCOM;

- Completion of radon measurements by 4th quarter fiscal year (FY) 1991;

- Notifying occupants of the results of radon testing and what action, if any, is required; and

- Establishing an archival database compatible with Army systems for storing all measurement data.

4. COMPLIANCE SUMMARY

ECAAR Status: There were no Class I, II and III findings.

Surveys: The survey conducted on 25 February 1994 indicated that the radon concentrations were below 4 pCi/l.

Recordkeeping: Data was unavailable.

Reporting: Data was unavailable.

Mitigation: The Germantown USARC required no mitigation since the testing results indicated that the radon concentration was less than 4 pCi/l.

TABLE 1. RADON MITIGATION TIME REQUIREMENTS

Radon Concentration (pCi/l)	Mitigation Time Requirements
>200	One month or move occupants
20-200	Six months
8-20	One to four years, depending on level of radon
4-8	Five years
<4	No action required

DEPARTMENT OF THE ARMY
HEADQUARTERS, US ARMY GARRISON
FORT INDIANTOWN GAP
ANNVILLE, PENNSYLVANIA 17003-5011

REPLY TO
ATTENTION OF

AFZS-FIG-EH-E (200-1a) 28 February 1994

MEMORANDUM FOR Commander, 79th ARCOM, ATTN: AFRC-APA-EN (Mrs. Mary Heinert), Wurts Memorial USARC, NAS, Willow Grove, Pennsylvania 19090-5110

SUBJECT: Radon Testing Results

1. Results of radon testing at USARC's are enclosed.

2. Post mitigation testing performed at USARCs where radon reduction systems were installed indicate that radon is now at acceptable levels, below 4pCi/L. These centers are:

a. CSM S.P. Serrenti Memorial USARC

b. Lycoming Memorial USARC

c. Robert E. Roeder USARC

d. York Memorial USARC

e. Bellefonte USARC

f. Lewisburg USARC

No further action is required at these USARCs.

3. The following USARCs have levels above 4pCi/L; and in accordance with Army guidance, radon mitigation should be planned within the next five (5) years:

a. Centre County Memorial USARC

b. Willow Grove USARC

c. Wilkes-Barre USARC

d. Bethlehem USARC

e. Bloomsburg USARC

f. Chambersburg USARC

g. Greencastle AMSA

h. Greencastle USARC

i. Huntingdon USARC

j. Lancaster USARC

4. Other USARCs have radon levels below 4pCi/L which are acceptable, based on Environmental Protection Agency and Army guidance.

5. Point of contact at Fort Indiantown Gap is Mr. Kenneth L. Malick, DSN 491-2634, or COMM (717) 861-2634.

Encl

Donald G. LaRocque
Director of Engineering
and Housing

CF: CDR, FTIG, ATTN: AFZS-FIG-EH-E (Mr. Harry Blecker)

AFZS-FIG-EH-E (200-1a) 25 February 1994

MEMORANDUM FOR RECORD

SUBJECT: Radon Testing Results

1. The results of the recent radon testing at Various USARCs are as follows:

a. Ashley USARC:

(1) Room 32, results 1.2.

(2) Room 27, results 0.8.

(3) Room 27, results 0.9.

(4) Room 4, results 0.5.

(5) Drill Hall, results 1.2.

(6) OMS, results 0.7.

b. Bellefonte USARC:

(1) Boiler Room, results 0.7**.

(2) OMS, results 1.4**.

(3) Room 105, results 1.5**.

c. Bethlehem USARC:

(1) Boiler Room, results 0.9.

(2) Room 101B, results 9.5*.

(3) Room 101B (duplicate), results 10.7*.

(4) Supply Room, results 2.5.

(5) OMS, results 1.8.

d. Bloomsburg USARC:

(1) Classroom East, results 2.9.

(2) OMS, results 1.4.

(3) Room 100, results 4.2*.

e. Bristol USARC:

(1) Kitchen, results 0.5.

(2) Room 342, results 1.1.

(3) Room 343, results 0.1.

f. Chambersburg USARC:

(1) Classroom 1, results 3.6.

(2) Room 2, results 3.9.

(3) Supply Room, results 8.3*.

(4) Motor Pool, results 1.3.

g. Chester USARC:

(1) Boiler Room, results 0.5.

(2) Kitchen, results 0.8.

(3) Room 100, results 1.2.

(4) Room 100 (duplicate), results 1.0.

h. Clinton County USARC:

(1) Mr. Kreisher's Office, results 0.7.

(2) Room 15, results 1.6.

(3) Room 2, results 1.3.

(4) Room 24, results 1.5.

(5) Room 8, results 2.5.

i. Downingtown USARC:

(1) Room 1, results 0.8.

(2) Room 1, results 0.8.

j. Edgemont USARC:

(1) Com C, results 0.4.

(2) Com B, results 0.4.

k. Folsom USARC:

(1) Drill Hall, results 0.9.

(2) Room 107, results 0.9.

(3) Room 111, results 1.2.

(4) Room 116, results 1.1.

(5) Room 313, results 1.2.

(6) Room 109, results 0.9.

(7) Room 110, results 1.1.

(8) Room 121, results 2.5.

(9) Supply Area, results 1.2.

l. Germantown USARC:

(1) Room 102, results 0.6.

(2) Motor Pool, results 0.2.

(3) Room 112, results 1.5.

(4) Room 126, results 1.5.

(5) Room 129, results 0.6.

m. Gettysburg USARC:

(1) Room 112, results 1.4.

(2) Supply Room, results 1.6.

(3) Supply Room Office, results 1.8.

n. Greencastle AMSA:

(1) Shop, North Wall, results 1.2.

(2) Shop, Bulletin Board, results 5.5*.

(3) Supply Room, results 1.3.

o. Greencastle USARC:

(1) Messhall, results 4.1*.

(2) Motor Pool, results 1.1.

(3) Supply Room, results 1.8.

p. Harrisburg AFRC:

(1) Room 101, results 1.1.

(2) Room 106, results 0.9.

(3) Room 113, results 1.6.

(4) Room 117, results 1.1.

(5) Boiler Room, results 2.2.

q. Horsham Memorial USARC:

(1) Room 101, results 1.2.

(2) Room 101 (duplicate), results 1.0.

(3) Room 116, results 1.1.

(4) Room 103, results 1.3.

r. Horsham USARC #2:

(1) Conference Room, results 0.7.

(2) S4 Office, results 0.8.

(3) SGM Office, results 0.6.

s. Huntingdon USARC:

(1) Divider, Bulletin Board, results 5.4*.

(2) Drill Hall, results 3.2.

t. King of Prussia USARC:

(1) Supply Room, results 0.1.

(2) Rear of Motor Pool, results 0.4.

(3) Center Room, results 0.1.

(4) Classroom, results 0.3.

(5) SSA Office, results 0.1.

u. Lancaster USARC:

(1) Boiler Room, results 0.7.

(2) Room 114, results 2.2.

(3) Room 127, results 1.6.

(4) Room 131, results 3.3.

(5) Room 149, results 2.2.

(6) Room 2, results 7.2*.

v. Lewisburg USARC:

(1) Boiler Room, results 0.3**.

(2) Rifle Range, results 1.0**.

(3) Room 101, results 0.5**.

(4) Room 101 (duplicate), results 0.3**.

w. Lock Haven AMSA Tool Room, 1.5.

x. Mifflin County Veteran's USARC:

(1) OMS, results 3.4.

(2) Room 119, results 3.6.

(3) Room 19, results 1.5.

(4) Room 23, results 2.1.

y. Marcus Hook AMSA:

(1) Boiler Room, results 0.3.

(2) Bulletin Board, results 0.1.

(3) Office, results 0.3.

z. North Penn USARC:

(1) Boiler Room, results 2.4.

(2) OMS, results 0.8.

(3) Room 105A, results 0.2.

AFZS-FIG-EH-E
SUBJECT: Radon Testing Results

(4) Room 117G, results 2.9.

(5) Room 119, results 1.5.

* = Requires mitigation in accordance with AR 200-1.

** = Levels after post mitigation.

2. I have enclosed a copy of the remedial action timeframe required by AR 200-1 to mitigate any building above the maximum 4pCi/L level.

3. Point of contact at Fort Indiantown Gap is the undersigned, DSN 491-2634 or COMM (717) 861-2634.

Jennifer Houde
Environmental Protection
Assistant

CF:
CDR, 10th MTN DIV, ATTN: AFZS-JA (Mrs. M. Altiere)

1989-1990

IT NO.	SERIAL NUMBER	USARC	RECOMMENDED LOCATION	ACTUAL LOCATION	RESULTS
121	2094034 MPU	West Hazleton	Center	Administration Room # 101	0.3 pCi/l
122	2073827 HRQ	"	Optional	Drill Hall Room # 119	0.3 pCi/l
123	2093464 EBC	Wilkes-Barre	OMS	OMS	2.5 pCi/l
124	2096960 PFF	"	Center-Boiler Room	Boiler Room # 111	4.3 pCi/l
125	2097078 LJE	"	Center-First Floor	Admin. Office # 102	1.5 pCi/l
126	2097121 ZHR	"	Center-Second Floor	Admin. Office # 202	1.0 pCi/l
127	2073544 SKE	"	Optional	Drill Hall # 108	0.4 pCi/l
128	2086177 TOI	Williamsport	OMS	Maintenance Building, Center, 12' up on Pole	2.1 pCi/l
129	2097319 IHP	"	Center-Boiler Room	Room # 120 Near Electrical Box	1.1 pCi/l
130	2096650 HMH	"	Center-First Floor	Room # 101, Window 327th S+S Bn.	14.0 pCi/l
131	2096253 ILL	"	Center-Second Floor	Window, Room # 213, 986th Maint. Bn.	2.1 pCi/l
132	2093850 NYA	"	Optional	Window, Room 102 327th S+S Bn	8.7 pCi/l
133	2093555 WVJ	Woodlawn	Boiler Room	BOILER-NEAR TUNNEL	3.5 pCi/l
134	2095192 YFI	"	Center	CENTER-HALLWAY	0.3 pCi/l
135	2094047 GEH	"	Center	S-3 AREA-ADJ. BATHROOM	7.2 pCi/l
136	2093392 LYF	"	Center	S-1 AREA	0.4 pCi/l
137	2093951 YKN	"	Optional	AVIATION S-1	0.4 pCi/l
138	2096632 FJI	Wingohocking	Room 106	BASEMENT-BACK ROOM	0.3 pCi/l
139	2086366 DTT	"	Room 114	972 ND - ORDERLY ROOM	0.5 pCi/l
140	2093964 ZQR	"	Room 117	"E" CO 315TH NEXT TO STAIR ROOM	
141	2113280 IMR	"	Optional	MOTOR POOL GARAGE	1.0 pCi/l
142	2096274 UIH	"	Optional	"E" CO 315TH ORDERLY ROOM	
143	2096642 OHU	"	Optional	"C" BTRY 3/42 FA ORDERLY ROOM	
144	2094620 QZJ	"	Optional	"A" BTRY 3/42 FA ORDERLY ROOM	1.1 pCi/l
145	2064888 MPI	Germantown Wissahickon	OMS	MAINTANCE SECTION	0.3 pCi/l
146	2097365 ATR	"	Boiler Room	BOILER RM	1.1 pCi/l
147	2084014 SKG	"	Center	RM 106 (FILE)	3.3 pCi/l
148	2097262 HUP	"	Center	RM 122	0.3 pCi/l
149	2094586 XZT	"	Center	RM 109	8.4 pCi/l
150	2094464 VPF	"	Center	RM 101	1.1 pCi/l

60957.76

Remedial Action Completion Report
Germantown United States Army Reserve Center
5200 Wissahickon Avenue
Philadelphia, Pennsylvania

Contract No. DAC31-94-D-0025, D.O. No. 0150

Prepared for

Department of the Army
U.S. Army Corp of Engineers-Baltimore District
Engineering Division-HTRW Branch
10 South Howard Street
Baltimore, Maryland 21201

Prepared by

EA Engineering, Science, and Technology
15 Loveton Circle
Sparks, Maryland 21152
410-771-4950

April 2002

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LIST OF ACRONYMS AND ABBREVIATIONS

amsl	Above Mean Sea Level
AOC	Area(s) of Concern
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
°C	Degrees Celsius
cm	Centimeter(s)
COC	Chain-of-Custody
COPC	Constituent(s) of Potential Concern
DO	Dissolved Oxygen
DOT	Department of Transportation
EA	EA Engineering, Science, and Technology, Inc.
EDD	Electronic Data Deliverables
EP	Extraction Procedure
ESA	Environmental Site Assessment
ft	Foot/Feet
gal	Gallon(s)
hr	Hour(s)
HSA	Hollow Stem Auger
HTRW	Hazardous, Toxic, and Radioactive Waste
ID	Identification
IDW	Investigation-Derived Waste
in.	Inch(es)
kg	Kilogram(s)
L	Liter(s)
m	Meter(s)
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg	Milligram(s)
min	Minute(s)
MSC	Medium-Specific Concentration
MSL	Mean Sea Level
mV	Millivolt(s)

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

OD	Outside Diameter
PADEP	Pennsylvania Department of Environmental Protection
PAH	Polycyclic Aromatic Hydrocarbons
PID	Photoionization Detector
POC	Point of Compliance
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
SHERP	Safety, Health, and Emergency Response Plan
SHS	Statewide Health Standard(s)
SI	Site Inspections
SVOC	Semivolatile Organic Compound(s)
TAL	Target Analyte List
TDS	Total Dissolved Solids
TOC	Top of Casing
TPH	Total Petroleum Hydrocarbons
µg	Microgram(s)
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound(s)
yr	Year(s)

EXECUTIVE SUMMARY

EA Engineering, Science and Technology, Inc. has been contracted by the U.S. Army Corps of Engineers (USACE) Baltimore District to conduct a remedial investigation at the Germantown United States Army Reserve Center (USARC), Philadelphia, Pennsylvania.

The Germantown USARC is located at 5200 Wissahickon Avenue within an urban area of Philadelphia, Pennsylvania and is currently utilized by the U.S. Army as a reserve training center. The site is currently improved with two buildings (Main Building and Motor Vehicle Storage Building) which are surrounded by asphalt covered parking and landscaped areas. In November 1992, due to a suspected leak, one 1,500-gal fuel oil underground storage tank (UST) was removed from the exterior of the Motor Vehicle Storage Building. Petroleum-impacted soil in the former tank area was removed circa 1993 (based on visual observations). During a subsequent site characterization investigation performed in 1995, light non-aqueous phase liquids (LNAPL) were reported in two groundwater monitoring wells (MW-1 and MW-3), and elevated concentrations of fuel oil constituents (benzene and naphthalene) were reported in groundwater. In 1999 and 2000, EA performed three additional quarterly groundwater monitoring events. During each sampling event, LNAPL was observed to be present, at thickness ranging from 0.15 ft to 1.49 ft in groundwater monitoring wells MW-1 and MW-3.

The objective of this investigation was to obtain sufficient information to characterize and document site conditions in order to allow for regulatory closure, as appropriate. In accordance with the Pennsylvania Department of Environmental Protection (PADEP) Environmental Cleanup Program, Storage Tank Section, regulatory closure is achieved, in part, by completing a comprehensive site characterization phase and documenting in a Remedial Action Completion Report that compliance with applicable State Health Standards (SHS) have been attained. This Remedial Action Completion Report summarizes the historic UST and soil removal effort, previous subsurface investigation results, and details investigative and remedial activities performed by EA from September 2000 to February 2002.

Field activities conducted as part of this investigation included the advancement of 13 soil borings, installation of 3 monitoring wells, *in situ* hydraulic conductivity (slug) testing, passive and active LNAPL recovery, and the completion of four quarterly groundwater monitoring events.

SOIL

Eighteen soil samples were collected during the September 1995 soil investigation; twelve soil samples were collected during the EA investigation. Soil samples collected during the 1995 investigation were submitted for benzene, toluene, ethylbenzene, and xylene (BTEX), naphthalene, fluorene, and phenanthrene; soil samples collected during the October 2000 investigation were submitted for laboratory analysis of BTEX, cumene, naphthalene, fluorene, and phenanthrene (PADEP parameters for #2 fuel oil USTs). During each sampling event, soil samples were collected from in and surrounding the former UST excavation. Sample locations conducted as part of this investigations were selected during the site visit with USACE and PADEP in August 2000.

One soil sample (EA-8) collected from the former UST excavation area exhibited a concentration of naphthalene (35,000 mg/kg) above the applicable PADEP residential SHS of 25,000 mg/kg (soil to groundwater standard). None of the remaining 29 soil samples (97%) exhibited concentrations of naphthalene or the remaining PADEP #2 fuel oil parameters above the applicable SHS.

The soil sample exhibiting the slightly elevated naphthalene concentrations was collected from the base of the former UST excavation, from an approximate one foot black stained layer, situated at a depth of approximately 23 to 24 ft below grade. Field screening and laboratory analysis of soil situated at shallower depths within this boring, or at similar depths in borings surrounding EA-8, did not exhibit concentrations of naphthalene above the applicable PADEP SHS. Furthermore, the concentrations of naphthalene in groundwater samples (situated at a depth of approximately 28 feet) collected from the monitoring well which was installed in boring EA-8 (MW-11) were consistently below the applicable PADEP SHS (100 ug/l), ranging from non-detectable concentrations to 2.65 ug/l. Based on the results of this and prior environmental investigations, the naphthalene-impacted soil appears to be localized to immediate vicinity of boring EA-8, at an approximate depth of 23 to 24 ft below grade, and does not appear to have impacted groundwater in this area.

GROUNDWATER

Three monitoring wells (MW-10, MW-11, and MW-12) were installed at the site in October 2000. MW-10 was installed to supplement the existing nine groundwater monitoring wells and provide groundwater data downgradient of the former UST; MW-11 and MW-12 were installed to replace MW-2 and MW-3, which were screened below the groundwater interface. Since

RW-1 is situated adjacent to MW-1 (also screened below the groundwater table), an additional well was not installed to replace MW-1.

In total, eight groundwater sampling events have been performed at the site. During each event, groundwater was sampled and submitted for laboratory analysis of the required PADEP parameters for #2 fuel oil USTs. With the exception of benzene and naphthalene (identified at concentrations in excess the applicable SHS in MW-3 in 1995), none of the required analytes were identified in groundwater samples at concentrations above the applicable SHS.

Further, as required by PADEP, and in accordance with Act 2, EA performed a time-trend analysis using *Quick Domenico.xls* (QD) to evaluate the dissolved-phase plume stability and the potential for the dissolved phase plume to migrate offsite in the future. As expected given the low to non-detectable concentrations of #2 fuel oil constituents in groundwater, results of the QD analysis indicate that the dissolved-phase petroleum constituents will not migrate beyond the downgradient property boundary within 30 years.

LNAPL

In October 2000, LNAPL was present in MW-1 (1.49 ft) and MW-3 (0.15 ft). In an effort to mitigate the LNAPL present in MW-1 and MW-3, EA performed passive and active LNAPL recovery efforts from October 2000 to November 2001, and LNAPL gauging in December 2001 and February 2002. In total, approximately 8 gallons LNAPL and 1,400 gallons of groundwater were recovered using absorbent socks and pumping. Further, results of the most recent gauging of monitoring wells MW-1 and MW-3 have shown no occurrence of LNAPL in either well.

CONCLUSIONS

Based on the results of prior site investigations, and the results collected by EA during the September 2000 to February 2002 site characterization/remedial action effort, site conditions appear to support a demonstration of attainment for soil and groundwater at the site. Therefore, EA requests that PADEP issue closure of the UST case file for the site.

Specifically, the source of the impact (UST, associated petroleum impacted soil and LNAPL) appear to have removed, detected residual concentrations of petroleum constituents in soil are well below the applicable SHS or appear localized in nature, and no concentrations of PADEP #2 fuel oil parameters have been reported above the applicable SHS in groundwater in the last seven quarterly sampling events, and analysis of the plume using QD indicates that the dissolved-phase constituents will not migrate beyond the downgradient property boundary within 30 years.

1.0 INTRODUCTION

EA Engineering, Science and Technology, Inc. has been contracted by the U.S. Army Corps of Engineers (USACE) Baltimore District, under Contract No. DACA31-94-D-0025, Delivery Order No. 0150, to conduct a remedial investigation at the Germantown United States Army Reserve Center (USARC), Philadelphia, Pennsylvania. Site information contained herein is based on information gathered from field investigations conducted as part of the this project, quarterly groundwater monitoring performed by EA in 1999 and 2000, and from previous investigation reports provided to EA by the USACE–Baltimore District and the 99th Regional Support Command (RSC) Engineers.

The Germantown USARC is located at 5200 Wissahickon Avenue in Philadelphia, Pennsylvania. The site is located within an urban area of Philadelphia, Pennsylvania and is currently utilized by the U.S. Army as a reserve training center. The site is currently improved with two buildings (Main Building and Motor Vehicle Storage Building) which are surrounded by asphalt covered parking areas and landscaping. Surrounding properties a combination of residential and commercial properties. A location map of the Germantown USARC is presented in Figure 1-1.

In November 1992, due to a suspected leak, one 1,500-gal fuel oil underground storage tank (UST) was removed from the exterior southwestern corner of the Motor Vehicle Storage Building. Site characterization activities conducted from 1993 to May 2000 (and documented in Section 2 of this report) reported the onsite presence of soil and groundwater contamination associated with this UST.

1.1 PURPOSE AND SCOPE

The objective of this investigation was to obtain sufficient information to adequately characterize the site and identify additional remedial actions and/or investigations required to support regulatory closure of the UST site in accordance with Pennsylvania Department of Environmental Protection (PADEP) guidelines. This Remedial Action Completion Report provides a synopsis of the historic UST and soil removal effort, synopsis of investigations performed by Environmental Preservation Associates, Inc. (EPAI), USACE, and EA, and a demonstration of attainment of the Statewide Health Standards (SHS) for soil and groundwater at the site in accordance with Act 2.

Project activities conducted as part of this investigation were performed in accordance with the *Remedial Action Plan for the Germantown United States Army Reserve Center, Philadelphia, PA* (EA 2000a). The *Remedial Action Plan* was verbally approved by Mr. Bruce McClain of the PADEP Storage Tank Section on 11 September 2000.

Field activities conducted for this investigation included the advancement of soil borings, installation of monitoring wells, *in situ* hydraulic conductivity testing, quarterly groundwater sampling, and passive and active light non-aqueous phase liquid (LNAPL) recovery.

1.2 REPORT ORGANIZATION

This report was developed to detail project activities that will satisfy the objectives set forth within the workplan, and is organized as follows:

- **Chapter 1 – Introduction**.
- **Chapter 2 – Site Background.**
- **Chapter 3 – Remedial Action Methods**: Details site activities performed by EA, including, description of soil boring and advancement, monitoring well installation and development, sample handling/chain of custody, quality assurance/quality control, aquifer testing and groundwater flow rate, and decontamination and investigation-derived material (IDM) handling procedures.
- **Chapter 4 – Evaluation and Presentation of Results**: Discusses subsurface conditions including the geology and hydrogeology, and soil and groundwater sampling results.
- **Chapter 5 – Demonstration of Attainment:** Provides an overview of the current regulatory case status, and a comparison of the existing soil and groundwater data to the current regulatory standard. Additionally, Chapter 5 presents a brief description of the remedial methodology implemented at the site, and provides documentation that the current and historic remedial actions fulfill the attainment requirements of the SHS.
- **Chapter 6 – Summary and Conclusions.**
- **Appendices A through G**– The appendices include the soil boring logs, groundwater monitoring well completion diagrams, groundwater monitoring well development and sampling information, slug test data; laboratory analytical reports; and Quick Domenico spreadsheets.

2.0 SITE BACKGROUND

2.1 SITE LOCATION AND SETTING

The Germantown USARC is located within an urban area of Philadelphia, Pennsylvania and is currently utilized by the U.S. Army as a reserve training center. The site is currently improved with two structures (Main Building and Motor Vehicle Storage Building), asphalt parking and landscaped areas. Surrounding properties include private residences to the northeast, a railroad right-of-way to the west, and a multi-story office building to the south. Further, a utility corridor transects the site. The site and surrounding facilities are serviced by municipal water and sewer. Further, based on visual observations and a review of the USGS topographic map, no surface water bodies, are located on or in the immediate area of the site. A site plan is included as Figure 2-1.

The Germantown USARC site is situated at an elevation of approximately 207 feet above mean sea level (amsl). The site is relatively flat, sloping slightly to the west for a distance of about 100 ft, where a more moderate slope begins. Surface drainage appears to follow site topography and/or is directed to the local storm sewer system.

The site is located within the Piedmont physiographic province, composed of metamorphosed sedimentary rocks of the lower Paleozoic Period. In general, overburden consists of grayish green or orange brown silty clay, underlain by a grayish green silty sand to depths of approximately 30 to 35 ft below grade (bedrock). Bedrock, classified as the Wissahickon Formation, consists of weathered mica schist. Groundwater is situated at depths ranging from 27 to 30 ft below grade and surveyed to flow in a west/southwesterly direction. The nearest stream, Wissahickon Creek, is located approximately one mile west of the site.

2.2 SITE HISTORY

No UST closure records documenting the integrity of the UST system and/or soil and groundwater quality at the time of the UST removal have been identified at either the PADEP Regional Office or from the USACE–Baltimore District. However, EA was provided with copies of the following documents:

- Walbert Contracting Service tank disposal receipt, dated 06 November 1992
- March 1993 *UST Remedial Investigation Letter Report* prepared by EPAI

- December 1995, *Pre-Draft Site Characterization Report #2 Heating Oil Release Germantown U.S. Army Reserve Center* prepared by the Engineering Division U.S. Army Engineer District, Baltimore.

The former 1,500-gal UST was constructed of steel and was situated on a concrete pad at a depth of approximately 10 ft below grade. The UST was located on the southwestern corner of the Motor Vehicle Storage Building, and was removed from the site in November 1992 due to a suspect leak (EPAI 1993).

EPAI, 1993 to 1995

In 1993, under the supervision of EPAI, nine soil borings (B1 to B9) were advanced around the former UST excavation at depths ranging from 22 to 36 ft below grade. Soil samples were collected from each boring and submitted for laboratory analysis of total petroleum hydrocarbons (TPH). Results indicated TPH soil concentrations up to 28,000 mg/kg. The highest soil TPH concentrations were identified south of the former UST excavation, in borings B1, B2, B8, and B9, at depths of 10 to 30 ft below grade. No detectable concentrations of TPH were reported in soil collected from borings advanced north and west of the UST excavation. Soil boring locations from the EPAI investigation are illustrated in Figure 2-2.

EPAI recommended the installation of three groundwater monitoring wells and the removal of impacted soil south of the former UST excavation. The recommend volume of soil to be removed was 22 ft by 15 ft by 20 ft deep. Current site conditions indicate that these recommendations were implemented, considering that three monitoring wells (MW-1, MW-2, and MW-3) were installed along the perimeter of the former UST, and an asphalt patch 22 ft by 15 ft is located south of the former UST location. It should be noted that no well construction diagrams are known to exist for MW-1, MW-2, and MW-3, and that the screen intervals of these wells were below the water table elevation based on gauging data obtained by the USACE in April 1995.

USACE, 1995

In April 1995, under the supervision of USACE, MW-1, MW-2, and MW-3 were redeveloped, during which time LNAPL was identified in MW-1 and a petroleum odor was observed in MW-3 (USACE 1995). The LNAPL was characterized as diesel-range organics indicative of #2 heating oil. One 6-in. recovery well (RW-1) was installed adjacent to MW-1 for LNAPL recovery in July 1995. No LNAPL was observed in RW-1 during initial or subsequent gauging events.

In August 1995, 11 soil borings, five of which were completed as groundwater monitoring wells, were advanced in and around the former UST and soil excavation area. Soil borings were designated SB1 through SB4, and those completed as groundwater monitoring wells were designated MW-4 through MW-8. In addition to the 11 soil borings, two rock core borings (RB-1 and RB-2) were also completed.

Two soil samples were collected from borings SB-1 through SB-4 and MW-4 through MW-8, and submitted for laboratory analysis of BTEX by U.S. Environmental Protection Agency (USEPA) Method 8020, TPH-diesel-range organics (TPH-DRO) by the USEPA Method 8100M, and polycyclic aromatic hydrocarbons (PAHs) by USEPA Method 8310.

A summary of the soil samples collected, corresponding sample depth, and laboratory analytical results is presented in Table 2-1. No laboratory analytical results exceeded the applicable PADEP SHS for soil.[1]

In September 1995, groundwater monitoring wells were gauged for LNAPL and groundwater samples were collected from the eight monitoring wells and one recovery well and submitted for laboratory analysis of BTEX, TPH-DRO, and PAHs. A summary of the groundwater laboratory analytical results is presented in Table 2-2. Results indicated dissolved-phase benzene, PAHs, and TPH-DRO in MW-1 and MW-3; however, measurable LNAPL thicknesses were also identified in MW-1 and MW-3 prior to sampling. No detectable concentrations of BTEX, PAHs, or TPH-DRO and no discernable LNAPL thicknesses were reported in the remaining groundwater monitoring wells.

EA, 1999 to 2000

In 1999, EA was contracted by USACE Baltimore District to conduct quarterly groundwater sampling to assess groundwater quality. Groundwater sampling was conducted in November 1999, February 2000, and May 2000 (EA 2000cde).

During each sampling round, monitoring wells (MW-1 through MW-8 and RW-1) were screened for the presence of LNAPL: results indicated the repeated occurrence of LNAPL in MW-1 and MW-3 at thicknesses up to 1.3 ft.

1 Analytical results for soil were compared to PADEP SHS direct contact numeric values for residential soil (0 to 15 feet) and the soil to groundwater numeric values for a "used aquifer" in a residential setting, where the total dissolved solids (TDS) are less than 2,500. Groundwater analytical results were compared to values for a "used aquifer" in a residential setting, where the TDS were less than 2,500.

Following gauging, groundwater was collected from monitoring wells RW-1, MW-2, and MW-4 through MW-8 and submitted for laboratory analysis of BTEX, naphthalene, and cumene by USEPA Method 8260 and fluorene and phenanthrene by USEPA Method 8270. Analytical results are summarized in Table 2-2. Groundwater monitoring wells MW-1 and MW-3 were not sampled since LNAPL was observed in each.

During each sampling event, none of the required analytes were identified in groundwater samples at concentrations above the applicable SHS.

On 25 May 2000, EA conducted an LNAPL bail-down test at MW-1 to screen LNAPL thickness and potential recovery volumes/rates. Initial gauging of MW-1 indicated 1.3 ft of LNAPL. After bailing approximately 2 gal of LNAPL, a LNAPL thickness of 0.4 ft was measured 4 hours later. These results suggested that the volume of LNAPL in the area of the well was limited since LNAPL did not readily flow back into the well within 4 hours. However, since these wells were screened below the water table, they likely did not represent the true LNAPL conditions in the former UST excavation area.

On 11 August 2000, during a site visit with USACE and PADEP personnel, one additional groundwater monitoring well, labeled MW-9, was observed at the site. This well was not identified in the previous investigation reports available for the site, not was it depicted on site figures, an no information is presented in the reports of previous investigations regarding the date of installation and construction details, or monitoring results associated with this well.[2]

Based on the results of the prior site investigations conducted by EPAI, USACE, and EA, during the fall of 2000, USACE-Baltimore District contracted EA to conduct a Remedial Action Investigation described herein in order to document site conditions and, if applicable, demonstrate attainment of soil and groundwater conditions to provide for PADEP site closure.

[2] Based on gauging activities conducted by EA during this investigation, MW-9 consists of a 4-in. ID PVC well with a total depth of 38.54 ft.

TABLE 2-1 SUMMARY OF SOIL ANALYTICAL RESULTS, SEPTEMBER 1995
GERMANTOWN U.S. ARMY RESERVE CENTER

Sample Designation	Depth (ft)	PID Reading (ppm)	Benzene (ug/kg)	Ethylbenzene (ug/kg)	Cumene (ug/kg)	Naphthalene (ug/kg)	Toluene (ug/kg)	Xylene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)
SHS**			**500**	**70,000**	**780,000**	**25,000**	**100,000**	**1,000,000**	**3,000,000**	**10,000,000**
SB-1	20-22	--	2.4 U	2.4 U	NA	30 U	72	32	490	30 U
SB-1	27-29	--	240 U	240 U	NA	2,600 D	4,900	12,000	810 D	2,500 D
SB-2	20-22	525	270 U	270 U	NA	2,000	3,200	4,1000	1,200	2,100
SB-2	27-29	0	20.00	12 U	NA	1,600	120	380	960	2,200
SB-2	20-22 DUP	525	260 U	260 U	NA	2,300	4,000	4,100	1,500	2,200
SB-3	10-12	--	2.4 U	2.4 U	NA	29 U	2.4 U	2.4 U	29 U	67
SB-3	27-29	--	2.9 U	2.9 U	NA	37 U	2.9 U	3.8	37 U	37 U
SB-4	25-27	190	12 U	12 U	NA	300 U	1.2 U	12 U	340	470
SB-4	27-29	6.1	2.4 U	2.4 U	NA	150 U	2.4 U	2.4 U	6.6 J	220
SB-4	25-27 DUP	190	14 U	14 U	NA	180 U	14 U	480	58 J	400
MW-4	15-17	0	2.4 U	2.4 U	NA	3,000 U	2.4 U	2.4 U	3,300	400
MW-4	27-29	0	2.3 U	2.3 U	NA	29 U	2.3 U	2.3 U	29 U	29 U
MW-5	15-17	2.5	2.2 U	2.2 U	NA	560 U	2.2 U	2.2 U	160 J	1,000
MW-5	27-29	0	2.3 U	2.3 U	NA	29 U	2.3 U	2.3 U	29 U	29 U
MW-6	15-17	1.1	2.4 U	2.4 U	NA	30 U	2.4 U	2.4 U	30 U	69
MW-6	27-29	18.9	2.2 U	2.2 U	NA	27 U	2.2 U	2.2 U	27 U	27 U
MW-7	15-17	0	2.2 U	2.2 U	NA	28 U	2.2 U	2.2 U	28 U	28 U
MW-7	27-29	0	2.2 U	2.2 U	NA	27 U	2.2 U	2.2 U	27 U	27 U
MW-7	15-17 DUP	0	2.2 U	2.2 U	NA	27 U	2.2 U	2.2 U	27 U	27 U
MW-8	15-17	0	2.7 U	2.7 U	NA	34 U	2.7 U	2.7 U	340 U	340 U
MW-8	27-29	17	2.2 U	2.2 U	NA	28 U	2.2 U	2.2 U	28 U	28 U
MW-8	15-17 DUP	0	2.4 U	2.4 U	NA	27 U	2.4 U	2.4 U	53	30 U

SUPERSCRIPTS:

** = Statewide Health Standards (SHS) medium-specific concentrations for regulated substances in soil for residential used aquifers with a TDS<2500, 11/24/01.

QUALIFIERS:

B = Found in blank.
D = Diluted.
J = Estimated value.
NA = Not analyzed.
U = Not detected.

TABLE 2-2 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS, OCTOBER 1995 TO MAY 2000
GERMANTOWN U.S. ARMY RESERVE CENTER

Well Designation	Date	Benzene µg/l	Ethylbenzene µg/l	Cumene µg/l	Naphthalene µg/l	Toluene µg/l	Xylene µg/l	Fluorene µg/l	Phenanthrene µg/l	TPH µg/l
SHS		**5**	**700**	**1,100**	**100**	**1,000**	**10,000**	**1,500**	**1,100**	**NA**
MW-1	10/17/95	4	67	NA	**37**	13	86	21	49 J	90,000
	11/23/99	NS	NS	NS	NS	NS	NS	NS	NS	
	2/22/00	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/00	NS	NS	NS	NS	NS	NS	NS	NS	
MW-2	10/17/95	2 U	2 U	NA	10	2 U	2 U	2.1 U	0.019 J	150
	11/23/99	1 U	1 U	1 U	1	1 U	1 U	10 U	10 U	
	2/22/00	1 U	1 U	1 U	0.8	1 U	1 U	10 U	10 U	
	5/25/00	1 U	1 U	1 U	1	1 U	1 U	10 U	10 U	
MW-3	10/17/95	**6.9**	65	NA	**460 J**	2	120	200 J	650	200,000
	11/23/99	NS	NS	NS	NS	NS	NS	NS	NS	
	2/22/00	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/00	NS	NS	NS	NS	NS	NS	NS	NS	
MW-4	10/17/95	2 U	2 U	NA	10 U	2 U	2 U	2.1 U	0.72 J	270
	11/23/99	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
	2/22/00	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
	5/25/00	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
MW-5	10/17/95	2 U	2 U	NA	10 U	2 U	2 U	2.1 U	6.4 U	310
	11/23/99	1 U	1 U	1	0.4 J	1 U	1 U	10 U	10 U	
	2/22/00	3	3	1	0.9 J	23	17	10 U	10 U	
	5/25/00	5	1 U	1	1 U	3	1 U	10 U	10 U	
MW-6	10/17/95	2 U	2 U	NA	10 U	2 U	2 U	2.1 U	6.4 U	630
	11/23/99	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
	2/22/00	1 U	1 U	1 U	1 U	0.5	1 U	10 U	10 U	
	5/25/00	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
MW-7	10/17/95	2 U	2 U	NA	10 U	2 U	2 U	2.1 U	6.4 U	320
	11/23/99	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
	2/22/00	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
	5/25/00	5	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
MW-8	10/17/95	2 U	2 U	NA	10 U	2 U	2 U	2.1 U	6.4 U	490
	11/23/99	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
	2/22/00	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	
	5/25/00	1 U	1 U	1 U	1 U	2 U	1 U	10 U	10 U	
RW-01	10/17/95									680
	11/23/99	1 U	1 U	1 U	0.9 J	2 U	0.5 J	4 J	2 J	
	2/22/00	5	3	3	43 D	0.9 J	24	1 J	4 J	
	5/25/00	3	1 U	1 U	2 U	2 U	0.5 J	10	10 U	

SUPERSCRIPTS:

** = Statewide Health Standards (SHS) medium-specific concentrations for regulated substances in groundwater for residential used aquifers with a TDS<2500, 11/24/01.

QUALIFIERS:

NS = Not sampled due to the presence of LNAPL.
U = Under Detection Limit
J = Laboratory Estimated Value
D = Concentration Reported from secondary dilution analysis
Shaded and bold cells indicate an exceedence of the applicable SHS
Blank cells indicate well not sampled

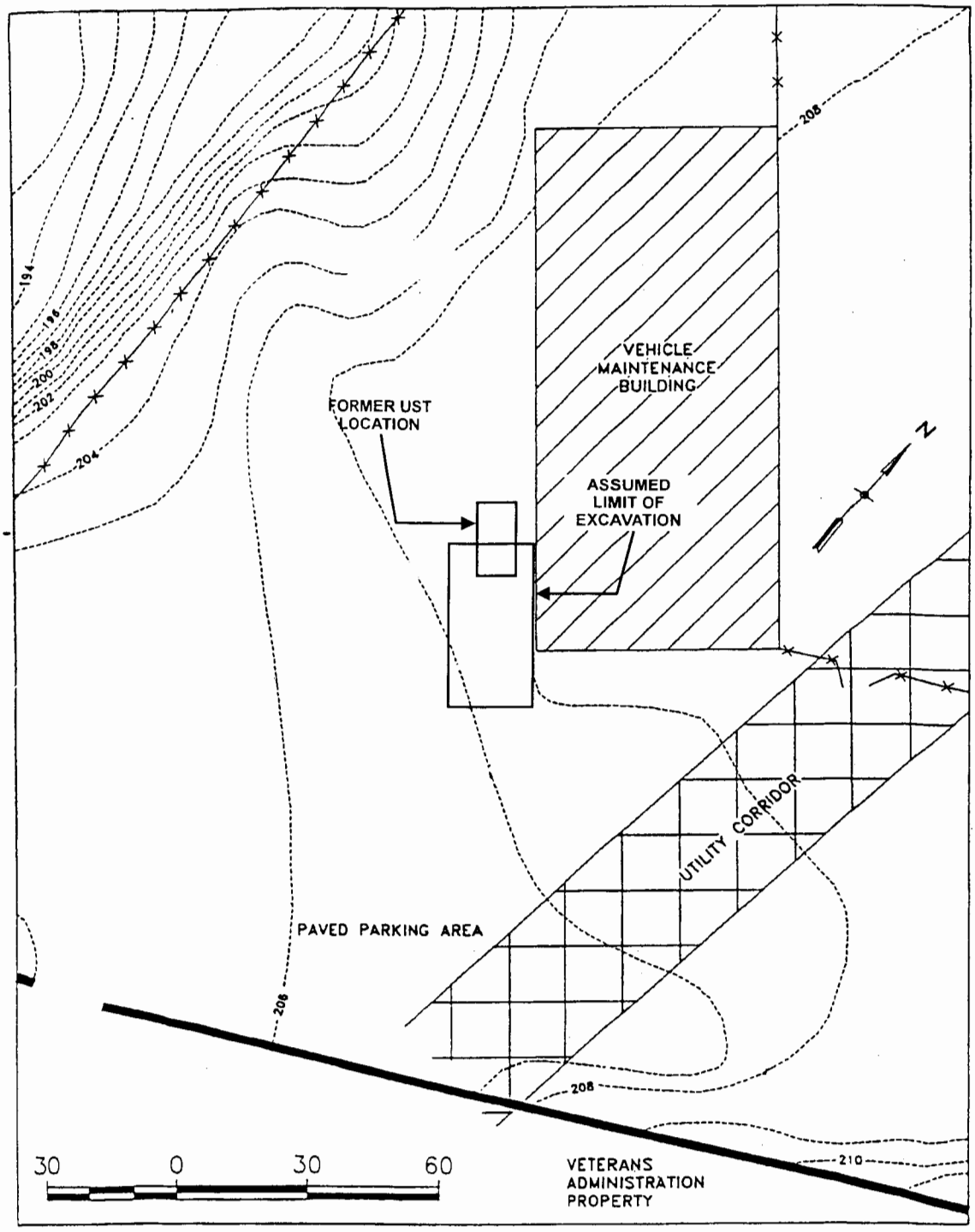

Figure 2-1 Site Plan
Germantown U.S. Army Reserve Center
Source: USACE Baltimore District 1995

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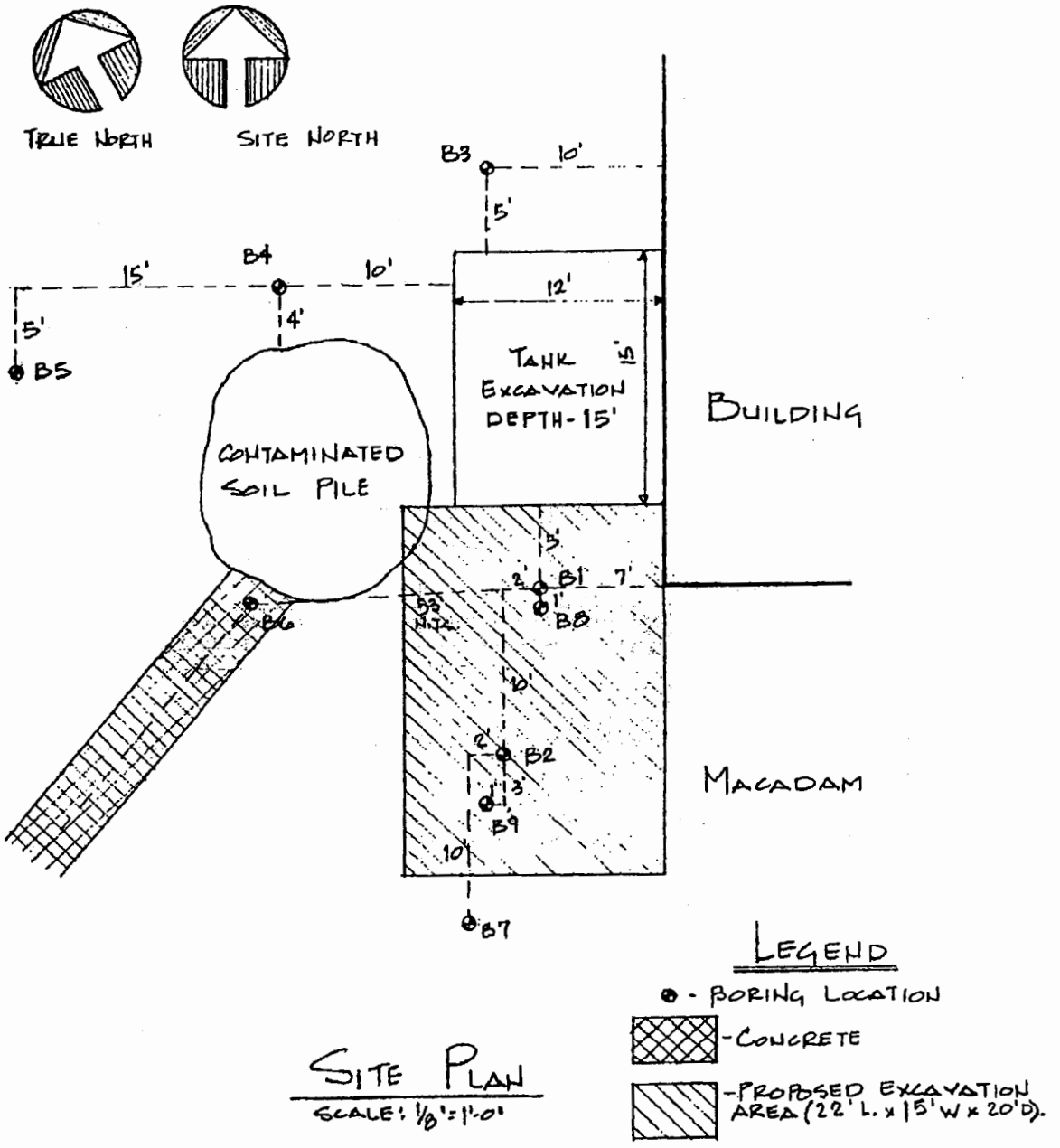

Figure 2-2 1993 EPAI Soil Boring Locations
Germantown U.S. Army Reserve Center
Source: 1993 EPAI UST Remedial Investigation Report

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3.0 REMEDIAL ACTION METHODS

The following investigative activities were performed at the Germantown USARC from September – February 2002:

- Completion of 13 soil borings to assess the soil quality in and around the former UST and confirm the historic soil investigation results and excavation limits
- Replacement of MW-2 and MW-3, which are screened below the water table, and the installation of one additional groundwater monitoring well downgradient of the former UST in order to provide a more accurate assessment of LNAPL at the site
- Hydraulic conductivity testing
- LNAPL bail down testing
- LNAPL gauging and recovery
- Quarterly groundwater sampling

In general, project activities conducted as part of this investigation were conducted in accordance with the *Remedial Action Plan for the Germantown United States Army Reserve Center, Philadelphia, PA* (EA 2000a), which was verbally approved by PADEP on 11 September 2000. Field activities were also performed in accordance with the *Site Health and Safety Plan for the Germantown United States Army Reserve Center Philadelphia, Pennsylvania* (EA, 1999) and *Addendum 1 Site Health and Safety Plan for the Germantown United States Army Reserve Center, Philadelphia, Pennsylvania* (EA, 2000b). Field activities which deviated from the Remedial Action Plan consisted of extending the proposed LNAPL recovery period from February 2001 to December 2001, and extending the final quarterly groundwater sampling event to allow for completion of LNAPL recovery efforts.

Soil boring and groundwater monitoring well installations for this investigation were conducted on 27 and 28 September 2000 and 05 and 06 October 2000. Well development occurred on 11 and 12 October 2000; in situ hydraulic conductivity testing (slug testing) was performed on 31 October 2000; and, quarterly groundwater sampling events were conducted in November 2000, February and May 2001, and February 2002. LNAPL gauging and removal efforts were conducted on a biweekly basis from November 2000 to January 2001, and on a monthly/bi-monthly basis from February 2001 to December 2001.

3.1 SOIL BORING ADVANCEMENT AND SOIL SAMPLING

On 27 and 28 September 2000, under the supervision of an EA geologist, 13 soil borings were advanced in and surrounding the former UST excavation. The soil borings were advanced using direct push methodologies by Target Environmental Co., Inc. of Egg Harbor City, New Jersey.

In general, soil borings were advanced to depths of approximately 28 ft below ground surface (bgs) or the point of refusal (bedrock). Soil boring locations were selected during the site visit with USACE and PADEP in August 2000, and were completed in accordance with the *Remedial Action Plan.* The only exception in sampling occurred with borings EA-12 and EA-13, which were advanced along the utility corridor in order to provide additional site lithology in that area. Soil boring locations are detailed below and illustrated in Figure 3-1.

- EA-1 and EA-2 were advanced in the former soil excavation area
- EA-3, EA-4, EA-7, and EA-9 were advanced along the perimeter of the former UST and excavation
- EA-5 was advanced near the utility corridor approximately 30 ft southwest of the former UST
- EA-6 was advanced in the former UST area
- EA-11 was advanced downgradient of the former UST, at the mid-point of MW-4 and MW-9, and was subsequently completed as MW-10
- EA-8 and EA-10 were advanced immediately adjacent to the existing wells MW-2 and MW-3 and were subsequently completed as MW-11 and MW-12
- EA-12 and EA-13 were advanced cross gradient of the former UST excavation along the utility corridor

Subsurface soil samples were collected by direct-push methodologies using a Geoprobe®. Direct -push sampling techniques permit discrete sampling of suspect areas in a manner that is easier, quicker, and less expensive than drilling a conventional soil boring. The technique also minimized the amount of investigation-derived material (IDM) such as soil cuttings.

The Geoprobe was advanced and samples of soil were collected continuously using 4-ft. long, 2-in. outside diameter sampling rods. Rods were lined with 48-in. poly-tubing, which allowed for discrete sampling of specific soil intervals. Soil borings were advanced to depths of approximately 28 ft bgs (bedrock). Soil boring logs are included as Appendix A.

Soil recovered from the continuous sampler was initially screened for volatile organic compounds (VOC) in the field using a photoionization detector (PID); the PID reading from each

sample was recorded on the soil boring log. One representative soil sample was collected from soil borings EA-1 through EA-11, where field screening and/or visual observations suggested the highest concentration of petroleum hydrocarbons. In soil borings where no obvious petroleum impact was observed, the soil sample was collected from just above the zone of saturation. In order reduce the loss of contaminants due to volatilization, VOC samples were collected first using Encore™ samplers. The remaining soil was homogenized in stainless steel bowls and placed in appropriate laboratory sample jars for analysis of fluorene and phenanthrene.

Soil samples were submitted for laboratory analysis of BTEX, cumene, and naphthalene (Method SW5030B/8260B), and fluorene and phenanthrene (Method SW 8310/8270). This suite of analytes was selected based on the PADEP analytical requirements for No. 2 fuel oil UST sites. In addition, one duplicate soil sample was collected and two representative samples were collected from below the zone of saturation and were analyzed for total organic carbon (TOC) by EPA Method 9060. A total of 14 soil samples was collected and submitted for laboratory analysis.

3.2 MONITORING WELL INSTALLATION AND DEVELOPMENT

On 05 and 06 October 2000, under the supervision of an EA geologist, three groundwater monitoring wells (MW-10 through MW-12) were installed at the site. Monitoring wells MW-11 and MW-12 were installed to replace MW-2 and MW-3, which are screened below the water table; MW-12 was installed along the downgradient property boundary. At the request of PADEP, MW-1 through MW-3 were not abandoned during the investigation, but were left in place for future gauging and LNAPL recovery, as appropriate.

Since soil in each of the groundwater monitoring well locations was screened and characterized during the direct-push soil sampling, no soil was sampled during the well installation activities. Groundwater monitoring well locations are illustrated on Figure 3-1. Groundwater monitoring well construction logs are provided in Appendix B.

3.2.1 Monitoring Well Installation

Groundwater monitoring well MW-10 was installed and developed using air rotary drill techniques; monitoring wells MW-11 and MW-12 were installed and developed using hollow stem auger (as casing) and air rotary drill techniques. Hollow stem augers (8-in. ID) were advanced in lieu of 8-in steel ID casing in the overburden at the MW-11 and MW-12 locations due to a broken casing driver on the air rotary rig. Well construction and development was

performed in accordance with USACE procedures (EM 1110-1-4000) and PADEP's Groundwater Monitoring Guidance Manual (PADEP 1996).

The newly installed groundwater monitoring wells were constructed using 4-in. ID flush-threaded PVC screen (0.020 slot) and PVC riser. Each well was completed with 15 ft of screen. The annular space between the well and borehole was backfilled with chemically inert sand to a depth 2-3 ft above the top of the screen. Soundings of the depth to the top of the sand were made continuously during well installation to minimize bridging. A bentonite seal was placed above the filter pack and was composed of commercially available coarse-grade bentonite. The bentonite seal for the bedrock wells was placed at the top of bedrock to prevent seepage. The bentonite was hydrated following placement. Remaining space was backfilled to grade with cement-bentonite grout.

The riser casing was terminated at the ground surface and was completed with a flush mount well cover installed in a concrete pad. The well was capped with a vented, expanding well cap and locked.

The down-hole drilling equipment was decontaminated after each well installation and decontamination water was treated using activated carbon and discharged as IDM to the onsite storm sewer.

3.2.2 Monitoring Well Development

The newly installed monitoring wells were developed on 11 October 2000, five days following the well installation. Well development water was treated using activated carbon and discharged to the sanitary sewer.

Each well was first mechanically surged and pumped clear of sediment with a submersible pump. Surging continued until little or no sediment entered the well. Following the surging process, temperature, pH, specific conductivity, and turbidity were monitored during development for each well volume removed. Pumping continued until the following criteria were met: water quality parameters had stabilized (±0.1 pH units, temperature ±1°C, conductivity ±5 percent between three consecutive reading, and turbidity is less than 10 units), the water was visibly clear and free of fines, and a minimum removal of three times the standing water volume in the well (to include the well screen and casing plus saturated annulus, assuming 30 percent porosity).

Irregularities of the well development program occurred in MW-10 and MW-11 (turbidity measurements did not stabilize within 2 hours of pumping) and MW-12 (field instrumentation

malfunctioned prior to final stabilization). However at the completion of well development, groundwater was observed to be visibly clear and free of fines and suspended sediment. Results are noted on the Field Record of Well Developments, included in Appendix C.

3.2.3 Groundwater Purging and Sampling

In November 2000, February 2001, May 2001, and February 2002, a two-person field team gauged each of the 13 existing and newly installed groundwater monitoring wells at the Germantown USARC. Water levels and LNAPL thickness were gauged using an oil-water interface probe. Monitoring wells MW-1, MW-2, and MW-3 were not sampled due to their screening interval placement beneath the groundwater table interface. Further, in February 2002, MW-4 could not be located (area was recently paved) and was therefore not sampled.

The remaining groundwater monitoring wells were purged and sampled using a low-flow sampling technique. The wells were purged by continuously pumping the monitoring well using a grundfos pump equipped with dedicated 3/8" ID polyethylene tubing. Temperature, pH, specific conductivity, redox potential (ORP) and turbidity were monitored in-line using a YSI 3800 water quality meter. Groundwater was withdrawn at a rate of 200 ml/min and water quality measurements were collected at 5 minute intervals. Pumping continued until the following criteria were met: water quality parameters stabilized (as described in Section 3.2.2), the water was visibly clear and free of fines, and a minimum removal of three times the standing water volume in the well (to include the well screen and casing plus saturated annulus, assuming 30 percent porosity). Appendix C presents the Field Records of Well Gauging, Purging, and Sampling.

The groundwater samples were submitted for analysis of BTEX, cumene and naphthalene by EPA Method 8260; and fluorene and phenanthrene by EPA Method 8270. One duplicate sample and one rinse blank (sampling pump) were also collected during each sampling event and analyzed for the same list of analytes. During each groundwater sampling event, one trip blank sample was analyzed for BTEX, cumene, and naphthalene.

3.3 SAMPLE HANDLING/CHAIN OF CUSTODY

Soil and groundwater samples were hand-carried under strict chain-of-custody to Severn-Trent Laboratories, Sparks, Maryland or GPL Laboratories, Gaithersburg, Maryland for analysis. Samples were analyzed with standard turn-around times of 28 days from receipt of samples.

Samples collected for analysis were recorded in the soil boring logs and project field notes. These notes will be kept on file for a period of five years for reference. Chain-of-custody (COC) forms were initiated at the time samples were collected. Each sample collected during field activities was given a unique sample identification (ID) to establish each discrete sampling point. The sample ID was included on the and bottle label. The information contained in the sample container was entered into the appropriate data tables and appended to the laboratory electronic data deliverables (EDD).

Parameters analyzed and the total number of soil and groundwater samples are discussed in Sections 3.1 and 3.2. Additional sample handling (required sample containers, preservation, and holding times) and analytical QA/QC considerations were addressed in the *Remedial Action Plan.*

Following sample collection, containers were sealed and placed in a cooler with bagged ice and cooled to 4°C or less. The COC was placed in a plastic bag and taped to the inside of the cooler lid. The cooler was sealed with adhesive tape, labeled, and secured with custody seals. Upon receipt and opening of the coolers, the laboratory sample custodian measured and recorded the temperature inside the coolers, which did not exceed 4°C.

3.4 QUALITY ASSURANCE/QUALITY CONTROL

The reporting limits that were used in soil and groundwater sample analyses are provided in the *Remedial Action Plan,* and Table 3-4 and were based on a review of the PADEP SHS. The use of standard sampling methods and validated, USEPA-approved analytical methods ensures data comparability.

TABLE 3-1 REPORTING LIMITS FOR SOIL AND GROUNDWATER SAMPLES

Parameter	PADEP SHS (Soil) µg/kg	Reporting Limit (Soil) µg/kg	PADEP SHS (Groundwater) µg/l	Reporting Limit (Groundwater) µg/l
Volatile organics GC/MS (SW846 8260B/8011)				
Benzene	500	5	5	2
Ethylbenzene	70,000	5	700	2
Toluene	100,000	5	1,000	2
Xylenes (total)	1,000,000	5	10,000	6
Cumene	780,000	5	1,100	2
Naphthalene	25,000	5	100	2
Semivolatile organics GC/MS - (SW846 8270B)				
Fluorene	3,000,000	330	1,500	5
Phenanthrene	10000,000	330	1,100	5

The quality of data obtained in the field for chemical analysis was evaluated using QA/QC samples. Blind duplicates for soil and groundwater were collected. The results of the blind duplicates were compared to the actual sample to determine laboratory consistency in the results. QA/QC samples were preserved, handled, transported, and analyzed in a manner identical to the actual samples. Duplicate samples are listed in Table 3-2.

TABLE 3-2 SUMMARY OF FIELD DUPLICATES

Sample Id	Sample Location	Date Sampled	Matrix
DUP1	EA-10	9/2000	Soil
DUP-1	RW-1	11/2/00	Groundwater
DUP-1	MW-5	2/06/01	Groundwater
DUP-1	MW-6	5/10/01	Groundwater
DUP-1	MW-12	2/14/02	Groundwater

3.5 AQUIFER TESTING AND GROUNDWATER FLOW RATE

On 31 October 2000, *in situ* hydraulic conductivity testing (slug testing) was performed on two representative wells (MW-6 and MW-10) to measure aquifer hydraulic conductivity (*K*). Monitoring well MW-6, which was installed during site characterization activities in September 1995, consists of a 4-in. diameter PVC monitoring well screened from approximately 25 to 40 ft bgs. Monitoring well MW-10, which was installed in October 2000, consists of a 4-in. diameter PVC monitoring well screened from approximately 23 to 39 ft bgs. Both monitoring wells were screened across the overburden/bedrock interface.

Two slug tests, consisting of falling head tests, were conducted to estimate *in situ* hydraulic conductivity of the screened interval at each well location. For each slug test, a clean In Situ Troll 4000™ data logger was placed in the well and calibrated according to the manufacturers' specifications. The water level in the monitoring well was measured with a water level indicator prior to the initial insertion of the slug. A clean 3 in. diameter slug was inserted into the selected wells, which consisted of a 4 ft length of PVC pipe filled with sand, and sealed on both ends.

In performing a falling head test, the slug was quickly submerged into the groundwater in the well, when an elapsed time count began. Water levels were automatically monitored by the computerized In Situ Troll 4000 data logger until the level recovered to not less than 90 percent of the original static level.

The data obtained from performing the falling head slug tests were downloaded from the data logger to a personal computer for further analysis with AQTESOLV™. The Bouwer and Rice method option was used to calculate hydraulic conductivity from the data. Computer printouts of the raw slug test data are presented in Appendix D.

3.6 BAILDOWN TESTING

Concurrent with the soil and groundwater sampling, EA performed baildown tests on MW-1 to assess the effectiveness of passive LNAPL recovery techniques (bailing or absorbent socks) to reduce and/or to eliminate LNAPL from the two wells. Bailing operations occurred on 27 September 2000 and on 31 October 2000. Monitoring well MW-1 was gauged before and after bailing to assess the rate of LNAPL recovery. In September 2000, LNAPL recovery rates were measured over a 48 hour period; during October 2000, LNAPL recovery rates were measured over a one hour period.

3.7 LNAPL RECOVERY

Under verbal approval of PADEP, on 27 November 2000 EA initiated LNAPL recovery efforts in MW-1 and MW-3. Oil absorbent socks, (3 in. diameter and 4 ft long) were installed in groundwater monitoring wells MW-1 and MW-3. LNAPL gauging and/or removal efforts were conducted on a biweekly basis from November 2000 to January 2001, and on a monthly/bi-monthly basis (depending on product thickness) from February 2001 to February 2002. Further, on 31 October 2001, in order to draw–down the groundwater table in MW-1 to below the screened depth (approximately 30 ft below grade), and maximize LNAPL recovery, MW-1 was pumped under vacuum conditions for approximately 3 hours, during which time a constant drawdown of 6 ft was observed. Following pumping, MW-1 was gauged in December 2001 and February 2002 to re-evaluate LNAPL recovery.

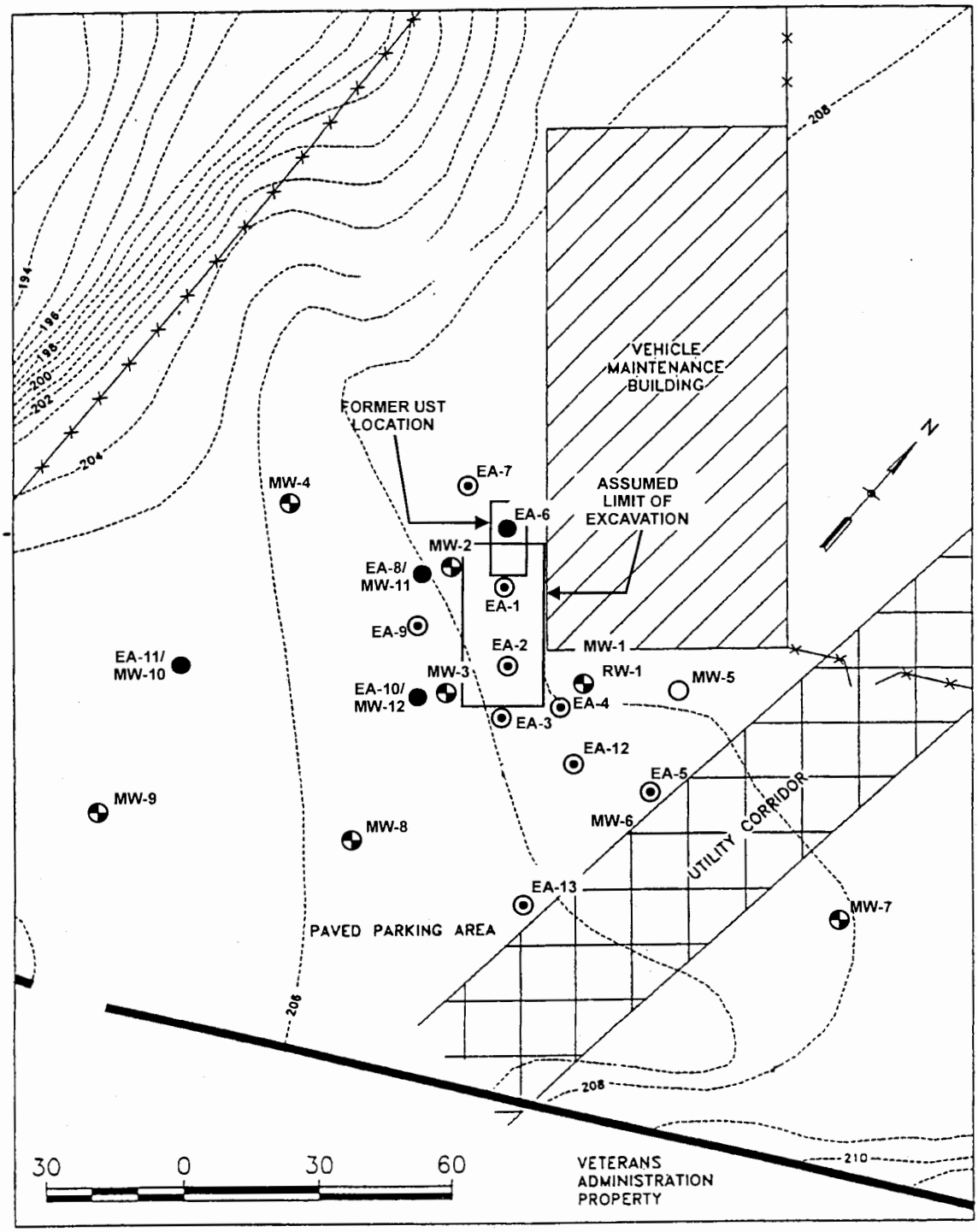
3.8 DECONTAMINATION AND IDM HANDLING PROCEDURES

The primary objective of the decontamination process was to prevent the accidental introduction of potential contaminants to non-contaminated areas and/or samples

During soil sampling, a temporary staging area was set up adjacent to the vehicle maintenance building; during the monitoring well installation, a temporary decontamination pad was constructed adjacent to the main building. All sampling equipment that was not dedicated to one sample location was washed with methanol and deionized water. Wash water and well purge water was treated using activated carbon and discharged to the storm sewer.

Investigative derived materials (IDM) consisting of soil cuttings and LNAPL generated during field activities were contained in 55-gal drums that were suitable for storage of hazardous materials (U.S. DOT 17-H or 17-E 55-gal drums) and staged on pallets adjacent to the Vehicle Maintenance Building. In October 2001, under the oversight EA, these drums were transported and disposed via thermal destruction by Clean Earth of New Castle, Inc. A copy of the Certificate of Destruction is included as Appendix E.

Based on laboratory analytical results of one representative sample collected from the soil cuttings, the soil cuttings are characterized as a non-hazardous waste and were removed for disposal on 15 March 2001 by Clean Earth of New Castle, Inc. of New Castle, Delaware.

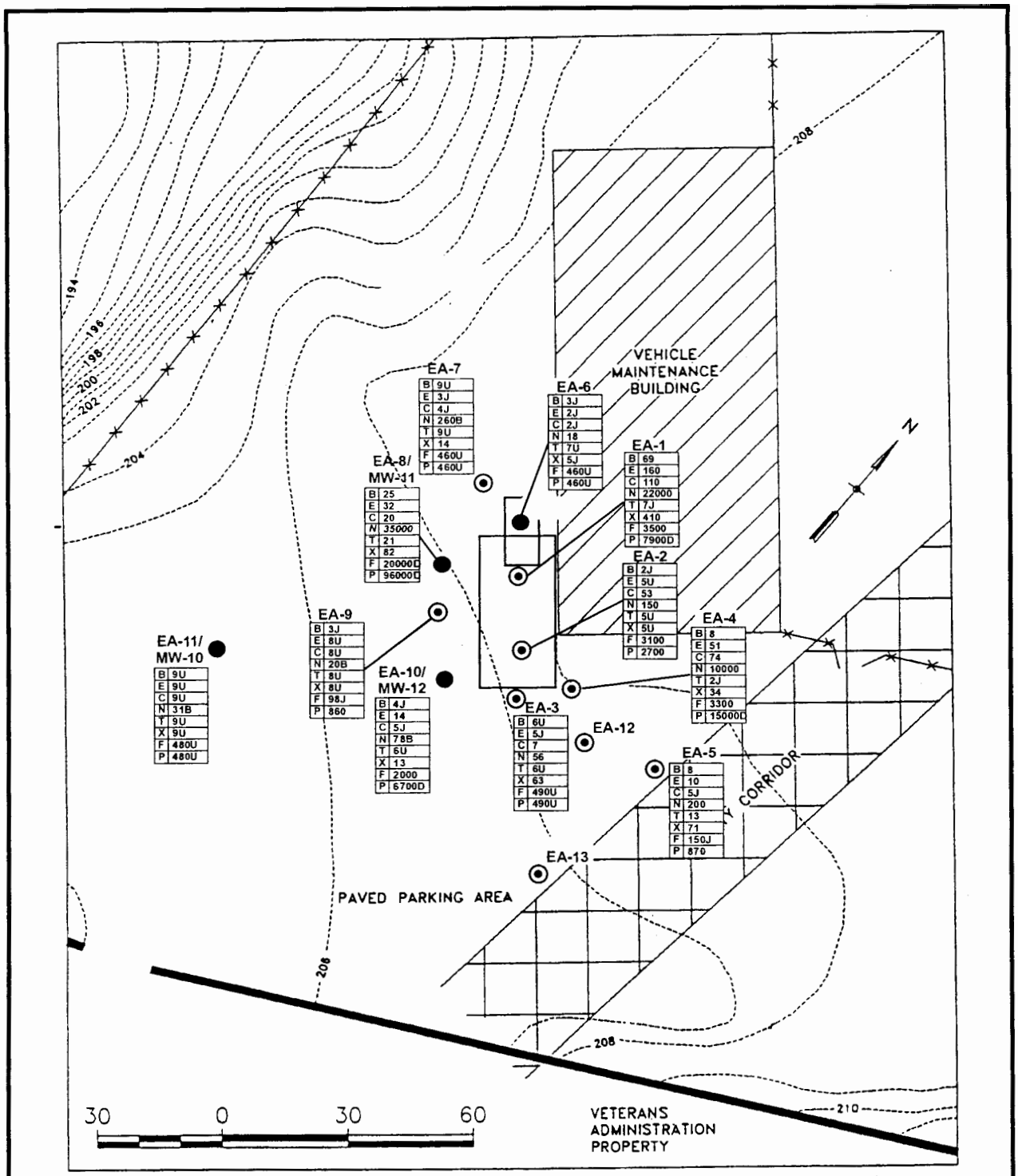


LEGEND

- FENCE LINE
- CONCRETE RETAINING WALL
- GROUND ELEVATION CONTOURS (USACE 1995)
- PRE-EXISTING MONITORING WELL (MW), OR RECOVERY WELL (RW)
- SOIL BORING
- SOIL BORING/GROUNDWATER MONITORING WELL

Figure 3-1 Soil Boring and Groundwater Monitoring Well Locations
Germantown U.S. Army Reserve Center
Source: USACE Baltimore District 1995

P:\Projects\Federal\DOD\Army\Projects\6095776\RemedialAction\Sitemap.cdr



LEGEND

- FENCE LINE
- CONCRETE RETAINING WALL
- GROUND ELEVATION CONTOURS (USACE 1995)
- SOIL BORING
- SOIL BORING/GROUNDWATER MONITORING WELL

CONCENTRATIONS (ug/kg) EXCEEDING THE ACT 2 STATEWIDE HEALTH STANDARD ARE SHOWN IN ITALICS

Figure 3-2 September 2000 Soil Sampling Results
Germantown U.S. Army Reserve Center
Source: USACE Baltimore District 1995

P:\Projects\Federal\DOD\Army\Projects\6095776\RemedialAction\Sitemap.cdr

4.0 EVALUATION AND PRESENTATION OF RESULTS

4.1 SUBSURFACE CONDITIONS

4.1.1 Geologic

The site is located within the Piedmont physiographic province, composed of metamorphosed sedimentary rocks of the lower Paleozoic Period. In general, overburden consists of grayish green or orange brown silty clay, underlain by a grayish green silty sand to depths of approximately 30 to 35 ft below grade (bedrock). Bedrock, classified as the Wissahickon Formation, consists of weathered mica schist.

Field observations during the soil boring and groundwater monitoring well installation phase were generally consistent with the above documented lithology of the site. Soil consisted of grayish green or orange brown silty clay, underlain by a grayish green silty sand to depths of approximately 30 to 35 ft bgs. Bedrock consisted of weathered mica schist. Exceptions to the above observations occurred in the overburden in soil borings EA-1 and EA-2 that were advanced in the presumed soil excavation south of the former UST. The lithology of EA-1 and EA-2 consisted primarily of fill materials, comprised of a heterogeneous mix of sands and silt, gravel, cobbles, and brick to depths of approximately 24 ft below ground surface (bgs). In addition, soil collected from approximately 14 to 24 ft bgs in EA-1 and soil collected from 20 to 28 ft bgs in EA-2 exhibited a faint weathered fuel oil odor.

These observations suggest that the soil excavation effort, recommended in the 1993 EPAI UST Remedial Investigation was likely initiated and completed. Complete soil boring logs are included as Appendix A.

4.1.2 Hydrogeologic

Groundwater has been surveyed at depths ranging from 29 to 31 ft below grade flowing in a west/southwesterly direction (Figure 4-1). The nearest stream, Wissahickon Creek, is located one mile west of the site.

Effective porosity values for site soil (silty sands to sandy silt) range from 25 to 50 percent (Freeze and Cherry 1979). For purposes of this investigation, a porosity values of 30 percent was chosen for the calculations. Gravel pack porosity was assigned a typical sand porosity of 30 percent. Based on the slug test data, an average hydraulic conductivity (K) value of 1.02×10^{-3}

ft/minute (1.47 ft/day) was reported for MW-6 and MW-10. This is within the range of typical *K* values for silty sands, which range from 10^{-6} to 10^{3} ft/minute (Domenico 1990).

4.2 SOIL SAMPLING RESULTS

Field Observations

Soil recovered from the continuous sampler was initially screened for VOC in the field using a PID. The PID readings were collected at approximate 2 ft intervals, unless limited recovery, or a distinct change in the lithology (staining, petroleum/chemical odor) was observed. PID readings from each sample were recorded on the soil boring logs.

Field screening and visual observations indicated residual petroleum impacted soil located beneath (EA-1, EA-2, EA-4) and immediately southwest (EA-8, and EA-10) of the former UST excavation area. No evidence of petroleum impacts were identified in soil collected from the remaining soil borings. With the exception of the soil screening result from 4–6 ft at EA-10, no PID readings were reported above 100 ppm for soil samples collected at depths of less than 14–16 ft bgs. Based on this, impacted soil appears to be limited to deep soil beneath the immediate boundaries of the historic soil excavation area.

Analytical Results

One representative soil sample was collected from borings EA-1 through EA-10, where field screening and/or visual observations suggested the highest concentration of petroleum impact. In soil borings where no obvious petroleum impact was observed, the soil sample was collected from just above the zone of saturation. The shallowest soil sample was collected at EA-1, from a depth of 16–18 ft bgs, which corresponded to a PID headspace reading of 283 ppm. The remaining soil samples were collected from depths greater than 20 ft bgs (Table 2-1).

Analytical results of soil sampling were consistent with field screening results. Specifically, naphthalene was detected in soil collected from borings EA-1, EA-4, EA-8 and EA-10 (duplicate only) at concentrations ranging from 10,000 µg/kg to 35,000 µg/kg, which is at or above the applicable SHS of 35,000 µg/kg. Low concentrations of BTEX, cumene, naphthalene, fluorene, and/or phenanthrene were identified in the remaining soil samples; however these analytes were reported at concentrations well below their respective SHS. A summary of the soil sampling analytical results is provided on Table 2-1 and Figure 4-2. Laboratory analytical results are also included as Appendix F.

4.3 GROUNDWATER SAMPLING RESULTS

In November 2000, February 2001, and May 2001, a two-person field team gauged and sampled wells MW-4 through MW-12 and recovery well RW-1. As noted previously, monitoring wells MW-11 and MW-12 were installed to replace MW-2 and MW-3 that are inappropriately screened beneath the groundwater table interface and were therefore not sampled. In addition, RW-1 located immediately adjacent to MW-1, is properly screened based on well construction logs, and therefore serves as a replacement well for MW-1 (which has historically shown the presence of LNAPL).

During each quarterly sampling event, monitoring wells MW-4 through MW-12 and recovery well RW-1 were purged and then sampled using low-flow sampling methodology. Temperature, pH, specific conductivity, ORP and turbidity were monitored in-line using a YSI 3800 water quality meter. Pumping continued until water quality parameters stabilized. Results of the well gauging and purging are summarized in Tables 4-1 through 4-4; Field Records of Well Gauging, Purging and Sampling for each sampling event are included as Appendix C.

Ten groundwater samples were submitted for analysis of BTEX, cumene and naphthalene by EPA Method 8260, and fluorene and phenanthrene by EPA Method 8270. One duplicate sample (RW-01) and one rinse blank (sampling pump) were also collected during the sampling event and analyzed for the same list of analytes. One trip blank sample was analyzed for BTEX, cumene, and naphthalene.

Analytical results of groundwater sampling are included as Appendix F and summarized on Table 4-5 and Figure 4-3. Concentrations of BTEX, cumene, naphthalene, phenanthrene, and fluorene were compared against PADEP's SHS for residential aquifers with a total dissolved solids content of less than 2,500.

No analytes were reported at concentrations exceeding the applicable SHS. Low-level concentrations of benzene, ethylbenzene, xylene, cumene, naphthalene, phenanthrene, and/or fluorene were identified in samples collected from MW-10, MW-11, MW-12, and RW-1 in November 2000.

No cross contamination or field contamination was detected, as evidenced by the trip and rinse blank results. The duplicate performed at RW-1 showed comparable concentrations of naphthalene and fluorene to the field sample collected at RW-1. Trace concentrations (2 µg/l) total xylenes were identified in the duplicate sample but not in the field sample.

4.4 LNAPL GAUGING AND RECOVERY

Consistent with the previous findings, LNAPL was initially present in MW-1 (1.49 ft) and MW-3 (0.15 ft) in November 2001. Subsequent to the LNAPL gauging, approximately 3.5 gal LNAPL was bailed from the two wells. Monitoring wells MW-1 and MW-3 were regauged for LNAPL thickness on 28 September 2000 at which time LNAPL was observed to recover in MW-1 to a thickness of 0.21 ft. Monitoring wells MW-1 and MW-3 were also gauged on 05 October 2000 at which time a LNAPL thicknesses of 0.20 ft and 0.13 ft were measured, respectively.

Concurrent with the groundwater sampling effort, EA performed a baildown test on MW-1 to assess the effectiveness of passive LNAPL recovery techniques (bailing or absorbent socks) to reduce and/or to eliminate LNAPL from the two wells. Bailing operations occurred on 31 October 2000. Monitoring well MW-1 was gauged before and after bailing to assess the rate of LNAPL recovery. LNAPL recovery rates were measured over a one hour period. Results of the gauging and baildown indicated nominal LNAPL recovery (0.01 ft) over the one hour period. EA scheduled an additional baildown test for 27 November 2000; however, only 0.02 ft LNAPL was measured in MW-1 at that time, therefore, bailing was not performed at that time.

Under verbal approval of PADEP, on 27 November 2000 EA initiated passive LNAPL recovery efforts in MW-1 and MW-3. Oil absorbent socks, (3 in. diameter and 4 ft long) were installed in each well. As documented in the *Remedial Action Plan for the Germantown United States Army Reserve Center, Philadelphia, PA* (EA 2000a), LNAPL gauging and removal efforts were initially scheduled to occur bi-weekly. However, given the low recovery rate of LNAPL in each well (approximately 0.25 to 0.5 gallons per month) in an effort to extend the scheduled removal and gauging, as the recovered LNAPL volumes decreased, the gauging interval and sock replacement intervals were increased. In summary, gauging and recover efforts were performed on an approximate bi-weekly basis from October 2000 to January 2001, monthly basis from February 2001 to October 2001, and bi-monthly basis from December 2001 to February 2002.

As shown in Table 4-6, the absorbent socks were effective at reducing the LNAPL thickness in MW-3 to a non-detectable thickness by May 2001, at which time the absorbent sock was removed. No detectable thicknesses of LNAPL have been observed in MW-3 since that time.

The absorbent socks were effective at reducing the LNAPL thickness in MW-1 to a nominal thickness (< 0.10 ft) by May 2001. However, LNAPL was observed to persist (based on visual observations and gauging) in MW-1. In an effort to maximize LNAPL recovery and mitigate this residual amount of LNAPL, in October 2001, MW-1 was pumped under vacuum conditions

for approximately 3 hours during which time a constant drawdown of 6 ft was observed (below the screened depth of approximately 30 ft below grade). Following this pumping event, MW-1 was gauged for LNAPL in December 2001 and February 2002. Less than 0.01 ft LNAPL was detected in December 2001; no discernible LNAPL thickness was detected in February 2002.

In total, approximately 8 gallons LNAPL and 1,400 gallons of groundwater were recovered using absorbent socks and pumping.

TABLE 4-1 SUMMARY OF SOIL ANALYTICAL RESULTS, SEPTEMBER 2000
GERMANTOWN U.S. ARMY RESERVE CENTER

Sample Designation	Depth (ft)	PID Reading (ppm)	Benzene (ug/kg)	Ethylbenzene (ug/kg)	Cumene (ug/kg)	Naphthalene (ug/kg)	Toluene (ug/kg)	Xylene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)
SHS**			**500**	**70,000**	**780,000**	**25,000**	**100,000**	**1,000,000**	**3,000,000**	**10,000,000**
EA-1	16-18	283	69	160	110	22,000	7J	410	3,500	7,900D
EA-2	22-24	212	2J	5U	53	150	5U	5U	3,100	2,700
EA-3	24-27	1.1	6U	5J	7	56	6U	63	490U	490U
EA-4	24	157	8	51	74	10,000	2J	34	3,300	15,000D
EA-5	24-26	3.7	8	10	5J	200	13	71	150J	870
EA-6	26-28	4.5	3J	2J	2J	18	7U	5J	460U	460U
EA-7	26-28	2.8	9U	3J	4J	260B	9U	14	460U	460U
EA-8	21.5-24	121	25	32	20	**35,000**	21	82	20,000D	96,000D
EA-9	27.5	2.4	3J	8U	8U	20B	8U	8U	98J	860
EA-10	22-26	172	4J	14	5J	78B	6U	13	2,000	6,700D
EA-11	27	0.8	9U	9U	9U	31B	9U	9U	480U	480U
DUP1 (EA-10)	22-26	172	10	86	65	14,000	8U	250	1,600	3200

SUPERSCRIPTS:

** = Statewide Health Standards (SHS) medium-specific concentrations for regulated substances in soil for residential used aquifers with a TDS<2500, 11/24/01.

QUALIFIERS:

B = Found in blank.
D = Diluted.
J = Estimated value.
NA = Not analyzed.
U = Not detected.

TABLE 4-2 MONITORING WELL GAUGING RESULTS, NOVEMBER 2000
GERMANTOWN U.S. ARMY RESERVE CENTER

	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09	MW-10	MW-11	MW-12	RW-01
Gauging Date	10/31/00												
Well Depth (ft)	45.4	52.3	45.3	35.9	40.42	38.89	39.76	38.23	38.54	34.23	37.3	36.13	39.5
Elevation at Ground Surface (ft + MSL)	208.17	207.11	206.94	206.03	208.03	207.29	207.99	206.36	*	205.78	206.58	206.85	208.02
Depth to Water (from Surface)	29.48	28.67	28.61	27.54	29.38	28.56	29.7	28.01	27.63	27.49	28.15	28.41	28.78
Depth to Product (from Surface)	29.28	-	28.47	-	-	-	-	-	-	-	-	-	-
Water Elevation (ft + MSL)	178.69	178.44	178.33	178.49	178.65	178.73	178.29	178.35	*	178.29	178.43	178.44	179.24
Volume (gal.) purged prior to sampling	NS	NS	NS	22.5	20	25	25	20	25	15	42.5	20	45
PARAMETERS													
Indicator													
Turbidity (NTU)	NS	NS	NS	61.3**	4.2	3.3	-2.5	0	23.1**	8.5	6.7	7.8	3.6
Natural Attenuation													
Oxidation-reduction potential (mV)	NS	NS	NS	-85.2	-62.4	-48.2	-67.9	-30.6	-41.5	-59.3	-54.3	-48.4	-49.6
Conductivity (ms/cm)	NS	NS	NS	1.015	0.776	0.539	1.032	0.6	0.561	0.528	0.41	1.241	0.577
Dissolved Oxygen (mg/L)	NS	NS	NS	7.75	6.25	10.52	15.52	7.77	9.4	6.24	9.21	8.69	9.84
pH	NS	NS	NS	6.69	6.17	6.34	5.35	6.34	6.21	6.57	6.22	6.44	6.33
Temperature (oC)	NS	NS	NS	17.82	19.79	20.36	20.16	17.87	16.94	17.72	17.31	17.64	17.03

NS = Not sampled; MW-1, MW-2, and MW-3 are screened below the water table, and are located immediately adjacent to RW-1, MW-10, and MW-12, respectively.

** = The elevation of the new wells has not been surveyed to date due to obstructions (cars, trailers, etc.) during the October sampling round. Wells will be resurveyed during the second quarter.

** = Turbidity did not fall below 10 NTU below 3 well volumes were evacuated

MSL = Mean Sea Level

TABLE 4-3 MONITORING WELL GAUGING RESULTS, FEBRUARY 2001
GERMANTOWN U.S. ARMY RESERVE CENTER

	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09	MW-10	MW-11	MW-12	RW-01
Gauging Date	2/6/2001 and 2/7/01												
Well Depth (ft)	45.4	52.3	45.3	35.9	40.42	38.89	39.76	38.23	38.54	34.23	37.3	36.13	39.5
Elevation at Ground Surface (ft + MSL)	208.17	207.11	206.94	206.03	208.03	207.29	207.99	206.36	*	205.78	206.58	206.85	208.02
Depth to Water (from Surface)	29.48	28.67	28.61	27.54	29.38	28.56	29.7	28.01	27.63	27.49	28.15	28.41	28.78
Depth to Product (from Surface)	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Elevation (ft + MSL)	178.69	178.44	178.33	178.49	178.65	178.73	178.29	178.35	*	178.29	178.43	178.44	179.24
Volume (gal.) purged prior to sampling	NS	NS	NS	27.5	25.25	35	30	30	22.5	30	20	30	85
PARAMETERS													
Indicator													
Turbidity (NTU)	NS	NS	NS	9.7	8.09	9.1	0.0	2.2	0.0	8.3	7.29	6.3	1.87
Natural Attenuation													
Oxidation-reduction potential (mV)	NS	NS	NS	-12.6	23.5	161.3	261.9	166.4	-78.6	-83.4	-123.6	-88.4	-60.3
Conductivity (ms/cm)	NS	NS	NS	1.062	1.213	1.086	0.753	0.317	1.029	0.8	1.259	1.458	1.417
Dissolved Oxygen (mg/L)	NS	NS	NS	0.95	0	0.89	1.52	4.06	0.77	0.67	0.47	1.09	1.36
pH	NS	NS	NS	6.47	6.44	6.44	5.72	6.56	6.68	6.7	6.75	6.69	6.56
Temperature (oC)	NS	NS	NS	18.48	18.56	19.63	18.76	17.91	17.92	18.3	17.3	17.96	17.77

NS = Not sampled; MW-1, MW-2, and MW-3 are screened below the water table, and are located immediately adjacent to RW-1, MW-10, and MW-12, respectively.

** = The elevation of the new wells has not been surveyed to date due to obstructions (cars, trailers, etc.) during the sampling round. Wells will be resurveyed during the next sampling event.

MSL = Mean Sea Level

TABLE 4-4 MONITORING WELL GAUGING RESULTS, MAY 2001
GERMANTOWN U.S. ARMY RESERVE CENTER

	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09	MW-10	MW-11	MW-12	RW-01
Gauging Date	5/10/01	5/10/01	5/11/01	5/11/01	5/10/01	5/11/01	5/10/01	5/10/01	5/10/01	5/10/01	5/10/01	5/10/01	5/11/01
Well Depth (ft)	45.4	52.3	45.3	35.9	40.42	38.89	39.76	38.23	38.54	34.23	37.3	36.13	39.5
Elevation at Ground Surface (TOC)	208.17	207.55	207.12	206.54	208.25	207.27	208.09	205.9	206.38	206.43	207.07	207.05	207.62
Depth to Water (from TOC)	29.37	28.7	28.47	27.42	29.28	28.51	29.01	27.97	27.62	27.53	28.24	28.39	28.79
Depth to Product (from Surfac	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Elevation (ft)	178.8	178.85	178.65	179.12	178.97	178.76	179.08	177.93	178.76	178.9	178.83	178.66	178.83
Volume (L.) purged prior to sampling	NS	NS	NS	17	18	11.6	9.6	6.6	16.1	19.5	8	10	8.1
PARAMETERS													
Indicator													
Turbidity (NTU)	NS	NS	NS	8.8	8.8	8.1	6.5	3.7	8.1	8.9	4.3	6.5	4.7
Natural Attenuation													
Oxidation-reduction potential (mV)	NS	NS	NS	-80.7	-16.5	40.3	236.9	-96.9	-199.5	-125.7	-137.5	-154	-191.8
Conductivity (ms/cm)	NS	NS	NS	1.11	1.058	1.022	0.656	0.833	0.986	0.866	0.936	1.423	0.945
Dissolved Oxygen (mg/L)	NS	NS	NS	0	0	0.98	2.18	0.83	1.09	0.01	0	0	0.92
pH	NS	NS	NS	6.28	6.17	6.39	5.57	6.16	6.62	6.35	6.58	6.54	6.49
Temperature (oC)	NS	NS	NS	21.3	22.48	23.84	20.35	23.2	23.53	22.82	18.92	21.07	19.81

NS = Not sampled; MW-1, MW-2, and MW-3 are screened below the water table, and are located immediately adjacent to RW-1, MW-10, and MW-12, respectively.

TOC = Top of Casing

TABLE 4-5 MONITORING WELL GAUGING RESULTS, FEBRUARY 2002
GERMANTOWN U.S. ARMY RESERVE CENTER

	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09	MW-10	MW-11	MW-12	RW-01
Gauging Date	2/14/02	2/14/02	2/14/02	2/14/02	2/14/02	2/14/02	2/14/02	2/14/02	2/14/02	2/14/02	2/14/02	2/14/02	2/14/02
Well Depth (ft)	45.4	52.3	45.3	35.9	40.42	38.89	39.76	38.23	38.54	34.23	37.3	36.13	39.5
Elevation at Ground Surface (TOC)	208.17	207.55	207.12	206.54	208.25	207.27	208.09	205.9	206.38	206.43	207.07	207.05	207.62
Depth to Water (from TOC)	29.63	28.95	28.75	NS	29.3	28.62	29.58	27.73	27.9	28.28	28.45	28.67	29.12
Depth to Product (from Surfac	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Elevation (ft)	178.54	178.6	178.37	NS	178.95	178.65	178.51	178.17	178.48	178.15	178.62	178.38	178.5
Volume (L.) purged prior to sampling	NS	NS	NS	NS	23	64	38	32	53	49	49	40	30
PARAMETERS													
Indicator													
Turbidity (NTU)	NS	NS	NS	NS	0	0	0.0	0.0	0.0	9	24	0	0
Natural Attenuation													
Oxidation-reduction potential (mV)	NS	NS	NS	NS	12.9	14.7	112.4	10.2	-77.6	-59.6	-69.5	-79.1	-54.1
Conductivity (ms/cm)	NS	NS	NS	NS	684	620	412	878	1184	471	1009	672	1211
Dissolved Oxygen (mg/L)	NS	NS	NS	NS	7.02	6.72	7.98	0.12	0.37	6.81	8.29	6.99	5.26
pH	NS	NS	NS	NS	6.58	6.68	6.54	6.39	6.54	6.7	6.73	6.77	6.57
Temperature (oC)	NS	NS	NS	NS	16.78	16.78	17.36	19.44	16.47	15.99	16.59	17.32	17.81

NS = Not sampled; MW-1, MW-2, and MW-3 are screened below the water table, and are located immediately adjacent to RW-1, MW-10, and MW-12, respectively. MW-04 was paved over at the time of the sampling event and could not be accessed.

TOC = Top of Casing

TABLE 4-6 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
NOVEMBER 2000 TO FEBRUARY 2002
GERMANTOWN U.S. ARMY RESERVE CENTER

Well Designation	Date	Benzene µg/l	Ethylbenzene µg/l	Cumene µg/l	Naphthalene µg/l	Toluene µg/l	Xylene µg/l	Fluorene µg/l	Phenanthrene µg/l
SHS		**5**	**700**	**1,100**	**100**	**1,000**	**10,000**	**1,500**	**1100**
MW-4	11/1/00	1U	1U	1U	10U	1U	10U	1U	1U
	2/6/01	1U	1U	1U	1U	1U	1U	0.5 U	0.5 U
	5/10/01	1U	1U	1U	1U	1U	1U	0.105U	0.105U
	2/14/02	NA	NA	NA	NA	NA	NA	NA	NA
MW-5	11/2/00	1U	1U	1U	10U	1U	10U	1U	1U
	2/6/01	1U	1U	1U	1U	1U	1U	0.526 U	0.526 U
	5/11/01	1U	1U	1U	1U	1U	1U	0.1U	0.1U
	2/14/02	1U	1U	1U	0.950 J	1U	1U	0.105U	0.105U
MW-6	11/2/00	1U	1U	1U	10U	1U	10U	1U	1U
	2/7/01	1U	1U	1U	1U	1U	1U	0.358J	0.526 U
	5/10/01	1U	1U	1U	1U	1U	1U	0.105U	0.105U
	2/14/02	1U	1U	1U	1U	1U	1U	0.579	0.105U
MW-7	11/2/00	1U	1U	1U	10U	1U	10U	1U	1U
	2/7/01	1U	1U	1U	1U	1U	1U	0.526 U	0.526 U
	5/11/01	1U	1U	1U	1U	1U	1U	0.1U	0.1U
	2/14/02	0.570 J	1U	1U	1U	0.780J	1U	0.105U	0.105U
MW-8	11/1/00	1U	1U	1U	10U	1U	10U	1U	1U
	2/7/01	1U	1U	1U	1U	1U	1U	0.526 U	0.526 U
	5/10/01	1U	1U	1U	1U	1U	1U	0.105U	0.105U
	2/14/02	1U	1U	1U	1U	1U	1U	0.105U	0.105U
MW-9	11/1/00	1U	1U	1U	10U	1U	10U	1U	1U
	2/6/01	1U	1U	1U	1U	1U	1U	0.526 U	0.526 U
	5/10/01	1U	1U	1U	0.600J	1U	1U	0.105U	0.126
	2/14/02	1U	1U	1U	1U	1U	1U	0.111U	0.111U
MW-10	11/1/00	1U	1U	1U	10U	5	10U	1U	1U
	2/6/01	1U	1U	1U	1U	1U	1U	0.526 U	0.158 J
	5/10/01	1U	1U	1U	1U	1U	1U	0.105U	0.116
	2/14/02	1U	1U	1U	1U	1U	1U	0.105U	0.105U
MW-11	11/1/00	1U	1U	1U	1J	8	10U	1U	2
	2/5/01	0.51 J	1U	1U	2.65	1U	1U	0.856	0.633
	5/10/01	1U	1U	1U	2.59	1U	1U	0.280	0.100U
	2/14/02	1U	1U	1U	1U	1U	1U	0.46	0.15
MW-12	11/1/00	0.8J	3	3	4J	39	3J	1U	13
	2/5/01	0.66 J	1 U	1.14	6.3	1 U	1.05	1.71	1.5
	5/10/01	1.35	0.610J	1.17	11.60	1 U	4.54	0.100U	0.100U
	2/14/02	0.580J	1U	0.520J	9.2	1U	1.5	2.62	0.433
RW-1	11/2/00	1U	1U	1U	1J	2	10U	1U	1U
	2/6/01	1U	1U	1U	1.79	1U	1U	0.79	0.5U
	11/2/00	1U	1U	1U	1J	2	10U	1U	1U
	2/14/02	1U	1U	1.1	13	1U	5.2	1.51	0.337

SUPERSCRIPTS:

** = Statewide Health Standards (SHS) medium-specific concentrations for regulated substances in groundwater for residential used aquifers with a TDS<2500, 11/24/01.

QUALIFIERS:

J = Estimated value

NA = Not analyzed; MW-4 was destroyed during repaving which occurred in early 2002.

U = Not detected

TABLE 4-7 SUMMARY OF LNAPL GAUGING AND RECOVERY, SEPTEMBER 2000 TO FEBRUARY 2002
GERMANTOWN U.S. ARMY RESERVE CENTER

Date	Well ID	DW (ft)	DLNAPL (ft)	LNAPL Thickness (ft)	LNAPL Recovered (gal)	Comments
9/27/2000	MW-1	30.14	28.65	1.49	3.5 gal	LNAPL thickness decreased to 0.15 ft following bailing of
9/28/00	MW-1	29.10	28.90	0.21	NA	3.5 gallons LNAPL.
10/5/00	MW-1	29.21	29.01	0.20	NA	
10/31/00	MW-1	28.61	28.47	0.14	0.25 gal	Baildown test performed in MW-1 for 60 minutes
11/27/00	MW-1	28.51	28.49	0.02	NA	Absorbent socks installed in MW-1 and MW-3.
12/5/00	MW-1	29.55	--	--	0.5 gal	Absorbent socks checked and replaced, as necessary.
	MW-3	28.70	--	--	0.25 gal	Guaged with sock removed.
12/20/00	MW-1	29.40	--	--	0.5 gal	Absorbent socks checked and replaced, as necessary.
	MW-3	28.60	--	--	0.25 gal	Guaged with sock removed.
1/15/01	MW-1	29.46	--	--	0.25 gal	Absorbent socks checked and replaced, as necessary.
	MW-3	28.55	--	--	0.1 gal	Guaged with sock removed.
1/23/01	MW-1	29.44	--	--	0.25 gal	Absorbent socks checked and replaced, as necessary.
	MW-3	28.54	--	--	0.1 gal	Guaged with sock removed.
2/5/01	MW-1	29.35	--	--	0.25 gal	Guaged with sock removed; recovery observed to decrease,
	MW-3	28.37	--	--	0.1 gal	LNAPL gauging schedule extended to monthly intervals.
3/14/01	MW-1	29.44	--	--	0.25 gal	Absorbent socks checked and replaced, as necessary.
	MW-3	28.36	--	--	0.25 gal	Guaged with sock removed.
4/24/01	MW-1	29.23	29.19	0.04	0.5 gal	Guaged with sock removed. Absorbent socks removed
	MW-3	28.38	--	--	0 gal	4/24/01 from MW-1 and MW-3 to reevaluate LNAPL recovery rates.
5/11/01	MW-1	29.37	29.27	0.10	NA	No discernable LNAPL thickness in MW-3; absorbent sock
	MW-3	28.47	--	--	NA	reinstalled in MW-1.
7/26/2001**	MW-1	29.42	--	--	0.5 gal	No discernable LNAPL thickness in MW-3; absorbent sock
	MW-3	28.51	--	--	NA	reinstalled in MW-1.
9/25/01	MW-1	29.49	--	--	< 0.1 gal	Guaged with sock removed; absorbent sock replaced in
	MW-3	28.54	--	--	NA	MW-1. MW-3 free of LNAPL for 5 months.
10/31/01	MW-1	29.56	--	--	1,400 gallons groundwater	Removed adsorbent sock, no product observed on the sock or in the well. Checked well with a bailer, small globules of product detected, pumped well with 4-in. submersible (through GAC to ground surface), at 4 gpm for 3 hours at constant drawdown (~36 ft). No product detected in well during pumping, raised and lowered pump to pump off the interface and surge the well. Applied a vacuum for 2.5 hrs, no product observed following vacuum. No separate-phase product recovered. Groundwater appeared relatively clean; with no sheen observed. Absorbent sock not replaced in well.
	MW-3	NA	NA	NA	NA	
12/13/01	MW-1	29.72	29.71	0.01	NA	Gauging only; absorbent sock not installed in either MW-
	MW-3	NA	NA	NA	NA	1 of MW-3.
2/14/02	MW-1	29.63	--	--	NA	Gauging only; absorbent sock not installed in either MW-
	MW-3	28.75	--	--	NA	1 of MW-3.
				Total LNAPL Removed	**7.9**	
				Total Groundwater Removed	**1,400 gallons**	

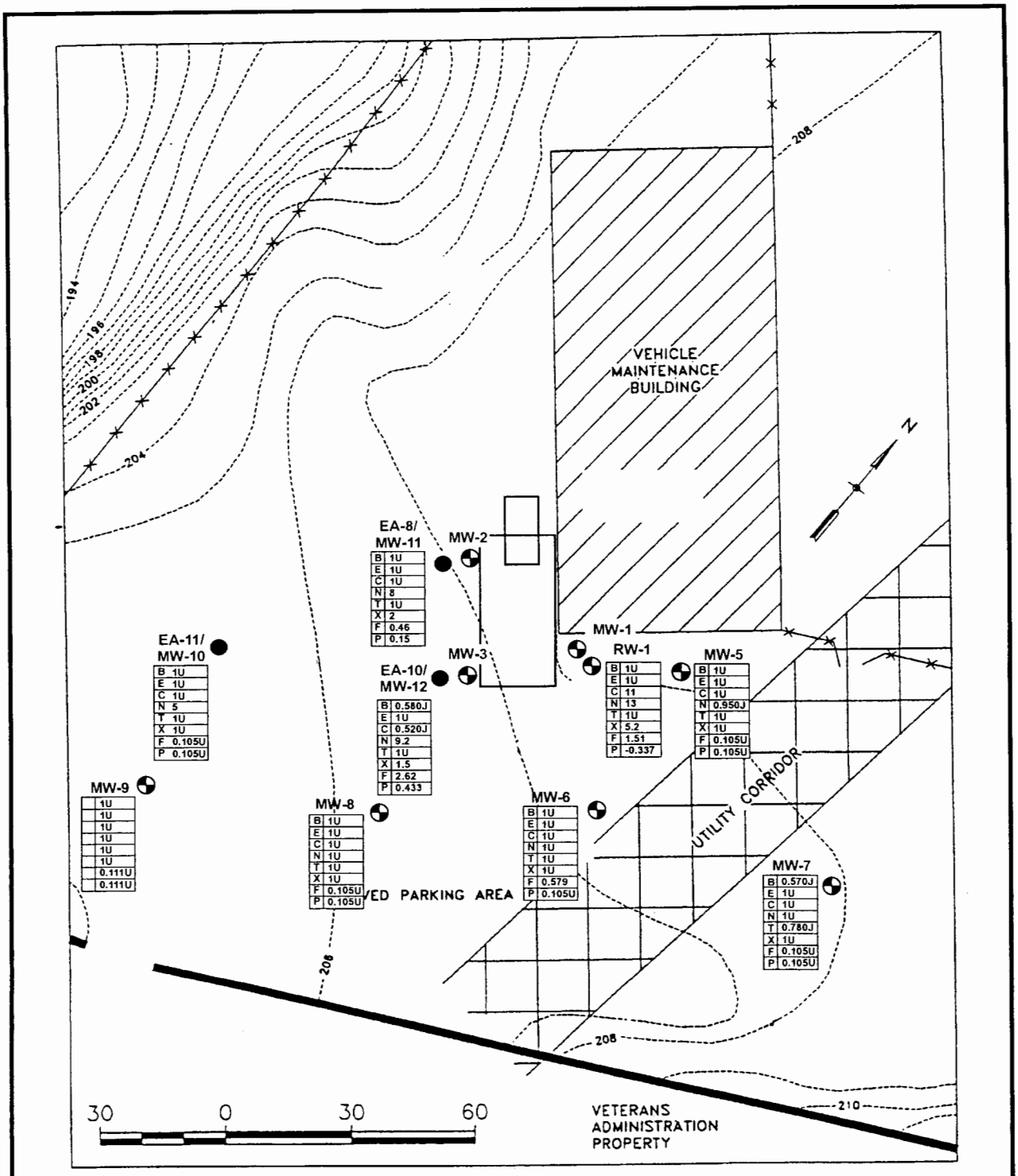
[1]Reference for depth measurements – top of PVC casing

D_{LNAPL} = Depth to LNAPL

D_w = Depth to ground water

-- = No LNAPL removed from well

** Germantown USARC was closed from 15 June to 02 July; therefore, gauging for LNAPL was not performed in July 2001.



LEGEND

- FENCE LINE
- CONCRETE RETAINING WALL
- GROUND ELEVATION CONTOURS (USACE 1995)
- PRE-EXISTING MONITORING WELL (MW), OR RECOVERY WELL (RW)
- SOIL BORING
- SOIL BORING/GROUNDWATER MONITORING WELL

Figure 4-2 February 2002 Groundwater Analytical Results
Germantown U.S. Army Reserve Center
Source: USACE Baltimore District 1995

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5.0 DEMONSTRATION OF ATTAINMENT

5.1 REGULATORY OVERVIEW

The UST case file for the Motor Vehicle Storage Building located at the Germantown USARC facility is currently active. As outlined in Chapter 1, the objective of this investigation was to adequately characterize the site in accordance with Act 32 and Act 2, and identify if any additional remedial actions and/or investigations will be required to support regulatory closure of the storage tank cleanup. Given the historic investigations and remedial actions performed at the site, the following actions must be completed in order to realize these objectives:

1. Assessment of soil and groundwater in the area of contamination for the current applicable PADEP parameters for No. 2 fuel oil.

2. Evaluation of the soil quality data to determine if a demonstration of attainment has been achieved. This demonstration consists of:

    a.) Identification of the volume of soil to which the attainment criteria are applied,

    b.) Identifying the required number and location of sampling points throughout this area, and

    c.) Completion of an analysis of the soil quality data, through direct comparison or statistical tests (if applicable) that the standard has been achieved at the point of compliance (defined as the entire area of contamination for soil).

3. Evaluation of the groundwater quality data to determine if a demonstration of attainment has been achieved. This demonstration consists of:

    a.) Completion of an analysis of the groundwater quality data, through direct comparison that the standard has been achieved at the point of compliance (defined as the property boundary for groundwater), and

    b.) Completion of statistical time trend analysis which evaluates the plume stability and shows that the contaminant concentrations at the point of compliance will not exceed the SHS within 1,000 ft downgradient of the property boundary within 30 years.

In addition, PADEP specifies that the demonstration of attainment for groundwater must be based on eight quarters of groundwater data. As an alternative, PADEP has indicated that it will accept fewer quarterly sampling events [25 Pa. Code § 250.704(d)(1-4(ii))], if there is adequate spatial monitoring of the plume in upgradient and downgradient locations, parameters affecting the fate and transport have been fully evaluated, concentrations are below the SHS in groundwater monitoring wells located along the downgradient property boundary, and the age of

the plume is sufficiently well known to permit a judgment regarding its stability or remedial activities including source removal.

5.2 REMEDIAL ACTIVITIES PERFORMED AT THE SITE

As summarized in Chapter 2, remedial actions taken at the site have consisted of the removal of the source of petroleum (i.e., the USTs), excavation of the surrounding petroleum-impacted soil, and passive LNAPL recovery using absorbent socks. Other than the performance of quarterly groundwater sampling events to monitor the contaminant plume, no additional remedial actions have been performed at the site since that time.

5.3 DEMONSTRATION OF ATTAINMENT FOR SOIL

5.3.1 Point of Compliance

In accordance with Act 2, the POC for soil consists of the entire area of contamination. With regards to the Germantown USARC Motor Vehicle Storage Building, this area comprises the extent of the former excavation and is illustrated on Figure 2-1. An approximate volume of soil (dimensions 22 ft by 15 ft by 20 ft deep) was presumably removed from this area.

5.3.2 Demonstration of Attainment

Soil boring locations were selected during the site visit with USACE and PADEP in August 2000, and were completed in October 2000 in accordance with the *Remedial Action Plan.* Eleven soil samples and one duplicate were submitted for laboratory analysis of the required PADEP parameters for #2 fuel oil.

In total, eighteen soil samples were collected during the September 1995 soil investigation; twelve soil samples were collected during the EA investigation. Soil samples collected during the 1995 investigation were submitted for BTEX, naphthalene, fluorene, and phenanthrene; soil samples collected during the October 2000 investigation were submitted for laboratory analysis of BTEX, cumene, naphthalene, fluorene, and phenanthrene (PADEP parameters for #2 fuel oil USTs). During each sampling event, soil samples were collected from in and surrounding the former UST excavation. Sample locations conducted as part of this investigations were selected during the site visit with USACE and PADEP in August 2000.

One soil sample (EA-8) collected from the former UST excavation area exhibited a concentration of naphthalene (35,000 mg/kg) above the applicable PADEP residential SHS of

25,000 mg/kg (soil to groundwater standard). This single exceedence is less than one order of magnitude (or 10 times) the applicable PADEP residential SHS. Further, none of the remaining 29 soil samples (97%) exhibited concentrations of naphthalene or the remaining PADEP #2 fuel oil parameters above the applicable SHS.

The soil sample exhibiting the slightly elevated naphthalene concentrations was collected from the base of the former UST excavation, from an approximate one foot black stained layer, situated at a depth of approximately 23 to 24 ft below grade. Field screening and laboratory analysis of soil situated at shallower depths within this boring, or at similar depths in borings surrounding EA-8, did not exhibit concentrations of naphthalene above the applicable PADEP SHS. Furthermore, the concentrations of naphthalene in groundwater samples (situated at a depth of approximately 28 feet) collected from the monitoring well which was installed in boring EA-8 (MW-11) were consistently below the applicable PADEP SHS (100 ug/l), ranging from non-detectable concentrations to 2.65 ug/l. Based on the results of this and prior environmental investigations, the naphthalene-impacted soil appears to be localized to immediate vicinity of boring EA-8, at an approximate depth of 23 to 24 ft below grade, and does not appear to have impacted groundwater in this area.

5.4 DEMONSTRATION OF ATTAINMENT FOR GROUNDWATER

5.4.1 Point of Compliance

The POC for groundwater is the closest downgradient property boundary from the site, which is approximately 450 ft east of MW-6.

5.4.2 Demonstration of Attainment

Groundwater attainment is achieved when time-trend analysis shows that contaminant concentrations at the POC do not exceed the PADEP SHS. As identified in Chapter 4, no elevated concentrations were detected in groundwater monitoring wells MW-4 through MW-12, which are situated between the former UST area and the downgradient property boundaries (POC).

In addition to the above, the demonstration of attainment for groundwater requires the completion of statistical time trend analysis which evaluates the plume stability and shows that the contaminant concentrations at the point of compliance will not exceed the SHS within 1,000 ft downgradient of the property boundary within 30 years.

In order to evaluate the dissolved phase plume stability and the potential for dissolved phase plume to migrate offsite in the future, EA performed a time-trend analysis by plotting the concentrations of the contaminants of concern over time and by using *Quick Domenico.xls* (QD) which is a Microsoft Excel spreadsheet application of the analytical model for the transport of a decaying contaminant species proposed by Domenico (1987).

QD calculates the concentration of contaminants at any point and time downgradient of a source area of known size and concentration. QD is intended for dissolved organic contaminants whose fate and transport can be described or influenced by first order decay and reaction with organic carbon in the soil. The model allows for first order decay, retardation, and three-dimensional dispersion.

The concentrations of each analyte of concern (benzene, cumene,) were modeled using QD (Appendix G). As shown, none of these contaminants are estimated to exceed the PADEP SHS at the POC within 30 years.

In accordance with Act 2, current site conditions support a demonstration of attainment for groundwater at the site.

6.0 SUMMARY AND CONCLUSIONS

This remedial action completion report provides an overview of the historic UST removal effort, previous investigation results, and field activities performed by EA in from September 2000 to February 2002. Field activities completed during this time included the advancement of 12 soil borings, installation of 3 monitoring wells, *in situ* hydraulic conductivity testing, quarterly groundwater sampling, and passive and active LNAPL recovery.

6.1 SOIL

Eighteen soil samples were collected during the September 1995 soil investigation; twelve soil samples were collected during the EA investigation. Soil samples collected during the 1995 investigation were submitted for BTEX, naphthalene, fluorene, and phenanthrene; soil samples collected during the October 2000 investigation were submitted for laboratory analysis of BTEX, cumene, naphthalene, fluorene, and phenanthrene (PADEP parameters for #2 fuel oil USTs). During each sampling event, soil samples were collected from in and surrounding the former UST excavation. Sample locations conducted as part of this investigations were selected during the site visit with USACE and PADEP in August 2000.

One soil sample (EA-8) collected from the former UST excavation area exhibited a concentration of naphthalene (35,000 mg/kg) above the applicable PADEP residential SHS of 25,000 mg/kg (soil to groundwater standard). None of the remaining 29 soil samples (97%) exhibited concentrations of naphthalene or the remaining PADEP #2 fuel oil parameters above the applicable SHS.

The soil sample exhibiting the slightly elevated naphthalene concentrations was collected from the base of the former UST excavation, from an approximate one foot black stained layer, situated at a depth of approximately 23 to 24 ft below grade. Field screening and laboratory analysis of soil situated at shallower depths within this boring, or at similar depths in borings surrounding EA-8, did not exhibit concentrations of naphthalene above the applicable PADEP SHS. Furthermore, the concentrations of naphthalene in groundwater samples (situated at a depth of approximately 28 feet) collected from the monitoring well which was installed in boring EA-8 (MW-11) were consistently below the applicable PADEP SHS (100 ug/l), ranging from non-detectable concentrations to 2.65 ug/l. Based on the results of this and prior environmental investigations, the naphthalene-impacted soil appears to be localized to immediate vicinity of boring EA-8, at an approximate depth of 23 to 24 ft below grade, and does not appear to have impacted groundwater in this area.

6.2 GROUNDWATER

Twelve groundwater monitoring wells are currently located at the site; three of the groundwater monitoring wells (MW-1, MW-2, and MW-3) are screened below the groundwater interface and therefore were not sampled as part of the quarterly groundwater sampling events. In total, eight groundwater sampling events have been performed at the site. During each event, groundwater was sampled from each well and submitted for laboratory analysis of the required PADEP parameters for #2 fuel oil USTs. With the exception of benzene and naphthalene (identified at concentration in excess the applicable SHS in MW-3 in 1995), none of the required analytes were identified in groundwater samples at concentrations above the applicable SHS in any of the eight contiguous groundwater sampling events.

As required by PADEP, and in accordance with Act 2, EA performed a time-trend analysis using QD to evaluate the dissolved phase plume stability and the potential for the dissolved phase plume to migrate offsite in the future.

Results of the QD analysis indicates that the dissolved phase petroleum contaminant plume will not migrate beyond the downgradient property boundary within 30 years.

6.3 LNAPL GAUGING AND RECOVERY

In October 2000, LNAPL was present in MW-1 (1.49 ft) and MW-3 (0.15 ft). In an effort to mitigate the LNAPL present in MW-1 and MW-3, EA performed passive and active LNAPL recovery efforts (continuous passive recovery for a period of approximately 12 months from October 2000 to October 2001, supplemented by pumping of MW-1 under vacuum conditions in October 2001). In total, approximately 8 gallons LNAPL and 1,400 gallons of groundwater were recovered using absorbent socks and pumping. Results of the most recent gauging of monitoring wells MW-1 and MW-3 have shown no occurrence of LNAPL in either well.

6.4 CONCLUSIONS

Based on the results of prior site investigations, and the results collected by EA during the September 2000 to February 2002 site characterization/remedial action effort, site conditions appear to support a demonstration of attainment for soil and groundwater at the site. Therefore, EA requests that PADEP issue closure of the UST case file for the site.

Specifically, the source of the impact (UST, associated petroleum impacted soil and LNAPL) appear to have removed, detected residual concentrations of petroleum constituents in soil are

well below the applicable SHS or appear localized in nature, and no concentrations of PADEP #2 fuel oil parameters have been reported above the applicable SHS in groundwater in the last seven quarterly sampling events, and analysis of the plume using QD indicates that the dissolved-phase constituents will not migrate beyond the downgradient property boundary within 30 years.

EA further recommends that the existing groundwater monitoring wells be closed in accordance with PADEP requirements.

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APPENDIX A

SOIL BORING LOGS

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: Center of former UST Excavation
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method: Direct push (Geoprobe)		Boring No. EA-1
Sampling Method: 2" x 4' Macrocore sampler		Sheet 1 of 1

Water Level				Drilling Start	Drilling Finish
Time					
Date				0925	1030
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
	50			0.0 0.0		0-4	FILL	6" GRAVEL 1' Black/grey cobbles, fine SAND and SILT
	50			0.0 0.0		4-8	FILL	Wet; Black/grey fine SAND and SILT, some gravel and cobbles No petroleum odor observed
	50			0.0 93.1		8-12	FILL	Dry; medium to fine SAND; 6" band of black/grey sand exhibiting fuel oil odor at 8'
	60			0.0 127		12-16	FILL	Wet; CLAYEY SILT, some gravel Moist; grey/green medium to fine SAND, some gravel, fuel oil odor
	75		EA-1	283 216		16-20	FILL	Moist; fine SAND and silt, some clay, cobbles, micaceous, brick, asphalt. Visible product in pore spaces, weathered fuel oil odor
	100			243 54		20-24	FILL	Wet; Reddish brown micaceous fine SAND and SILT, gravel, cobbles, brick, fuel oil odor
	100			5.0 6.0		24-28	SM	Wet; fine SAND and silt, some clay, cobbles, micaceous, faint fuel oil odor
								End boring at 28' (refusal)
								Groundwater at 18 to 20 ft
								Sample EA-1 collected from 16' - 18' at 1010

Logged by: Denise Sullivan Date: 09/27/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: Center of former UST excavation
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method:		Boring No.
Direct push (Geoprobe)		**EA-2**
Sampling Method:		
2" x 4' Macrocore sampler		Sheet 1 of 1

				Drilling	
Water Level				Start	Finish
Time				1040	1115
Date					
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
	70			0.0		0-4	FILL	4" GRAVEL 2' black/grey fine SAND and SILT, cobbles
	60			0.0		4-8	FILL	Dark grey SILTY SAND, some black/grey cobbles
	50			0.0		8-12		
	60			1.4		12-16		
				1.8			FILL	SILTY SAND, damp
	60			0.4		16-20	FILL	SILTY CLAY, gravel, damp, w/ black/grey cobbles, weathered micaceous schist
				1.4				
	60		EA-2	71		20-24	FILL	Dark grey SILTY SAND, some gravel and cobbles, fuel oil odor, damp
				212				
	100			64		24-28	GP	Wet, SAND and gravel, fuel oil odor
				173			GM	Brown/black SILTY SAND, fuel oil odor
								End boring at 28' (refusal) Groundwater at 24'.
								Sample EA-2 collected from 22' to 24' at 1115

Logged by: Tony Rubino Date: 09/27/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: SE perimeter of UST excavation
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method: Direct push (Geoprobe)		Boring No. EA-3
Sampling Method: 2" x 4' Macrocore sampler		Sheet 1 of 1

Water Level				Drilling Start	Drilling Finish
Time					
Date				1125	1200
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
	100			0.0		0-2	Fill	Lt. grey COBBLES, brown and black sand
	100			0.0		2-4	GP	Brown to lt. brown SAND, loose, some weathered micaceous schist
	100			0.0		4-8	GM	Moist; brown, SILTY SAND, weathered micaceous schist, loose some gravel
	40			0.0		8-12	GM	Moist; lt. to dk. brown, SILTY SAND, weathered micaceous schist, some gravel
	90			0.0		12-15		
	90			0.0		15-16	GM	Moist; grey SILTY SAND grading to brown silty sand, lt. grey cobbles, loose
	100			0.0		16-18	SM	Moist; Lt. to dk. brown SILTY SAND, loose
	100			1.6		18-20	SM	Moist; dk. brown SILTY SAND, mottled red
	100			1.5		20-22	GM	Lt. brown SILTY SAND w/ dk. grey micaceous schist, cobbles, gravel
	100			1.0		22-24	SM	Dark grey/brown, SILTY SAND, damp, plastic
	90		EA-3	1.1		24-27		
								End boring at 27' (Refusal)
								Groundwater not encountered
								Sample EA-3 collected from 24' to 26' at 1150.

Logged by: Tony Rubino Date: 09/27/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: E perimeter of UST excavation
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method:		Boring No.
Direct push (Geoprobe)		EA-4
Sampling Method:		
2" x 4' Macrocore sampler		Sheet 1 of 1

				Drilling	
Water Level				Start	Finish
Time				1300	1340
Date					
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
	60			3.2 12.4		0-4	Fill	Lt. brown SILTY SAND, gravel, black staining, loose, no odor
	70			10.1		4-8	SM	lt. brown SILTY SAND, loose, no staining
	70			2 3.3		8-12		11-12' black staining, no petroleum/chemical odor
	70			7.3 2.8		12-16		12-12.5' black staining, no petroleum/chemical odor
	60			2.3 5.0		16-20	GM	Dk. grey SANDY SILT, weathered schist gravel, loose
	60			3.6 13		20-24		
	100		EA-4	157 150		24-28	SM	25-28' Grey to brown SILTY SAND, loose, damp
								End boring at 28' (Refusal)
								Sample EA-4 collected from 24' at 1350.

Logged by: Tony Rubino Date: 09/27/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Location: E of UST excavation along utility corridor
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method: Direct push (Geoprobe)		Boring No. EA-5
Sampling Method: 2" x 4' Macrocore sampler		Sheet 1 of 1

				Drilling	
Water Level				Start	Finish
Time				1345	1415
Date					
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
	100			18.2 3.6		0-4	Fill	Grey to brown SANDY Gravel fill, loose, with gravel fragments of sediment
	100			2.2 2.0		4-8	GM	Reddish brown SANDY SILT w/ weathered schist gravel, loose
	90			1.7 3.9		8-12		
	100			4.8 1.7		12-16		
	100			0.7 4.6		16-20	GM	Dark brown SANDY SILT, weathered schist gravel, loose, damp
	100			2.8 5.4		20-21	SM	Grey SILTY SAND, mottled red
	100			3.7 1.5		21-24	SM	Lt brown SILTY SAND, loose, moist
	100		EA-5			24-26.5	GM	Lt brown SILTY SAND w/ weathered schist gravel, loose, moist
								End boring at 26.5' (Refusal)
								Sample EA-5 collected from 24'-26' at 1430

Logged by: Tony Rubino Date: 09/27/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: Center of former UST
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method:		Boring No.
Direct push (Geoprobe)		**EA-6**
Sampling Method:		
2" x 4' Macrocore sampler		Sheet 1 of 1

				Drilling	
Water Level				Start	Finish
Time				1430	1500
Date					
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
	90			1.9		0-4	Fill	0-4" - GRAVEL
				1.5			SM	4"-4' - brown SANDY SILT, weathered schist gravel, stained black from 2.5-3.5'. loose, dry
	90			3.7		4-8	GM	Brown SILTY SAND, weathered schist gravel, loose, moist
				2.8				Mottling at 8'
	90			2.3		8-12	GM	Grey/brown SILTY SAND, weathered schist gravel, loose, moist
				1.7				
	100			3.8		12-16	GM	Brown SILTY SAND w/ weathered schist gravel, loose, moist
				3.6				
	90			2.7		16-20	GM	Lt brown to grey SILTY SAND, weathered schist gravel, moist
				3.6				loose
	90			4.9		20-24	GM	Grey SILTY SAND, weathered schist gravel moist, loose mottled red
				2.6				
	90			3.6		24-28	SM	Light grey fine SILTY SAND, some red mottling, loose to medium
			EA-6	4.5				dense, moist
								End boring at 28' (Refusal)
								Sample EA-6 collected from 26-28' at 1510

Logged by: Tony Rubino Date: 09/27/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: NW perimeter of former UST
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method: Direct push (Geoprobe)		Boring No. EA-7
Sampling Method: 2" x 4' Macrocore sampler		Sheet 1 of 1

				Drilling	
Water Level				Start	Finish
Time				1510	1605
Date					
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet		USCS Log	Surface Conditions: Asphalt pavement
	100			1.0		0-4		Fill	0-1' GRAVEL
				1.8				GM	Brown SILTY SAND, weathered schist gravel, loose, moist.
	60			1.9		4-8		GM	Black staining @ 1.5-2' and 4'
				3.3					
	55			3.0		8-12		GM/	
				2.5				SM	Grey SILTY SAND, loose, damp
	80			3.0		12-16		GM	Brown SILTY SAND, weathered schist gravel, mottled red, loose,
				2.0					damp.
	100			2.1		16-20		GM	
				5.5					17-20' - grey SILTY SAND, schist gravel, loose to medium dense, damp
	80			2.4		20-24		GM/	Reddish brown SILTY SAND, weathered schist gravel, loose, damp
				4.2				SM	Grey SILTY SAND, black staining @ 19'. Loose, damp
	90			2.3		24-28		SM	Grey SILTY SAND, mottled red, damp, loose to medium dense
			EA-7	2.8					
									End boring at 28' (Refusal)
									Sample EA-7 collected from 26'-28' at 1610

Logged by: Tony Rubino Date: 09/27/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: W perimeter of former UST excavation
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method:		Boring No.
Direct push (Geoprobe)		**EA-8**
Sampling Method:		
2" x 4' Macrocore sampler		Sheet 1 of 1

				Drilling	
Water Level				Start	Finish
Time				0840	0930
Date					
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
				0.6			Fill	GRAVEL, faint petroleum odor present from 3-4'
	100			56.7		0-4	GM	Brown SILTY SAND, weathered schist gravel stained black w/ odor, loose, damp.
	40			90.8 4.6		4-8	GM	Brown SILTY SAND, stained black, weathered schist gravel, loose, wet.
	90			6.9 5.6		8-12	GM	Brown SILTY SAND, weathered schist gravel, moist, loose
	100			7.0 3.9		12-16	GM	
	90			6.8 25		16-20	GM	
	90		EA-8	7.8 121		20-24	GM	Brown SILTY SAND, weathered schist gravel, loose, wet from 20-21.5', damp from 21.5-24', mottled red, stained black from 23-24'
				5.8 65.9		24-28	GM	Stained black brown SILTY SAND, medium dense, moist
								End boring at 28' (Refusal)
								Sample EA-8 collected from 22'-24' at 0930

Logged by: Tony Rubino Date: 09/28/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: SW perimeter of former UST excavation
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method: Direct push (Geoprobe)		Boring No. EA-9
Sampling Method: 2" x 4' Macrocore sampler		Sheet 1 of 1

Water Level				Drilling Start	Drilling Finish
Time				0955	1000
Date					
Reference				1200	1245

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
								Refusal @ 1' offset 1' west
								Refusal @ 1' offset 3' west
								Refusal @ 1' moved to EA-10 @ 1000
								Returned after completing EA-11 @ 1200
	90			1.5		0-4	Fill	0-3.5' gravel FILL, crushed asphalt, black, loose, dry slight fuel oil odor
							SM	3.5-4' brown SILTY SAND, loose, dry
	70			2.1		4-8	GM	Brown SILTY SAND, weathered schist gravel, loose, damp to wet, stained black @ 4' w/very slight fuel oil odor
	95			1.5		8-12	GM	8-10' reddish brown SILTY SAND, weathered schist gravel, loose, wet
								10-12' light brown, SILTY SAND, loose, moist, weathered schist
	100			1.7		12-16	SM/	12-14' grey SILTY SAND, wet, loose
								14-16' light brown SILTY SAND, weathered schist gravel, loose, damp
	60			2.5		16-20	GM	Dark brown SILTY SAND, weathered schist gravel, loose,
	75		EA-9	2.4		24-27.5		Dark brown SILTY SAND, trace weathered schist gravel
								End boring at 27.5' (Refusal)
								Sample EA-9 collected from 27.5' at 1250

Logged by: Tony Rubino Date: 09/28/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Location: S perimeter of former UST excavation
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC

Drilling Method:	Boring No.
Direct push (Geoprobe)	**EA-10**
Sampling Method:	
2" x 4' Macrocore sampler	Sheet 1 of 1

				Drilling	
Water Level				Start	Finish
Time				1000	1038
Date					
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
	80			2.6		0-4	Fill/ SM	Gravel fill w/ brown SILTY SAND, loose, damp, stained black 2', no odor.
	95			143		4-8	GM	Lt. Brown SILTY SAND weathered schist, loose, damp, slight fuel oil odor
	100			4.9		8-12	GM	Lt. Brown SILTY SAND weathered schist, loose, damp, slight fuel oil odor, lignite
	90			1.7		12-16	SM	Brownish green SILTY SAND, loose, damp
	90			113 1.5		16-20	GM	Brown SILTY SAND, weathered schist gravel, loose, damp
	90		EA-10	201 172		20-24	GM	Same as above becoming medium dense @ 21-24', black staining @ 23' with slight fuel oil odor
			DUP-1	86 100		24-28		
								End boring at 27.5' (Refusal)
								Sample EA-10/DUP-1 collected from 22'-26'

Logged by: Tony Rubino Date: 09/28/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: SW downgradient property boundary
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method: Direct push (Geoprobe)		Boring No. EA-11
Sampling Method: 2" x 4' Macrocore sampler		Sheet 1 of 1

Water Level				Drilling Start	Drilling Finish
Time				1045	1145
Date					
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet	USCS Log	Surface Conditions: Asphalt pavement
	100			1.4		0-4	Fill	0-1.5' - Gravel fill, some sand, loose, dry, black staining, slight fuel odor (crushed asphalt).
							GM	1.5-4' - brown SILTY SAND, weathered schist gravel, loose, damp.
	100			3.3		4-8	GM	Brown SILTY SAND, weathered schist gravel, loose, damp
	90			1.9		8-12		Refusal @ 11', little recovery, offset 3' west
	100			2.4		12-16		
	100			2.6		16-20		
	80			3.0 2.4		20-24		
			EA-11	0.6 0.8		24-28		Grey brown SILTY SAND, medium dense, damp. Stained black @ 27', no odor.
								End boring at 27' (Refusal)
								Sample EA-11 collected from 27' at 1150

Logged by: Tony Rubino Date: 09/28/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

EA Engineering, Science,
and Technology, Inc.

LOG OF SOIL BORING

Location: E of UST excavation
Surface Elevation:
Casing Above Sur:
Reference Elevation:
Reference Desc:

Job. No.	Client:	Location:
60957.76	USACE	Germantown USARC
Drilling Method:		Boring No.
Direct push (Geoprobe)		EA-12
Sampling Method:		
2" x 4' Macrocore sampler		Sheet 1 of 1

				Drilling	
Water Level				Start	Finish
Time				1335	1405
Date					
Reference					

Sample Type	Percent Recvrd	Dpth. Csg.	Sample No.	PID ppm	Blows per 6 in.	Depth in Feet		USCS Log	Surface Conditions: Asphalt pavement
	85			15.8 0.6		0-4		Fill GM	Gravel fill, dark brown SILTY SAND, 4" stained black at 2.5' w/ slight odor, mottled red, loose, damp Orange brown to grey brown SILTY SAND, loose, damp, weathered schist gravel
	100			20.4		8-12		GM	Dark brown SILTY SAND weathered schist gravel, loose, damp, stained black @ 11.5' w/ slight fuel odor
	80			1.7		12-16			Greenish brown SILTY SAND, loose, damp
	90			0.3		16-20			Dark brown SILTY SAND, weathered schist gravel, loose, damp, mottled red
	100			9.5		20-24			
									End boring @ 24'

Logged by: Tony Rubino Date: 9/28/2000

Drilling Contractor: Target Environmental Inc. Driller: Bob Gorman

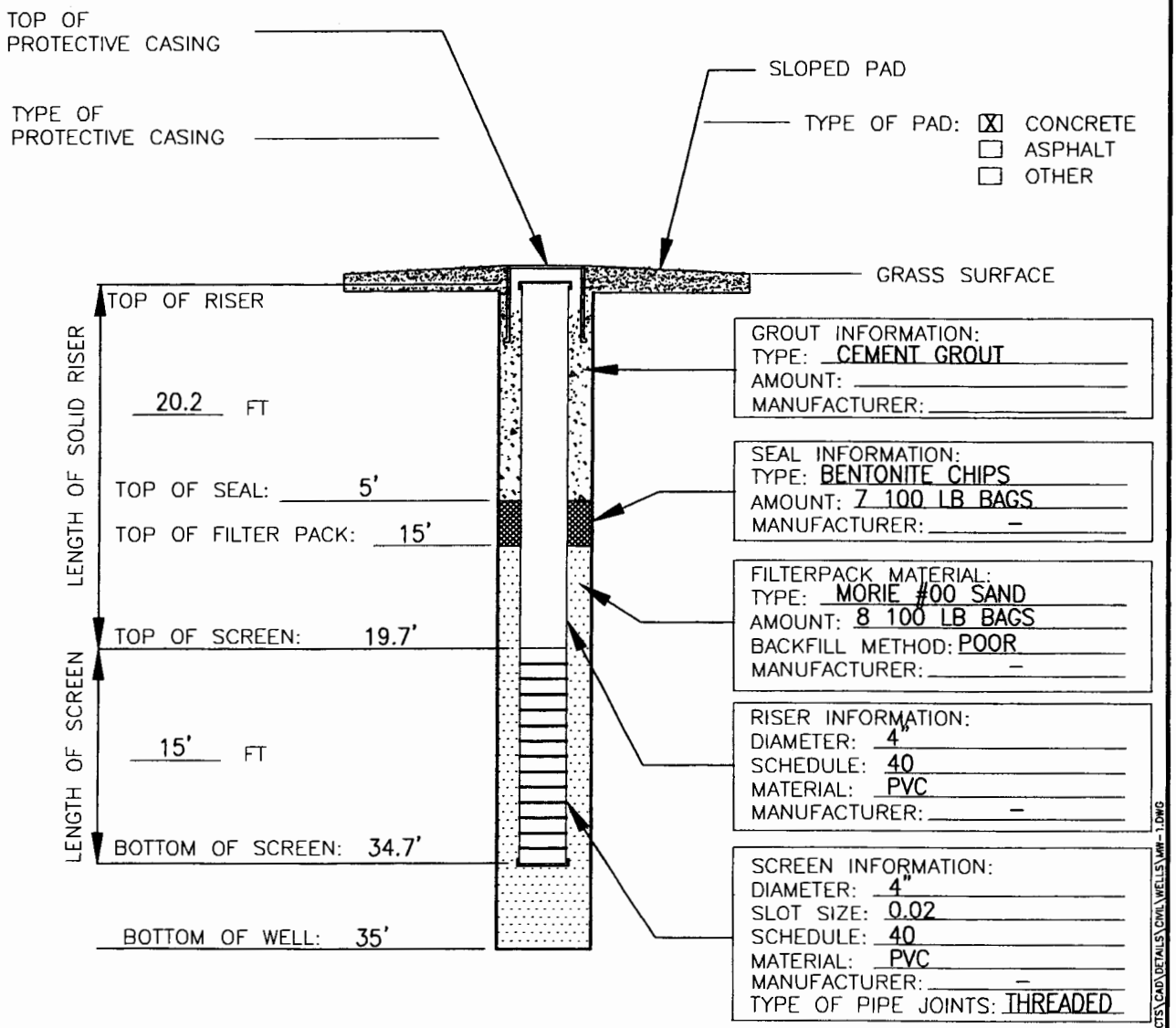
APPENDIX B

GROUNDWATER MONITORING WELL CONSTRUCTION LOGS

RECORD OF MONITORING WELL CONSTRUCTION

(FLUSH MOUNT)

EA ENGINEERING, SCIENCE, AND TECHNOLOGY	MONITORING WELL/SOIL BORING ID NO.: EA-10
PROJECT TITLE/PROJECT NO.: 60957.76	WELL INSTALLATION: START 1300, FINISH 1545
	TIME: 1300 / 1545
	DATE: 10/06/2000
SITE NAME: GERMANTOWN USARC	DEPTH TO WATER (FT TOC):
SITE GEOLOGIST: TONY RUBINO	DRILLING METHOD: 8" HOLLOW STEM AUGER



RECORD OF MONITORING WELL CONSTRUCTION

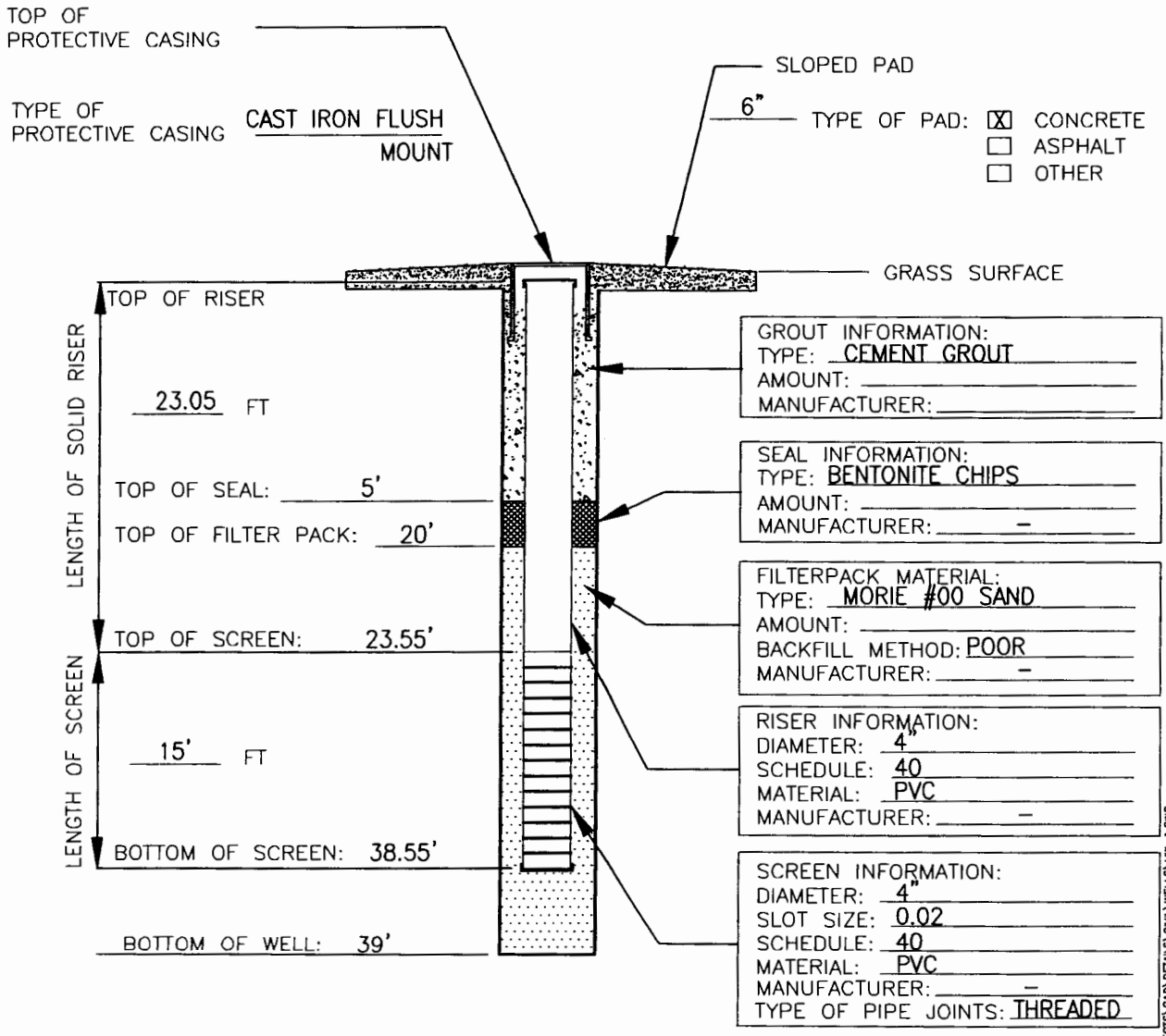
NOTES: 1. ALL MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE UNLESS OTHERWISE INDICATED
2. ALL FEATURES NOT TO SCALE

FILE: Q:\PROJECTS\CAD\DETAILS\CIVIL\WELLS\MW-1.DWG

RECORD OF MONITORING WELL CONSTRUCTION

(FLUSH MOUNT)

EA ENGINEERING, SCIENCE, AND TECHNOLOGY	MONITORING WELL/SOIL BORING ID NO.: EA-11
PROJECT TITLE/PROJECT NO.: 60957.76	WELL INSTALLATION: START 1050, FINISH 1215
	TIME: 1050 / 1215
	DATE: 10/06/2000
SITE NAME: GERMANTOWN USARC	DEPTH TO WATER (FT TOC):
SITE GEOLOGIST: TONY RUBINO	DRILLING METHOD: 8" HOLLOW STEM AUGER



RECORD OF MONITORING WELL CONSTRUCTION

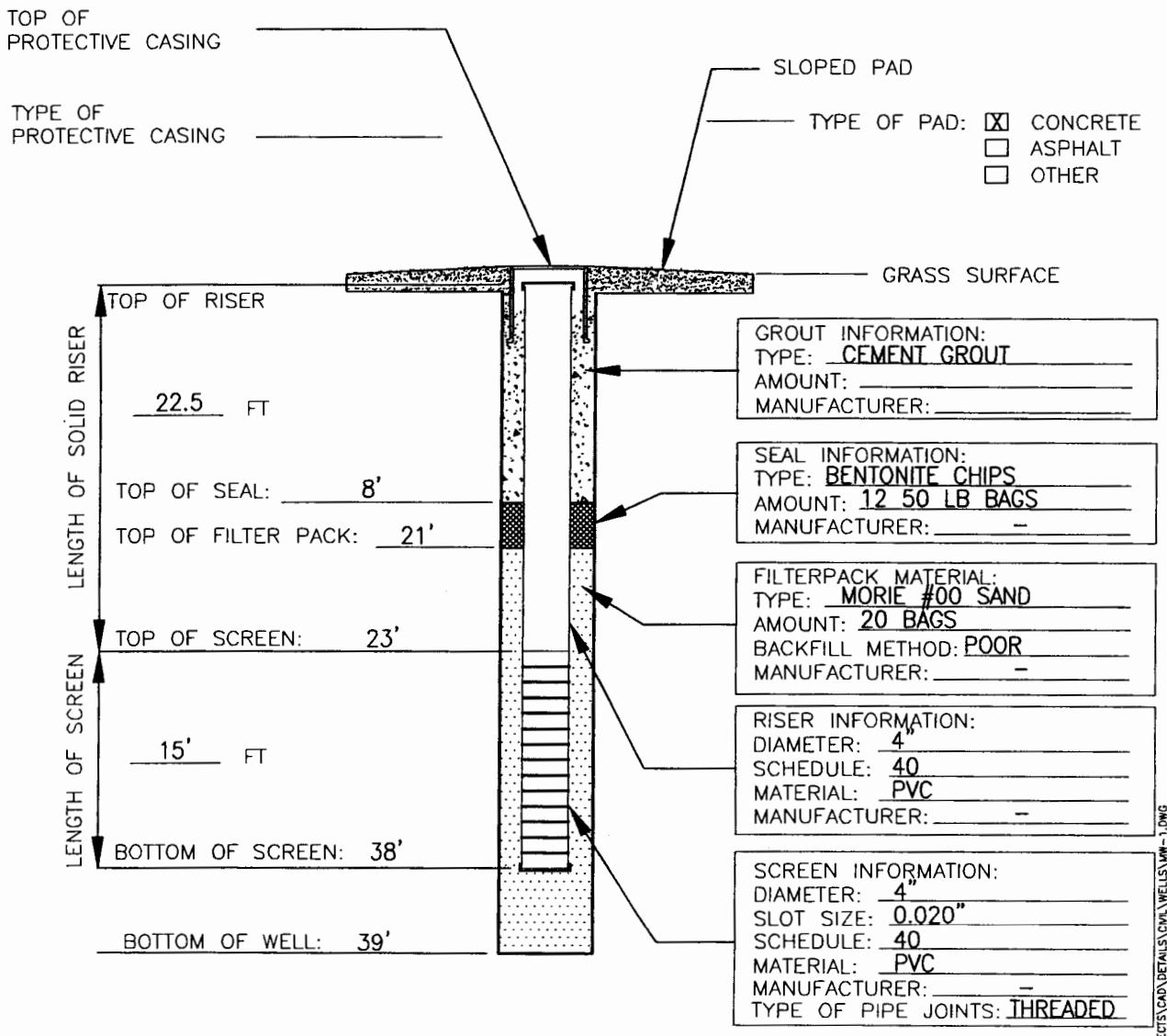
NOTES: 1. ALL MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE UNLESS OTHERWISE INDICATED
2. ALL FEATURES NOT TO SCALE

FILE: Q:\PROJECTS\CAD\DETAILS\CIVIL\WELLS\MW-1.DWG

RECORD OF MONITORING WELL CONSTRUCTION

(FLUSH MOUNT)

EA ENGINEERING, SCIENCE, AND TECHNOLOGY	MONITORING WELL/SOIL BORING ID NO.: EA-12
PROJECT TITLE/PROJECT NO.: 60957.76	WELL INSTALLATION: START 820, FINISH 1015
SITE NAME: GERMANTOWN USARC	DATE: 10/06/2000
SITE GEOLOGIST: TONY RUBINO	DEPTH TO WATER (FT TOC):
	DRILLING METHOD: 8" HOLLOW STEM AUGER



RECORD OF MONITORING WELL CONSTRUCTION

NOTES: 1. ALL MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE UNLESS OTHERWISE INDICATED
2. ALL FEATURES NOT TO SCALE

FILE: Q:\PROJECTS\CAD\DETAILS\CIVIL\WELLS\WM-1.DWG

APPENDIX C

FIELD RECORDS OF WELL GAUGING, PURGING AND SAMPLING

EA

FIELD RECORD OF WELL DEVELOPMENT

WELL I.D.: MW-10
WELL CONDITION:

SITE NAME: GERMANTOWN
WEATHER: 65°; CLEAR

GAUGE DATE:
SOUNDING METHOD:
STICK UP/DOWN (ft):

GAUGE TIME:
MEASUREMENT REF:
WELL DIAMETER (in.):

DEVELOPMENT DATE: 10/11/00
DEVELOPMENT METHOD:

DEVELOPMENT TIME: 11:00
FIELD TECHNICIAN: JASON DANCE

WELL VOLUME (4-in.well, ~~12~~ 8-in boring)

$(0.26\ gal/ft^2)(6.70\ ft)(0.30)(7.48)$

A. WELL DEPTH (ft): 34.07
B. DEPTH TO WATER (ft): 27.37
C. LIQUID DEPTH (ft) (A-B): 6.70
D. SAND PACK VOLUME (~~1.57*C~~): 3.90
E. CASING VOLUME (gal) (.65*C): 4.36
F. WELL VOLUME (gal) (E+D): 8.27

VOLUME	BEGINNING	1	2	3	4	5
TIME (min)	1100	1115	1132	1134	1158	1200
DEPTH TO WATER (ft)						
RATE (GPM)	-	<1	<1	<1	<1	<1
VOLUME PURGED (gal)	-	5	5	7	9	11
pH	-	6.07	5.94	5.63	5.97	5.78
TEMPERATURE (C)	-	16.96	17.58	15.50	17.48	16.31
CONDUCTIVITY (Φmhos/cm)	-	.807	.958	1.014	1.066	1.046
TURBIDITY	-	>998.7	404.4	214.1	303.5	103.1

TOTAL QUANTITY OF WATER REMOVED (gal): 28 gal.

COMMENTS AND OBSERVATIONS: WELL WENT DRY SEVERAL TIMES, DEVELOPMENT WATER VISIBLY FREE OF FINES AND CLEAR. 2 HRS. PUMP RATE = 16PM

EA

FIELD RECORD OF WELL DEVELOPMENT

WELL I.D.: MW-10 (cont.) SITE NAME: GETTYSTOWN
WELL CONDITION: _____ WEATHER: _____

GAUGE DATE: _____ GAUGE TIME: _____
SOUNDING METHOD: _____ MEASUREMENT REF: _____
STICK UP/DOWN (ft): _____ WELL DIAMETER (in.): _____

DEVELOPMENT DATE: 10/11/02 DEVELOPMENT TIME: 1100
DEVELOPMENT METHOD: _____ FIELD TECHNICIAN: _____

WELL VOLUME (4-in.well, 12-in boring)

A. WELL DEPTH (ft): _____
B. DEPTH TO WATER (ft): _____
C. LIQUID DEPTH (ft) (A-B): _____
D. SAND PACK VOLUME (1.57*C): _____
E. CASING VOLUME (gal) (.65*C): _____
F. WELL VOLUME (gal) (E+D): _____

VOLUME	BEGINNING	1	2	3	4	5
TIME (min)	1247	1248	1250			
DEPTH TO WATER (ft)						
RATE (GPM)	1	1	1			
VOLUME PURGED (gal)	25	26	28			
pH	5.66	5.58	5.69			
TEMPERATURE (C)	16.19	15.97	15.82			
CONDUCTIVITY (Φmhos/cm)	1.066	1.049	1.068			
TURBIDITY	33.2	23.9	22.6			

TOTAL QUANTITY OF WATER REMOVED (gal): 28

COMMENTS AND OBSERVATIONS: _____

EA

FIELD RECORD OF WELL DEVELOPMENT

WELL I.D.: MW-11
WELL CONDITION:
SITE NAME: GERMANTOWN
WEATHER: 65° CLEAR

GAUGE DATE:
SOUNDING METHOD:
STICK UP/DOWN (ft):
GAUGE TIME:
MEASUREMENT REF:
WELL DIAMETER (in.): 4

DEVELOPMENT DATE: 10/11/00
DEVELOPMENT METHOD:
DEVELOPMENT TIME: 1255
FIELD TECHNICIAN: JASON DANCE

WELL VOLUME (4-in.well, ~~12~~ 8-in boring)

A. WELL DEPTH (ft): 37.33
B. DEPTH TO WATER (ft): 28.07
C. LIQUID DEPTH (ft) (A-B): 9.26
D. SAND PACK VOLUME (1.57*C): 5.40
E. CASING VOLUME (gal) (.65*C): 6.02
F. WELL VOLUME (gal) (E+D): 11.42

VOLUME	BEGINNING	1	2	3	4	5
TIME (min)	1255	1305	1325	1328	1332	1336
DEPTH TO WATER (ft)						
RATE (GPM)	-	1	< 1	< 1	1	1
VOLUME PURGED (gal)	-	10	12	13	17	21
pH	-	6.08	6.05	5.76	5.60	5.54
TEMPERATURE (C)	-	17.72	17.92	16.11	16.45	17.96
CONDUCTIVITY (Φmhos/cm)	-	0.816	1.375	1.327	1.293	1.279
TURBIDITY	-	2107.7	2108.2	2098.5	2101.0	458.0

TOTAL QUANTITY OF WATER REMOVED (gal): 98

COMMENTS AND OBSERVATIONS: 2 hrs. WATER VISIBLY CLEAR & FREE OF FINES.

FIELD RECORD OF WELL DEVELOPMENT

WELL I.D.: MW-11
WELL CONDITION:

SITE NAME: GERMANTOWN
WEATHER:

GAUGE DATE:
SOUNDING METHOD:
STICK UP/DOWN (ft):

GAUGE TIME:
MEASUREMENT REF:
WELL DIAMETER (in.):

DEVELOPMENT DATE: 10/11/00
DEVELOPMENT METHOD:

DEVELOPMENT TIME:
FIELD TECHNICIAN: JASON DAVIS

WELL VOLUME (4-in.well, 12-in boring)

A. WELL DEPTH (ft):
B. DEPTH TO WATER (ft):
C. LIQUID DEPTH (ft) (A-B):

D. SAND PACK VOLUME (1.57*C):
E. CASING VOLUME (gal) (.65*C):
F. WELL VOLUME (gal) (E+D):

VOLUME	BEGINNING	1	2	3	4	5
TIME (min)	1409	1415	1425	1431	1433	1438
DEPTH TO WATER (ft)						
RATE (GPM)	1	1	1	1	1	1
VOLUME PURGED (gal)	54	60	70	76	78	85
pH	6.06	5.88	5.87	5.88	5.77	5.93
TEMPERATURE (C)	16.34	16.07	16.46	16.20	16.17	16.50
CONDUCTIVITY (Φmhos/cm)	1.109	0.849	1.301	1.308	1.228	1.154
TURBIDITY	58.9	72.3	95.8	40.6	82.4	40.0

TOTAL QUANTITY OF WATER REMOVED (gal): 98

COMMENTS AND OBSERVATIONS:

EA

FIELD RECORD OF WELL DEVELOPMENT

WELL I.D.: MW-12
WELL CONDITION:

SITE NAME: GERMANTOWN
WEATHER: 65° CLEAR

GAUGE DATE:
SOUNDING METHOD:
STICK UP/DOWN (ft):

GAUGE TIME:
MEASUREMENT REF:
WELL DIAMETER (in.):

DEVELOPMENT DATE: 10/11/00
DEVELOPMENT METHOD:

DEVELOPMENT TIME: 1455
FIELD TECHNICIAN: JASON DANCE

WELL VOLUME (4-in.well, ~~12~~ 8-in boring)

A. WELL DEPTH (ft): 35.92
B. DEPTH TO WATER (ft): 28.20
C. LIQUID DEPTH (ft) (A-B): 7.72

D. SAND PACK VOLUME (1.57*C): 4.50
E. CASING VOLUME (gal) (.65*C): 5.02
F. WELL VOLUME (gal) (E+D): 9.52

VOLUME	BEGINNING	1	2	3	4	5
TIME (min)	1455	1500	1510	1520	1535	1550
DEPTH TO WATER (ft)						
RATE (GPM)	-	1	1	1	1	1
VOLUME PURGED (gal)	-	-	10	20	35	50
pH	-	5.61	5.78	5.92	5.70	5.37
TEMPERATURE (C)	-	17.20	17.33	16.61	17.27	16.95
CONDUCTIVITY (Φmhos/cm)	-	1.352	1.378	1.298	1.514	1.542
TURBIDITY	-	2104.3	2107.1	2102.9	2106.5	2104.5

TOTAL QUANTITY OF WATER REMOVED (gal): 64

COMMENTS AND OBSERVATIONS: END @ 1601 (CLOUDY) - REDEV 10/12/00

EA

FIELD RECORD OF WELL DEVELOPMENT

WELL I.D.:	MW-12 (COMP)	SITE NAME:	GERMANTOWN USARC
WELL CONDITION:		WEATHER:	70° CLEAR
GAUGE DATE:		GAUGE TIME:	
SOUNDING METHOD:		MEASUREMENT REF:	
STICK UP/DOWN (ft):		WELL DIAMETER (in.):	
DEVELOPMENT DATE:	4/28/00	DEVELOPMENT TIME:	1045
DEVELOPMENT METHOD:		FIELD TECHNICIAN:	ANTHONY ROBINO

WELL VOLUME (4-in.well, 12-in boring)

A. WELL DEPTH (ft):	36.92	D. SAND PACK VOLUME (1.57*C):	4.44
B. DEPTH TO WATER (ft):	28.31	E. CASING VOLUME (gal) (.65*C):	4.95
C. LIQUID DEPTH (ft) (A-B):	7.61	F. WELL VOLUME (gal) (E+D):	9.39

VOLUME	BEGINNING	1	2	3	4	5
TIME (min)	1140	1200	1205	1210	1215	1220
DEPTH TO WATER (ft)						
RATE (GPM)	1	1	1	1	1	1
VOLUME PURGED (gal)	-	20	25	30	35	40
pH	-	5.47	5.41	5.38	5.37	5.35
TEMPERATURE (C)	-	18.39	19.62	19.42	19.07	19.34
CONDUCTIVITY (Φmhos/cm)	-	0.912	1.311	1.371	1.350	1.371
TURBIDITY	-	2109.3	2107.5	2099.2	1364.4	896.2

TOTAL QUANTITY OF WATER REMOVED (gal): 100

COMMENTS AND OBSERVATIONS: YSI MALFUNCTION 1230-1305, WATER VISIBLY CLEAR PEAK OF FINES @ 1330, ENDS AT 1220 AFTER 75 min

EA

FIELD RECORD OF WELL DEVELOPMENT

WELL I.D.: MW-12(CONT.)
WELL CONDITION:
SITE NAME: GERMANTOWN
WEATHER:

GAUGE DATE:
SOUNDING METHOD:
STICK UP/DOWN (ft):
GAUGE TIME:
MEASUREMENT REF:
WELL DIAMETER (in.):

DEVELOPMENT DATE: 10/12/00
DEVELOPMENT METHOD:
DEVELOPMENT TIME: 1045
FIELD TECHNICIAN: ANTHONY ROBINSON

WELL VOLUME (4-in.well, 12-in boring)

A. WELL DEPTH (ft):
B. DEPTH TO WATER (ft):
C. LIQUID DEPTH (ft) (A-B):
D. SAND PACK VOLUME (1.57*C):
E. CASING VOLUME (gal) (.65*C):
F. WELL VOLUME (gal) (E+D):

VOLUME	BEGINNING	1	2	3	4	5
TIME (min)	1330	1335*				
DEPTH TO WATER (ft)						
RATE (GPM)	1	1				
VOLUME PURGED (gal)	95	100				
pH	5.34	-				
TEMPERATURE (C)	18.31	-				
CONDUCTIVITY (Φmhos/cm)	1.321	-				
TURBIDITY	139.3	-				

TOTAL QUANTITY OF WATER REMOVED (gal): 100

COMMENTS AND OBSERVATIONS:

* YSI MALFUNCTION

NOVEMBER 2000

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME:	GERMANTOWN USACE	PROJECT NUMBER:	60957.76
WELL I.D.:	MW-4	WELL LOCK STATUS:	LOCKED
WELL CONDITION:	OK	WEATHER:	SUNNY, 60'S
GAUGE DATE:	10/31/00	GAUGE TIME:	—
SOUNDING METHOD:	IFP	MEASUREMENT REF:	T.O.C.
STICK UP/DOWN (ft):	0.5	WELL DIAMETER (in.):	4"
PURGE DATE:	11/1/00	PURGE TIME:	
PURGE METHOD:	2" SUBMERSIBLE	FIELD PERSONNEL:	MCBRIDE / DANCE
AMBIENT AIR VOCs (ppm)	Start: ____ End: ____	WELL MOUTH VOCs (ppm):	Start: ____ End: ____

WELL VOLUME

A. WELL DEPTH (ft):	35.90	D. WELL VOLUME/FT (GAL):	0.65
B. DEPTH TO WATER (ft):	27.54	E. WELL VOLUME (GAL) (C*D):	5.43
C. LIQUID DEPTH (ft) (A-B):	8.36	F. THREE WELL VOLUMES (GAL) (E*3):	16.3

Parameter	Beginning	1	2	3	4	5
Time (min)	0	10		10	20	30
Depth to Water (ft)	26.82	33.45	29.48	30.79	31.42	30.66
Purge Rate (~~L/min~~ GPM)	1	1	.25	.25	.25	.25
Volume Purged (~~L~~ GAL)	—	10	10	12.5	15	17.5
pH	6.02	6.07	6.01	6.20	6.10	6.09
Temperature (°C)	16.22	17.18	17.04	18.14	19.12	19.21
Conductivity (µmhos/cm)	0.632	0.753	1.751	0.738	0.735	0.925
Dissolved Oxygen (mg/L)	7.99	7.93	9.35	6.72	8.78	8.72
Turbidity (NTU)	444.2	657.6	112.1	86.1	48.8	19.8
Eh (mv)	-57.2	-56.3	-52.5	-60.3	-52.9	-58.6

TOTAL QUANTITY OF WATER REMOVED (GAL): ____

SAMPLERS:	AM / JD	SAMPLING TIME (START/END):	9:45 / 1150
SAMPLING DATE:	11/1/00	DECONTAMINATION FLUIDS USED:	METHANOL / DI
SAMPLE TYPE:	GRAB	SAMPLE PRESERVATIVES:	____

SAMPLE BOTTLE IDs: ____

SAMPLE PARAMETERS: ____

COMMENTS AND OBSERVATIONS: Pumped dry at 9:55 started pumping again at 10:35

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: GERMANTOWN USACE
WELL I.D.: MW-5
WELL CONDITION: OK
PROJECT NUMBER: 60957.76-
WELL LOCK STATUS: LOCKED
WEATHER: SUNNY, 60's

GAUGE DATE: 10/31/00
SOUNDING METHOD: IFP
STICK UP/DOWN (ft): 0.5
GAUGE TIME: —
MEASUREMENT REF: T.O.C.
WELL DIAMETER (in.): 4"

PURGE DATE: 11/2/00
PURGE METHOD: 2" SUBMERSIBLE
AMBIENT AIR VOCs (ppm) Start: — End: —
PURGE TIME:
FIELD PERSONNEL: MCBRIDE / DANCE
WELL MOUTH VOCs (ppm): Start: — End: —

WELL VOLUME

A. WELL DEPTH (ft): 40.42
B. DEPTH TO WATER (ft): 29.38
C. LIQUID DEPTH (ft) (A-B): 11.04
D. WELL VOLUME/FT (GAL): 0.65
E. WELL VOLUME (C*D): 7.18
F. THREE WELL VOLUMES (E*3): 21.54

Parameter	Beginning	1	2	3	4	5
Time (min)	START	15	45	55	65	
Depth to Water (ft)	29.38	35.18	36.97	36.84	36.78	
Purge Rate ~~(L/min)~~ (GPM)	0.5	0.5	0.25	0.25	0.25	
Volume Purged ~~(L)~~ (GAL)	0	7.5	15	17.5	20	
pH	6.31	6.19	6.00	6.08	6.17	
Temperature (°C)	16.97	17.95	19.72	19.74	19.79	
Conductivity (µmhos/cm)	0.580	0.643	0.788	0.768	0.776	
Dissolved Oxygen (mg/L)	6.10	9.27	6.99	6.70	6.25	
Turbidity (NTU)	25.0	22.0	3.6	1.5	4.2	
Eh (mv)	-46.6	-44.1	-54.1	-61.1	-62.4	

TOTAL QUANTITY OF WATER REMOVED (GAL): 20

SAMPLERS: AM/JD
SAMPLING DATE: 11/2/00
SAMPLE TYPE: GRAB
SAMPLE BOTTLE IDs: MW-5
SAMPLE PARAMETERS: 8260/8270
SAMPLING TIME (START/END): 1005/1110 @1115
DECONTAMINATION FLUIDS USED: METHANOL/DI/ALCONOX
SAMPLE PRESERVATIVES: ICE/HCL

COMMENTS AND OBSERVATIONS: QUESTIONABLE D.O. OUTPUT FROM YSI
REDUCED FLOW RATE > 0.25 GPM AFTER 15 MIN.

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: GERMANTOWN USACE
WELL I.D.: MW-7
WELL CONDITION: OK
PROJECT NUMBER: 60957.76
WELL LOCK STATUS: LOCKED
WEATHER: SUNNY, 60'S

GAUGE DATE: 10/31/00
SOUNDING METHOD: IFP
STICK UP/DOWN (ft): 0.5
GAUGE TIME: —
MEASUREMENT REF: T.O.C.
WELL DIAMETER (in.): 4

PURGE DATE: 11/2/00
PURGE METHOD: 2" SUBMERSIBLE
AMBIENT AIR VOCs (ppm) Start: ____ End: ____
PURGE TIME:
FIELD PERSONNEL: MCBRIDE / DANCE
WELL MOUTH VOCs (ppm): Start: ____ End: ____

WELL VOLUME

A. WELL DEPTH (ft): 39.76
B. DEPTH TO WATER (ft): 29.70
C. LIQUID DEPTH (ft) (A-B): 10.06
D. WELL VOLUME/FT (GAL): 0.65
E. WELL VOLUME (C*D): 6.54
F. THREE WELL VOLUMES (GAL) (E*3): 19.62

Parameter	Beginning	1	2	3	4	5	
Time (min)	0	20	40	60	80	90	100
Depth to Water (ft)	29.91	30.82	31.46	31.42	31.57	31.39	31.2
Purge Rate (GPM)	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Volume Purged (GAL)	—	5	10	15	20	22.5	25
pH	6.21	5.89	6.16	5.58	5.45	5.46	5.35
Temperature (°C)	15.29	18.84	18.83	13.90	19.66	19.92	20.16
Conductivity (µmhos/cm)	0.347	0.530	0.647	0.797	0.888	1.042	1.032
Dissolved Oxygen (mg/L)	5.60	6.84	12.84	10.55	7.85	13.64	15.52
Turbidity (NTU)	13.5	4.7	2.0	2.1	-.01	-2.2	-2.5
Eh (mv)	-39.1	-22.9	-42.4	-40.1	-57.0	-59.3	-67.9

TOTAL QUANTITY OF WATER REMOVED (GAL): 25

SAMPLERS: AM/SD
SAMPLING DATE: 11/2/00
SAMPLE TYPE: GRAB
SAMPLING TIME (START/END): 1030/
DECONTAMINATION FLUIDS USED: METHANOL / DI
SAMPLE PRESERVATIVES: ____
SAMPLE BOTTLE IDs: ____
SAMPLE PARAMETERS: ____

COMMENTS AND OBSERVATIONS: ____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: GERMANTOWN USACE
WELL I.D.: MW-9
WELL CONDITION: OK
PROJECT NUMBER: 60957.76-
WELL LOCK STATUS: LOCKED
WEATHER: Sunny, 60's

GAUGE DATE: 10/31/00
SOUNDING METHOD: IRP
STICK UP/DOWN (ft): 0.5
GAUGE TIME: —
MEASUREMENT REF: T.O.C.
WELL DIAMETER (in.): 4"

PURGE DATE: 11/1/00
PURGE METHOD: 2" SUBMERSIBLE
AMBIENT AIR VOCs (ppm) Start: ____ End: ____
PURGE TIME:
FIELD PERSONNEL: MCBRIDE / DANCE
WELL MOUTH VOCs (ppm): Start: ____ End: ____

WELL VOLUME

A. WELL DEPTH (ft): 38.54
B. DEPTH TO WATER (ft): 27.63
C. LIQUID DEPTH (ft) (A-B): 10.91
D. WELL VOLUME/FT (GAL): 0.65
E. WELL VOLUME (C*D): 7.09
F. THREE WELL VOLUMES (GAL.) (E*3): 21.27

Parameter	Beginning	1	2	3	4	5
Time (min)	0	20	40	60	70	80
Depth to Water (ft)	27.92	28.12	28.05	28.18	29.16	29.24
Purge Rate (~~L/min~~) (GPM)	0.25	0.25	0.25	0.25	0.5	0.5
Volume Purged (~~L~~) (GAL)	—	5	10	15	20	25
pH	6.30	6.18	6.17	6.30	6.17	6.21
Temperature (°C)	15.91	17.93	16.79	18.42	17.17	16.94
Conductivity (µmhos/cm)	0.928	0.968	0.624	0.649	0.584	0.561
Dissolved Oxygen (mg/L)	9.70	7.75	7.44	6.05	9.34	9.40
Turbidity (NTU)	1268.1	174.6	21.3	22.3	50.0	23.1
Eh (mv)	-46.3	-44.4	-41.6	-41.7	-40.6	-41.5

TOTAL QUANTITY OF WATER REMOVED (~~L~~) (GAL): 25

SAMPLERS: AM/BP
SAMPLING DATE: 11/1/00
SAMPLE TYPE: GRAB
SAMPLING TIME (START/END): 1405
DECONTAMINATION FLUIDS USED: METHANOL / DI
SAMPLE PRESERVATIVES:
SAMPLE BOTTLE IDs:
SAMPLE PARAMETERS:

COMMENTS AND OBSERVATIONS: Generator went out at 40 min (2:45)
Started again at 3:05 After 60 min reading, changed purge rate to 0.5 gpm

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME:	GERMANTOWN USACE	PROJECT NUMBER:	60957.76
WELL I.D.:	MW-11	WELL LOCK STATUS:	UNLOCKED
WELL CONDITION:	OK	WEATHER:	SUNNY, 60'S
GAUGE DATE:	10/31/00	GAUGE TIME:	—
SOUNDING METHOD:	IFP	MEASUREMENT REF:	T.O.C.
STICK UP/DOWN (ft):	0.5	WELL DIAMETER (in.):	4"
PURGE DATE:	11/1/00	PURGE TIME:	
PURGE METHOD:	2" SUBMERSIBLE	FIELD PERSONNEL:	MCBRIDE / DANCE
AMBIENT AIR VOCs (ppm)	Start: ____ End: ____	WELL MOUTH VOCs (ppm):	Start: ____ End: ____

WELL VOLUME

A. WELL DEPTH (ft):	37.30	D. WELL VOLUME/FT (GAL):	0.65
B. DEPTH TO WATER (ft):	28.15	E. WELL VOLUME (GAL) (C*D):	5.95
C. LIQUID DEPTH (ft) (A-B):	9.15	F. THREE WELL VOLUMES (GAL.) (E*3):	17.85

Parameter	Beginning	1	2	3	4	5
ΔTime (min)	START	10	20	30	40	50
Depth to Water (ft)	28.15	31.09	31.63	31.80	31.89	31.93
Purge Rate ~~(L/min)~~ (GPM)	0.5	0.5	0.5	0.5	0.5	0.5
Volume Purged (GAL)	0	5.0	10	15	20	25
pH	5.63	6.00	6.04	6.02	6.16	6.18
Temperature (°C)	15.91	16.35	16.72	16.68	16.64	16.65
Conductivity (µmhos/cm)	.0646	0.367	0.370	0.530	0.526	0.541
Dissolved Oxygen (mg/L)	9.72	9.57	9.48	9.47	9.48	9.41
Turbidity (NTU)	114	64.5	562	230	246	210
Eh (mv)	-45.5	-51.1	-55.0	-49.6	-47.5	-50.8

TOTAL QUANTITY OF WATER REMOVED (GAL): ~425

SAMPLERS: AM FD

SAMPLING TIME (START/END): 0935/1015

SAMPLING DATE: 11/1/00

DECONTAMINATION FLUIDS USED: METHANOL / DI

SAMPLE TYPE: GRAB

SAMPLE PRESERVATIVES: HCL / ICE

SAMPLE BOTTLE IDs:

SAMPLE PARAMETERS:

COMMENTS AND OBSERVATIONS: SURGED WELL @ 3 GPM THEN REDUCED FLOW TO 0.25 GPM (AS PER D. SULLIVAN)

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: GERMANTOWN USACE
WELL I.D.: MW-12
WELL CONDITION: OK
PROJECT NUMBER: 60957.76
WELL LOCK STATUS: UNLOCKED
WEATHER: SUNNY, 60's

GAUGE DATE: 10/31/00
SOUNDING METHOD: IFP
STICK UP/DOWN (ft): 0.5
GAUGE TIME: —
MEASUREMENT REF: T.O.C.
WELL DIAMETER (in.): 4"

PURGE DATE: 11/1/00
PURGE METHOD: 2" SUBMERSIBLE
AMBIENT AIR VOCs (ppm) Start: ____ End: ____
PURGE TIME:
FIELD PERSONNEL: MCBRIDE / DANCE
WELL MOUTH VOCs (ppm): Start: ____ End: ____

WELL VOLUME

A. WELL DEPTH (ft): 36.13
B. DEPTH TO WATER (ft): 28.41
C. LIQUID DEPTH (ft) (A-B): 7.72
D. WELL VOLUME/FT (GAL): 0.65
E. WELL VOLUME (C*D): 5.02 GAL.
F. THREE WELL VOLUMES (E*3): 15.06

Parameter	Beginning	1	2	3	4	5
Time (min)	START	10	30	40	60	80
Depth to Water (ft)	28.41	29.02	29.07	29.08	29.01	29.01
Purge Rate (~~L/min~~) (GPM)	0.25	0.25	0.25	0.25	0.25	0.25
Volume Purged (~~L~~) (GAL)	0	2.5	7.5	10	15	20
pH	6.40	6.44	6.44	6.44	6.24 (?)	6.44
Temperature (°C)	17.05	17.57	17.85	17.66	17.90	17.64
Conductivity (µmhos/cm)	1.255	1.278	1.223	1.189	1.384	1.241
Dissolved Oxygen (mg/L)	8.46	7.09	8.87	8.97	8.80	8.69
Turbidity (NTU)	8.1	~~1.7~~ (?)	32.8	24.2	18.0	7.8
Eh (mv)	-61.3	-59.8	-54.5	-51.1	-50.2	-48.4

TOTAL QUANTITY OF WATER REMOVED (GAL): 20

SAMPLERS: AM/JD
SAMPLING DATE: 11/1/00
SAMPLE TYPE: GRAB
SAMPLE BOTTLE IDs: MW-12
SAMPLE PARAMETERS: 8260 / 8270
SAMPLING TIME (START/END): 1145 / 1305 (@1310)
DECONTAMINATION FLUIDS USED: METHANOL / DI / ALCONOX
SAMPLE PRESERVATIVES: HCL / ICE

COMMENTS AND OBSERVATIONS:

FEBRUARY 2001

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID MW-4 SAMPLE NO. MW-4
WELL/SITE DESCRIPTION GERMANTOWN

DATE 2/6/01 TIME _____ AIR TEMP. 35°

WELL DEPTH 35.90 ft CASING HEIGHT _____ ft
WATER DEPTH 27.40 ft WELL DIAMETER 4" in
WATER COL. HEIGHT 8.50 ft SANDPACK DIAM. _____ in
EQUIVALENT VOLUME OF STANDING WATER 5.56 (gal) (L)
PUMP RATE 0.5 (gpm) (lpm)
PUMP TIME 55 min min
WELL WENT DRY? ( ) Yes (X) No PUMP TIME N/A min
VOL. REMOVED 27.5 (gal) (L) RECOVERY TIME _____ min
PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
2/6/01	1010	0	6.95	1.002	13.76	240.5	153.6	2.64	27.40	0.5 gpm
	1020	5	6.72	1.103	17.98	50.5	332.6	1.16	29.76	0.5
	1030	10	6.54	1.081	18.30	-26.3	224.8	1.08	30.03	0.5
	1040	15	6.51	1.072	18.51	-12.8	147.8	1.04	30.07	0.5
	1050	20	6.50	1.067	18.58	-14.2	54.1	0.95	30.68	0.5
	1100	25	6.49	1.064	18.50	-14.0	22.4	0.95	30.69	0.5
	1105	27.5	6.47	1.062	18.48	-12.6	9.7	0.95	30.69	0.5

COMMENTS SAMPLED @ 1105

SIGNATURE _____

FIELD RECORD OF WELL GAUGING PURGING AND SAMPLING

WELL I.D.:	MW-6	SITE NAME:	GERMANTOWN
WELL CONDITION:	O.K.	WEATHER:	SUNNY, 40's
GAUGE DATE:	2/7/01	GAUGE TIME:	—
SOUNDING METHOD:	IFP	MEASUREMENT REF:	T.O.C.
STICK UP/DOWN (ft):	0.5	WELL DIAMETER (in.):	4"
PURGE DATE:	2/7/01	PURGE TIME:	70 MINUTES
PURGE METHOD:	SLOW PURGE	FIELD TECHNICIAN:	MCBRIDE

WELL VOLUME

A. WELL DEPTH (ft):	38.83	D. WELL VOLUME/FT:	.65
B. DEPTH TO WATER (ft):	28.24	E. WELL VOLUME (gal) (C*D):	6.88
C. LIQUID DEPTH (ft) (A-B):	10.59	F. THREE WELL VOLUMES (gal) (E*3):	—

	BEGINNING	1	2	3	4	5		
TIME (min)	START	10	20	30	40	50	60	70
DEPTH TO WATER (ft)	28.24	29.88	30.35	30.40	30.41	30.38	30.40	30.4
RATE (GPM)	0.5	→						
VOLUME PURGED (gal)	0	5	10	15	20	25	30	35
pH	6.81	6.47	6.42	6.43	6.43	6.42	6.40	6.44
TEMPERATURE (C)	15.51	18.8	19.58	19.77	19.68	19.61	19.69	19.63
CONDUCTIVITY (µmhos/cm)	1.003	1.117	1.119	1.100	1.095	1.090	1.088	1.086
DISSOLVED OXYGEN (µg/L)	6.86	1.02	1.01	0.94	0.93	0.90	0.90	0.89
eh (mv)	189.7	174.9	170.7	167.4	165.9	164.8	162.7	161.3
TURBIDITY (NTU)	26.5	17.4	0	54.3	37.6	20.9	13.3	9.1

TOTAL QUANTITY OF WATER REMOVED (gal): 35

SAMPLERS: AJM

SAMPLING DATE: 2/7/01 SAMPLING TIME: 1235

SAMPLE TYPE: GRAB SPLIT SAMPLE WITH: —

COMMENTS AND OBSERVATIONS:

FIELD RECORD OF WELL GAUGING PURGING AND SAMPLING

WELL I.D.:	MW-8	SITE NAME:	GERMANTOWN
WELL CONDITION:	GOOD	WEATHER:	SUNNY, 40°F
GAUGE DATE:	2/7/01	GAUGE TIME:	—
SOUNDING METHOD:	IFP	MEASUREMENT REF:	T.O.C.
STICK UP/DOWN (ft):	0.5	WELL DIAMETER (in.):	4"
PURGE DATE:	2/7/01	PURGE TIME:	60 MINUTES
PURGE METHOD:	SLOW PURGE	FIELD TECHNICIAN:	McBRIDE

WELL VOLUME

A. WELL DEPTH (ft):	38.27	D. WELL VOLUME/FT:	0.65
B. DEPTH TO WATER (ft):	27.64	E. WELL VOLUME (gal) (C*D):	6.91
C. LIQUID DEPTH (ft) (A-B):	10.63	F. THREE WELL VOLUMES (gal) (E*3):	N/A

1000

	BEGINNING	1	2	3	4	5	
TIME (min)	START	10	20	30	40	50	60
DEPTH TO WATER (ft)	27.64	28.27	28.60	28.63	28.64	28.62	28.63
RATE (GPM)	0.5	→	→	→	→	→	→
VOLUME PURGED (gal)	0	5	10	15	20	25	30
pH	8.31	6.98	6.63	6.60	6.59	6.60	6.56
TEMPERATURE (C)	16.4	17.03	17.65	17.90	17.93	17.95	17.91
CONDUCTIVITY (µmhos/cm)	0.088	0.270	0.271	0.308	0.317	0.316	0.317
DISSOLVED OXYGEN (µg/L)	10.07	7.17	6.09	5.48	4.16	4.09	4.06
eh (mv)	48.0	136.6	185.3	168.9	167.6	168.3	166.4
TURBIDITY (NTU)	226	96.2	20.5	12.5	4.6	3.7	2.2

TOTAL QUANTITY OF WATER REMOVED (gal): 30

SAMPLERS: ASM

SAMPLING DATE: 2/7/01 SAMPLING TIME: 1105

SAMPLE TYPE: GRAB SPLIT SAMPLE WITH: —

COMMENTS AND OBSERVATIONS:

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID MW-10 SAMPLE NO. MW-10
WELL/SITE DESCRIPTION GERMANTOWN- USARC

DATE 2/6/01 TIME _____ AIR TEMP. 35°

WELL DEPTH 34.15 ft CASING HEIGHT ~ ft
WATER DEPTH 27.33 ft WELL DIAMETER 4 in
WATER COL. HEIGHT 6.82 ft SANDPACK DIAM. ~ in
EQUIVALENT VOLUME OF STANDING WATER 4.43 (gal) (L)
PUMP RATE 0.5 (gpm) (lpm)
PUMP TIME 60 ~~min~~
WELL WENT DRY? ( ) Yes (X) No PUMP TIME _____ min
VOL. REMOVED 30 (gal) (L) RECOVERY TIME N/A min
PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
2/6	1140	0	6.71	0.737	15.05	-15.5	92.7	2.24	27.33	0.5
	1150	5	6.67	0.788	17.76	-61.7	24.1	0.81	28.79	0.5
	1200	10	6.66	0.781	18.04	-68.7	59.3	0.76	29.46	0.5
	1210	15	6.67	0.790	18.29	-70.2	39.2	0.82	29.64	0.5
	1220	20	6.69	0.791	18.28	-79.4	27.6	0.70	29.66	0.5
	1230	25	6.71	0.795	18.28	-82.5	19.6	0.66	29.63	0.5
↓	1240	30	6.70	0.800	18.30	-83.4	8.3	0.67	29.64	0.5

COMMENTS Samples @ 1245

SIGNATURE _____

15 Loveton Circle
Sparks, Maryland 21152

PURGING LOGBOOK FORM
GROUNDWATER SAMPLES

WELL ID MW-12 SAMPLE NO. MW-12
WELL/SITE DESCRIPTION GERMANTOWN, USARC

DATE 2/5/01 TIME _____ AIR TEMP. 30 (SNOW)

WELL DEPTH 36.10 ft
WATER DEPTH 28.20 ft
WATER COL. HEIGHT 7.90 ft
EQUIVALENT VOLUME OF STANDING WATER 5.14 (gal) (L)
PUMP RATE 1.0 (gpm) (lpm)
PUMP TIME 30 MIN min
WELL WENT DRY? ( ) Yes (X) No
VOL. REMOVED 30 (gal) (L)
PURGE AGAIN? ( ) Yes (X) No

CASING HEIGHT _____ ft
WELL DIAMETER 4 in
SANDPACK DIAM. _____ in
PUMP TIME 30 min
RECOVERY TIME — min
TOTAL VOL. REMOVED 30 (gal) (L)

Date	Time	Volume Removed	pH	Cond	Temp	ORP	Turb	DO	Depth to Water from TOC	Pump Rate
2/5	1250	0	6.55	1.463	17.18	203.6	396	1.22	28.20	~~1.0 LPM~~
	1235	5	6.86	1.483	18.28	-87.1	118	1.07	29.70	1.0
	1240	10	6.84	1.444	18.0	-94.7	32.6	1.00	29.77	1.0
	1245	15	6.76	1.384	18.04	-85.0	4.7	1.16	29.99	1.0
	1250	20	6.71	1.400	18.0	-86.6	6.6	1.05	30.13	1.0
	1255	25	6.70	1.397	17.99	-85.8	5.5	0.99	30.17	1.0
	1300	30	6.69	1.458	17.96	-88.4	6.3	1.04	30.23	1.0

COMMENTS SAMPLED @ 1305

SIGNATURE _____

MAY 2001

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-4 SAMPLE NO. MW-4

WELL/SITE DESCRIPTION Germantown

DATE 5/10/01 TIME 1355 AIR TEMP. 85

WELL DEPTH 35.90 ft CASING HEIGHT — ft

WATER DEPTH 27.42 ft WELL DIAMETER 4" in

WATER COL. HEIGHT 8.48 ft SANDPACK DIAM. — in

EQUIVALENT VOLUME OF STANDING WATER 5.50 (gal) (L)

PUMP RATE 200 mL/min (gpm) (LPM)

PUMP TIME 70 min min

WELL WENT DRY? ( ) Yes (X) No PUMP TIME 70 min

VOL. REMOVED 18 (gal) (L) RECOVERY TIME — min

PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED 18 (gal) (L)

Date	Time	Volume Removed Unit: mL	pH	Cond. µS/cm	Temp. °C	ORP	Turb. NTU	DO mg/L	Depth to Water from TOC	Pump Rate mL/min
5/10	1405	—	6.48	1068	18.02	-111.2	34.7	0.27	27.42	1000
	1410	5000	6.30	1124	20.16	-119.3	61.5	0.17	28.63	200
	1415	6000	6.36	1161	21.37	-127.4	27.2	0.12	28.72	200
	1420	7000	6.38	1167	21.54	-130.6	52.6	0.09	28.86	200
	1425	8000	6.38	1179	22.70	-126.0	33.2	0.07	28.99	200
	1430	9000	6.14	1097	20.78	-61.8	34.7	0.09	28.80	200
	1435	10000	6.21	1083	20.65	-64.9	48.7	0.01	28.91	200
	1440	11,000	6.22	1091	20.44	-69.7	38.7	0.00	28.88	200
	1445	12,000	6.27	1100	21.50	-76.2	37.9	0.00	29.41	200
	1450	13,000	6.30	1114	21.98	-80.3	27.2	0.00	29.77	200
	1455	14,000	6.28	1110	21.29	-80.7	19.5	0.00	29.45	200
	1500	15,000	6.28	1112	21.29	-80.7	12.2	0.00	29.45	200
	1505	16,000	6.28	1110	21.29	-80.7	8.8	0.00	28.93	200

COMMENTS

SIGNATURE

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-5 SAMPLE NO. MW-5

WELL/SITE DESCRIPTION Germantown

DATE 5 / 11 / 01 TIME 0930 AIR TEMP. 75

WELL DEPTH 40.42 ft CASING HEIGHT ____ ft

WATER DEPTH 29.28 ft WELL DIAMETER 4 in

WATER COL. HEIGHT 11.14 ft SANDPACK DIAM. ____ in

EQUIVALENT VOLUME OF STANDING WATER 27.34 (gal) (L)

PUMP RATE 200mL / min (gpm) (LPM)

PUMP TIME 95 min min

WELL WENT DRY? ( ) Yes (X) No PUMP TIME 95 min

VOL. REMOVED 19 (gal) (L) RECOVERY TIME — min

PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED 19 (gal) (L)

Date	Time	Volume Removed Unit:	pH	Cond. µS/cm	Temp. °C	ORP	Turb. NTU	DO mg/L	Depth to Water from TOC	Pump Rate mL/min
5/11	0945	—	6.97	997	17.07	148.6	67.9	0.59	29.28	200
	0950	1000	6.50	1036	18.41	136.3	43.0	0.05	30.87	200
	0955	2000	6.39	1090	20.33	103.0	72.4	0.00	31.18	200
	1000	3000	6.34	1108	21.16	74.3	125.2	6.00	31.38	200
	1005	4000	6.28	1107	21.49	55.3	375.4	0.00	31.79	200
	1010	5000	6.28	1118	21.76	46.2	104.2	0.00	32.29	200
	1015	6000	6.25	1102	21.18	48.0	33.2	0.00	32.99	200
	1020	7000	6.23	1116	21.51	45.2	38.5	0.00	33.45	200
	1025	8000	6.24	1120	22.40	35.7	164.0	0.00	33.71	200
	1030	9000	6.22	1106	22.09	~~24.9~~ 32.3	171.9	0.00	33.99	200
	1035	10,000	6.20	1092	21.66	28.0	101.1	0.00	34.62	200
	1040	11,000	6.18	1079	20.95	22.6	72.9	0.00	35.31	200
	1045	12,000	6.16	1078	21.03	19.1	45.5	0.00	35.88	200

COMMENTS ____

SIGNATURE ____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-6 SAMPLE NO. MW-6

WELL/SITE DESCRIPTION

DATE 5/10/01 TIME 1520 AIR TEMP. 85°F

WELL DEPTH 38.89 ft CASING HEIGHT ft

WATER DEPTH 28.51 ft WELL DIAMETER 4 in

WATER COL. HEIGHT 10.38 ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER 25.47 (gal) (L)

PUMP RATE 300 mL/min (gpm) (LPM)

PUMP TIME 45 min

WELL WENT DRY? ( ) Yes (X) No PUMP TIME min

VOL. REMOVED (gal) (L) RECOVERY TIME min

PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED 13.1 (gal) (L)

Date	Time	Volume Removed Unit:	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate ml/min
5/10/01	1535	600	6.50	.951	20.76	55.7	41.4	0.92	28.94	300
	1540	2100	6.19	0.986	21.72	80.9	38.3	1.07	28.99	
	1545	3600	6.40	1.021	23.20	23.8	41.2	1.03	28.99	
	1550	5100	6.44	1.035	23.84	66.8	42.3	1.03	28.99	
	1555	6600	6.38	1.015	23.05	102.5	27.8	0.78	28.99	
	1600	8100	6.35	1.004	22.27	65.1	13.9	0.94	28.99	
	1605	9600	6.26	1.010	22.90	74.0	12.1	1.12	28.99	
	1610	10,100	6.59	1.019	23.53	87.7	9.5	0.97	28.99	
	1615	11,600	6.59	1.025	23.94	90.7	8.3	0.92	28.99	
	1620	13,100	6.59	1.022	23.84	90.3	8.1	0.98	28.99	

COMMENTS SAMPLED MW-6 + DUP @ 1620

SIGNATURE

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-8 SAMPLE NO. MW-8

WELL/SITE DESCRIPTION

DATE 6/10/01 TIME ~~1345~~ 1345 AIR TEMP. 85°F

WELL DEPTH 38.23 ft CASING HEIGHT ft

WATER DEPTH 27.97 ft WELL DIAMETER 4 in

WATER COL. HEIGHT 10.26 ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER (gal) (L)

PUMP RATE 300 ml/min (gpm) (LPM)

PUMP TIME 35 min min

WELL WENT DRY? ( ) Yes (X) No PUMP TIME min

VOL. REMOVED (gal) (L) RECOVERY TIME min

PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED 8.1 (gal) (L)

Date	Time	Volume Removed Unit: ML	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate ML/min
5/10/01	1410	600	6.48	.780	20.18	15.9	7.7	0.62	28.16	300
	1415	2100	6.39	.802	21.47	37.9	5.5	0.70	28.16	
	1420	3600	5.78	.820	22.48	65.3	4.1	0.77	28.16	
	1425	5100	6.53	.827	22.44	-74.5	4.7	0.71	28.16	
	1430	6600	6.49	.824	22.73	-85.7	3.4	0.73	28.16	
	1435	8100	6.16	.835	23.20	-96.9	3.7	0.83	28.16	

COMMENTS SAMPLED @ 1435

SIGNATURE Anthony B Robinson

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-10 SAMPLE NO. MW-10

WELL/SITE DESCRIPTION Germantown

DATE 5/10/01 TIME 1125 AIR TEMP. 83

WELL DEPTH 34.23 ft CASING HEIGHT ____ ft

WATER DEPTH 27.53 ft WELL DIAMETER 4 in

WATER COL. HEIGHT 6.70 ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER 6.84 (gal) (L)

PUMP RATE 200 mL/min (gpm) (LPM)

PUMP TIME 70 min min

WELL WENT DRY? ( ) Yes (X) No PUMP TIME 70 min

VOL. REMOVED 19.5 (gal) (L) RECOVERY TIME ____ min

PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED 19.5 (gal) (L)

Date	Time	Volume Removed Unit: mL	pH	Cond. µs/cm	Temp. °C	ORP	Turb. NTU	DO mg/L	Depth to Water from TOC	Pump Rate mL/min
5/10/01	1140	—	6.74	854	20.58	-85.2	17.1	0.72	27.53	250
	1145	3750	6.46	851	20.55	-90.0	18.4	0.54	27.70	750
	1150	7500	6.36	840	21.01	-96.3	65.4	0.15	27.94	200
	1155	8500	6.36	869	22.72	-103.1	131.3	0.16	27.87	200
	1200	9500	6.34	858	22.51	-107.7	232.9	0.15	27.94	200
	1205	10500	6.35	862	22.78	-115.3	84.7	0.06	28.17	200
	1210	11500	6.37	886	23.18	-120.1	107.3	0.07	28.0	200
	1215	12500	6.39	911	24.29	-124.9	101.1	0.03	28.26	200
	1220	13500	6.39	883	23.05	-127.0	84.3	0.02	29.15	200
	1225	14500	6.36	869	22.63	-125.7	65.1	0.01	29.43	200
	1230	15500	6.36	867	22.61	-125.6	20.2	0.01	29.18	200
	1235	16500	6.36	867	22.82	-125.7	10.1	0.02	29.16	200
	1240	17500	6.35	865	22.60	-125.3	4.9	0.01	29.15	200

COMMENTS ____

SIGNATURE ____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-11 SAMPLE NO. MW-11

WELL/SITE DESCRIPTION

DATE 5/10/01 TIME 1750 AIR TEMP. 80

WELL DEPTH 37.30 ft CASING HEIGHT ft

WATER DEPTH 28.24 ft WELL DIAMETER 4 in

WATER COL. HEIGHT 9.06 ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER 2.33 (gal) (L)

PUMP RATE 200 mL/min (gpm) (LPM)

PUMP TIME 40 min min

WELL WENT DRY? ( ) Yes (X) No PUMP TIME 40 min

VOL. REMOVED 8 (gal) (L) RECOVERY TIME — min

PURGE AGAIN? ( ) Yes (X) No TOTAL VOL. REMOVED 8 (gal) (L)

Date	Time	Volume Removed Unit:	pH	Cond. µS/cm	Temp. °C	ORP	Turb. NTU	DO mg/L	Depth to Water from TOC	Pump Rate mL/m
5/10	1810	—	7.07	978	17.59	-113.9	158.7	0.05 ~~HSU~~	28.24	200
	1815	1000	6.72	946	18.33	-120.5	100.9	0.00	29.27	200
	1820	2000	6.62	956	18.90	-129.9	33.0	0.00	29.41	200
	1825	3000	6.61	964	18.82	-134.9	21.2	0.00	29.64	200
	1830	4000	6.59	972	18.94	-137.4	14.6	0.00	29.60	200
	1835	5000	6.59	976	19.08	-138.6	11.6	0.00	29.40	200
	1840	6000	6.58	976	19.08	-138.9	8.2	0.00	29.54	200
	1845	7000	6.59	965	18.83	-138.3	4.6	0.00	29.59	200
	1850	8,000	6.58	963	18.97	-137.5	4.3	0.00	29.66	200
		Start Sampling @ 1850								

COMMENTS

SIGNATURE

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID RW-1 SAMPLE NO. BH-01

WELL/SITE DESCRIPTION

DATE 5/11/01 TIME 1130 AIR TEMP.

WELL DEPTH 39.50 ft CASING HEIGHT ft

WATER DEPTH 28.79 ft WELL DIAMETER 6 in

WATER COL. HEIGHT 10.71 ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER 6.84 (gal) (L)

PUMP RATE 300 ml/min (gpm) (LPM)

PUMP TIME 30 min min

WELL WENT DRY? ( ) Yes (✓) No PUMP TIME min

VOL. REMOVED (gal) (L) RECOVERY TIME min

PURGE AGAIN? ( )Yes (✓) No TOTAL VOL. REMOVED 9 (gal) (L)

Date	Time	Volume Removed Unit: ml	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate ml/min
5/11/01	1145	600 ml	6.55	.906	17.66	-115.6	5.0	0.77	29.69	300
	1150	2100	6.36	.930	18.96	-174.2	16.1	0.43	29.69	
	1155	3600	6.41	.944	19.66	-182.6	4.0	0.42	29.69	
	1200	5100	6.40	.953	20.03	-179.9	3.8	.98	29.69	
	1205	6600	6.99	.960	20.33	-191.5	4.7	.57	29.69	
	1210	8100	6.49	.945	19.81	-191.8	4.7	.92	29.69	
	1215	9600								

COMMENTS SAMPLED @ 1210

SIGNATURE

FEBRUARY 2002

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-5 SAMPLE NO. _____

WELL/SITE DESCRIPTION GERMANTOWN USARC

DATE 2/14/02 TIME 12:35 AIR TEMP. 20°

WELL DEPTH 40.42 ft CASING HEIGHT FLUSH ft

WATER DEPTH 29.30 ϕLNAPL ft WELL DIAMETER 4 in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)

PUMP RATE _____ (gpm) (LPM)

PUMP TIME _____ min

WELL WENT DRY? (X) Yes ( ) No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? ( )Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed Unit: GAL	pH	Cond.	Temp. °C	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
	12:35	2	6.38	593	17.62	6.0	32.8	8.65	29.35	.256/Min
	12:40	3	6.39	599	19.41	-5.2	196	6.78	30.00	"
	1245	4	6.43	614	17.64	5.4	220	7.09	32.46	"
		WELL WENT DRY								"
	1305	4	6.59	579	16.79	15.4	10	7.11	35.27	"
	1310	5	6.52	600	16.78	12.4	8	6.99	35.50	"
	1315	6	6.58	684	16.78	12.9	0	7.02	35.71	"

COMMENTS 1315 - SAMPLING TIME

SIGNATURE _____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-6 SAMPLE NO. _____

WELL/SITE DESCRIPTION GERMANTOWN USARC

DATE 2 / 4 / 02 TIME _____ AIR TEMP. 20°

WELL DEPTH 38.89 ft CASING HEIGHT FLUSH ft

WATER DEPTH 28.62 Ø LNAPL ft WELL DIAMETER 4 in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)

PUMP RATE _____ (gpm) (LPM)

PUMP TIME _____ min

WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? ( )Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed Unit: G	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
2/4/02	1230	PUMPING STARTED								0.25G/min
	1320	15	6.71	615	16.69	13.9	9.35	6.67	29.95	"
	1325	16	6.64	621	16.73	12.4	6.1	6.78	29.97	"
	1330	17	6.68	620	16.78	14.7	0	6.72	29.98	"

COMMENTS SAMPLE TIME at 1330

SIGNATURE _____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-7 SAMPLE NO. _____

WELL/SITE DESCRIPTION GERMANTOWN USARC

DATE 2/14/02 TIME _____ AIR TEMP. _____

WELL DEPTH 39.76 ft CASING HEIGHT FLUSH ft

WATER DEPTH 29.58 Ø LNAPL ft WELL DIAMETER 4 in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)

PUMP RATE _____ (gpm) (LPM)

PUMP TIME _____ min

WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? ( )Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed Unit: G	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
2/14/02	1400									0.25 G/min
	1405	1	6.57	336	16.44	92.4	420	7.23	29.71	"
	1420	6	6.70	300	17.50	99.2	219	9.43	29.73	"
	1430	8	6.59	389	17.92	102.3	0	8.12	29.82	"
	1435	9	6.51	410	17.82	111.3	0	8.04	29.85	"
	1440	10	6.54	412	17.36	112.4	0	7.98	29.91	"

COMMENTS SAMPLE TIME - 1445.

SIGNATURE _____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-8 SAMPLE NO. _____

WELL/SITE DESCRIPTION GERMANTOWN USARC

DATE 2 / 14 / 02 TIME 945 AIR TEMP. 20

WELL DEPTH 34.23 ft CASING HEIGHT FLUSH ft

WATER DEPTH 27.73 Ø LNAPL ft WELL DIAMETER 4 in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)

PUMP RATE _____ (gpm) (LPM)

PUMP TIME _____ min

WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? ( )Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed Unit: G	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
2/14/02	1125	-	7.02	900	15.18	-16.5	644	8.69	27.73	1.56/min
	1135	6	6.41	892	17.75	12.5	35.7	0.06	27.73	.16/min
	1140	6.5	6.41	891	19.31	8.6	14.0	0.17	27.62	"
	1145	7	6.39	884	19.39	7.8	0	0.18	27.61	"
	1150	7.5	6.39	879	19.37	10.0	0	0.11	27.59	"
	1155	8	6.38	880	19.42	9.7	0	0.12	27.56	"
	1200	8.5	6.39	878	19.44	10.2	0	0.12	27.56	"

COMMENTS SAMPLE @ 1200

SIGNATURE _____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-9 SAMPLE NO. _____

WELL/SITE DESCRIPTION GERMANTOWN USARC

DATE 2/14/02 TIME _____ AIR TEMP. 20

WELL DEPTH 38.54 ft CASING HEIGHT FLUSH ft

WATER DEPTH 27.90 ϕLNAPL ft WELL DIAMETER 4 in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. 9 in

EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)

PUMP RATE _____ (gpm) (LPM)

PUMP TIME _____ min

WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? ( )Yes ( ) No TOTAL VOL. REMOVED 15 (gal)(L)

Date	Time	Volume Removed Unit: G	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
2/14	1015	–	4.50	.1	13.73	193.8 ~~403~~	402	11.60	27.90	0.25G/min.
	1020	5	6.34	1213	16.8	-39.8	19.2	9.54	27.90	
	1035	10	6.64	9.0	14.86	-54	102	10.34	27.92	
	1040	12	6.54	1182	16.82	-80	0	0.41	27.90	
	1045	13	6.54	1182	16.68	-78.5	0	11.83	27.93	
	1050	14	6.54	1185	16.55	-78.2	0	0.47	27.93	
	1055	15	6.54	1184	16.47	-77.6	0	0.37	27.95	

COMMENTS SAMPLE @ 1055

SIGNATURE _____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-10 SAMPLE NO. _____

WELL/SITE DESCRIPTION GERMANTOWN USARC

DATE 2/14/02 TIME _____ AIR TEMP. _____

WELL DEPTH 38.23 ft CASING HEIGHT FLUSH ft

WATER DEPTH 28.28 Φ LNAPL ft WELL DIAMETER 4 in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)

PUMP RATE _____ (gpm) (LPM)

PUMP TIME _____ min

WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? ( )Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed Unit: G	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
	1615	START PURGE AT 0.25G/min								
	1655	10	6.96	300	10.30	-74.0		9.19	30.32	0.25G/m
	1705	11	6.70	474	15.72	-44.3		7.13	30.34	"
	1715	12	6.68	456	16.12	-54.2		6.92	30.38	"
	1720	12.5	6.62	468	16.65	-48.2		5.79	30.40	"
	1725	13	6.70	471	15.99	-59.6		6.81	30.42	"

COMMENTS TURBIDITY METER NOT WORKING. SAMPLE VISUALLY CLEAR & FREE OF FINES. SAMPLE AT 1730

SIGNATURE _____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-11 SAMPLE NO. _____

WELL/SITE DESCRIPTION GERMANTOWN OSARC

DATE 2/14/02 TIME _____ AIR TEMP. _____

WELL DEPTH 37.32 ft CASING HEIGHT FLUSH ft

WATER DEPTH 28.45 ft WELL DIAMETER 4 in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)

PUMP RATE _____ (gpm) (LPM)

PUMP TIME _____ min

WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? ( )Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed Unit: GAL	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
	1600	5	6.70	973	17.29	-72.9	300	7.88	28.90	
	1615	10	6.71	1035	16.97	-83.4	552	7.27	29.11	
	1625	11	6.72	1009	16.35	-82.9	130	8.38	29.11	
	1630	11.5	6.78	983	16.39	-78.2	87	8.48	29.41	
	1635	12	6.76	1011	16.31	-79.6	24	8.19	29.61	
	1645	13	6.73	1009	16.59	-69.5	9	8.29	30.19	

COMMENTS SAMPLE AT 1700

SIGNATURE _____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID MW-12 SAMPLE NO. _____

WELL/SITE DESCRIPTION GERMANTOWN USACE

DATE 2/14/02 TIME _____ AIR TEMP. 20°

WELL DEPTH 36.10 ft CASING HEIGHT FLUSH ft

WATER DEPTH 28.67 ϕ LNAPL ft WELL DIAMETER 4 in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)

PUMP RATE _____ (gpm) (LPM)

PUMP TIME _____ min

WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? ( )Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

Date	Time	Volume Removed Unit:	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
2/14	1520	STARTED PURGING								
	1540	8	6.70	657	17.77	-68.3	0	6.94	29.12	
	1545	8.5	6.73	1273	18.29	-80.1	360	6.70	29.33	
	1550	9	6.76	659	17.64	-72.0	24	7.28	29.47	
	1605	10	6.73	637	17.18	-69.0	18	7.26	29.64	
	1610	10.5	6.77	672	17.32	-79.1	0	6.99	29.87	

COMMENTS Sampled at 1610. Duplicate collected.

SIGNATURE _____

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID RW-1 SAMPLE NO. _____

WELL/SITE DESCRIPTION GERMANTOWN OSARC

DATE 2/14/02 TIME _____ AIR TEMP. 20

WELL DEPTH 39.52 ft CASING HEIGHT FLUSH ft

WATER DEPTH 29.12 Ø LNAPL ft WELL DIAMETER 8 in

WATER COL. HEIGHT _____ ft SANDPACK DIAM. 2 in

EQUIVALENT VOLUME OF STANDING WATER _____ (gal) (L)

PUMP RATE _____ (gpm) (LPM)

PUMP TIME _____ min

WELL WENT DRY? ( ) Yes ( ) No PUMP TIME _____ min

VOL. REMOVED _____ (gal) (L) RECOVERY TIME _____ min

PURGE AGAIN? ( )Yes ( ) No TOTAL VOL. REMOVED _____ (gal) (L)

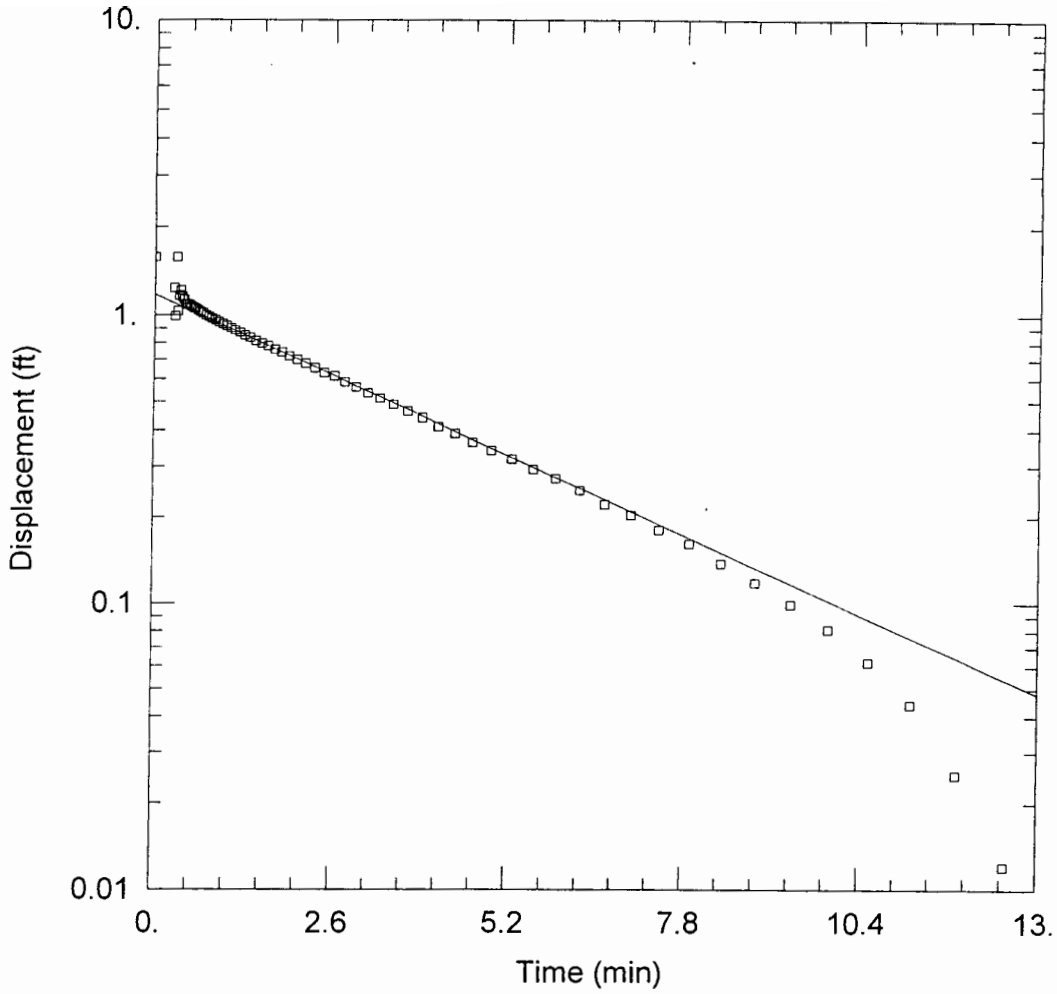
Date	Time	Volume Removed Unit:	pH	Cond.	Temp.	ORP	Turb.	DO	Depth to Water from TOC	Pump Rate
2/14	1430	STARTED PURGING								
	1455	5	6.44	1163	17.97	-29.2	249	5.75	29.43	
	1500									
	1500	5.5	6.52	1200	17.89	-32.6	83.4	5.02	29.43	
	1505	6	6.61	919	17.63	-47.8	0	6.27	29.72	
	1510	7	6.59	1190	17.92	-49.2	0	5.21	29.94	
	1515	8	6.57	1211	17.81	-54.1	0	5.26	30.05	

COMMENTS SAMPLED AT 1515.

SIGNATURE _____

APPENDIX D

SLUG TEST RESULTS



WELL TEST ANALYSIS

Data Set: P:\Federal\DOD\ARMY\projects\6095776\Slug Tests\mw6.aqt
Date: 11/08/00 Time: 09:40:04

PROJECT INFORMATION

Company: EA ENGINEERING
Client: USACE-BALTIMORE
Project: 60957.76
Test Location: GERMANTOWN
Test Well: MW-6
Test Date: 11/1/00

AQUIFER DATA

Saturated Thickness: 5. ft
Anisotropy Ratio (Kz/Kr): 1.

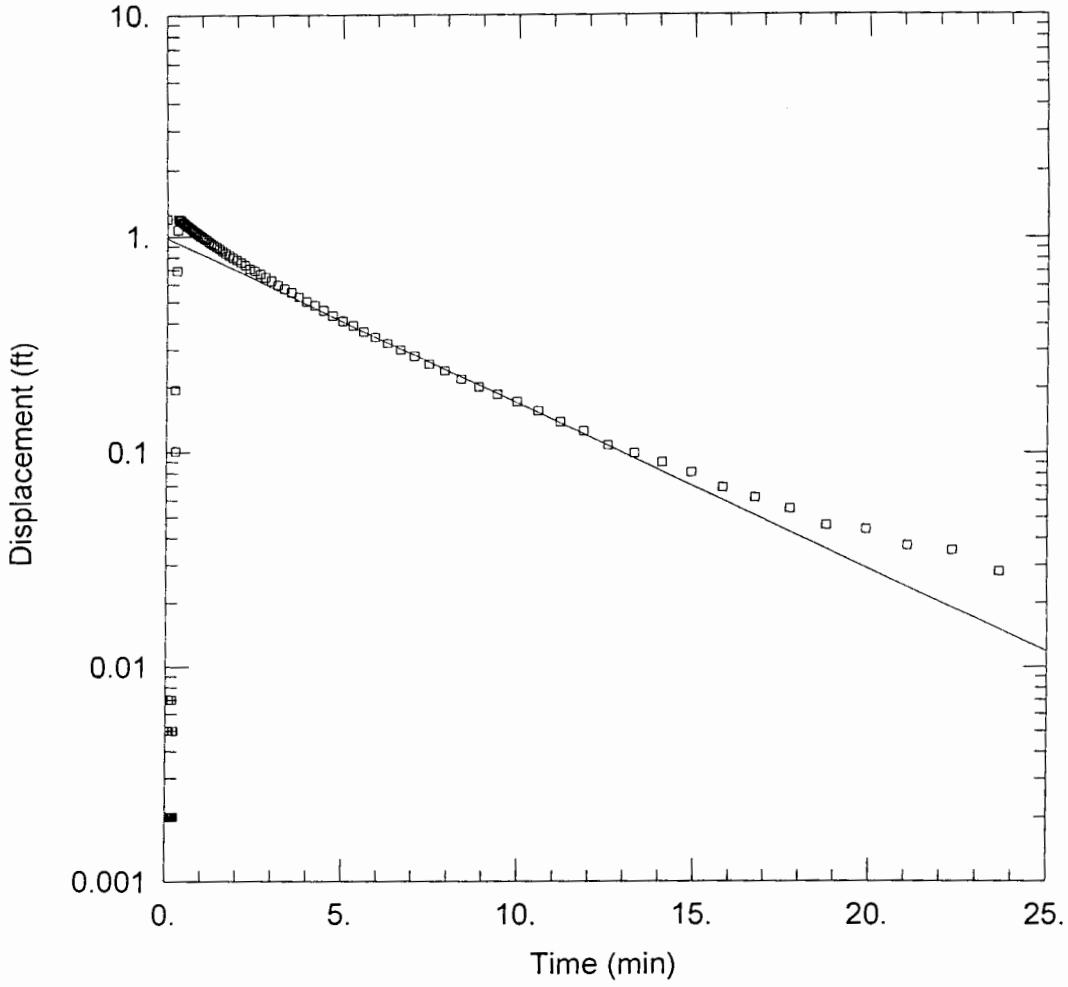
WELL DATA (MW-6)

Initial Displacement: 1.575 ft
Water Column Height: 10. ft
Casing Radius: 0.1667 ft
Wellbore Radius: 0.333 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.001665 ft/min
y0 = 1.175 ft



MW-6 (REBOUND)

Data Set: P:\Federal\DOD\ARMY\projects\6095776\Slug Tests\MW6reb.aqt
Date: 11/08/00 Time: 10:18:47

PROJECT INFORMATION

Company: EA ENGINEERING
Client: USACE-BALTIMORE
Project: 60957.76
Test Location: GERMANTOWN
Test Well: MW-6
Test Date: 11/01/00

AQUIFER DATA

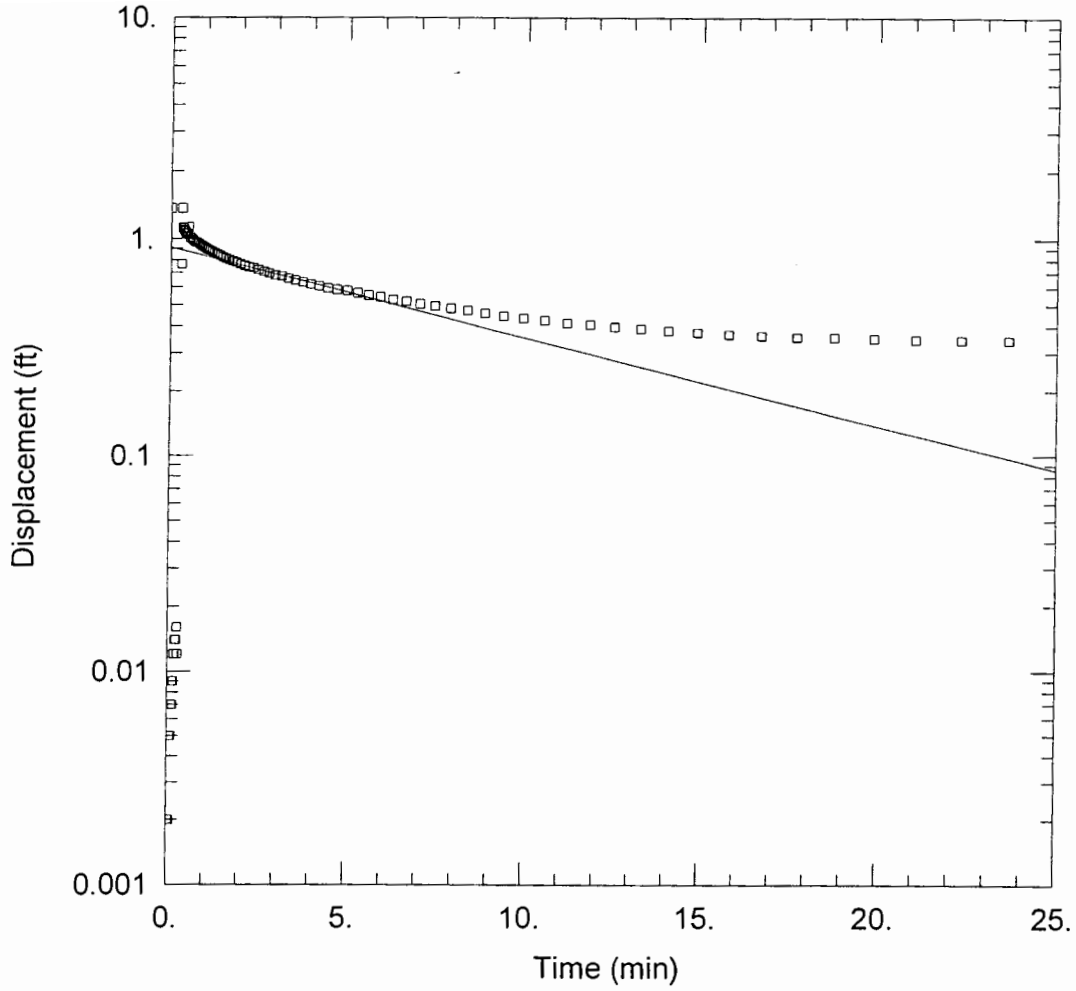
Saturated Thickness: 5. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-10)

Initial Displacement: 1.195 ft
Casing Radius: 0.1667 ft
Screen Length: 10. ft
Water Column Height: 10. ft
Wellbore Radius: 0.333 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.001198 ft/min
y0 = 0.9827 ft



WELL TEST ANALYSIS

Data Set: P:\Federal\DOD\ARMY\projects\6095776\Slug Tests\MW10.aqt
Date: 11/08/00 Time: 10:20:40

PROJECT INFORMATION

Company: EA ENGINEERING
Client: USACE-BALTIMORE
Project: 60957.76
Test Location: GERMANTOWN
Test Well: MW-10
Test Date: 10/31/00

AQUIFER DATA

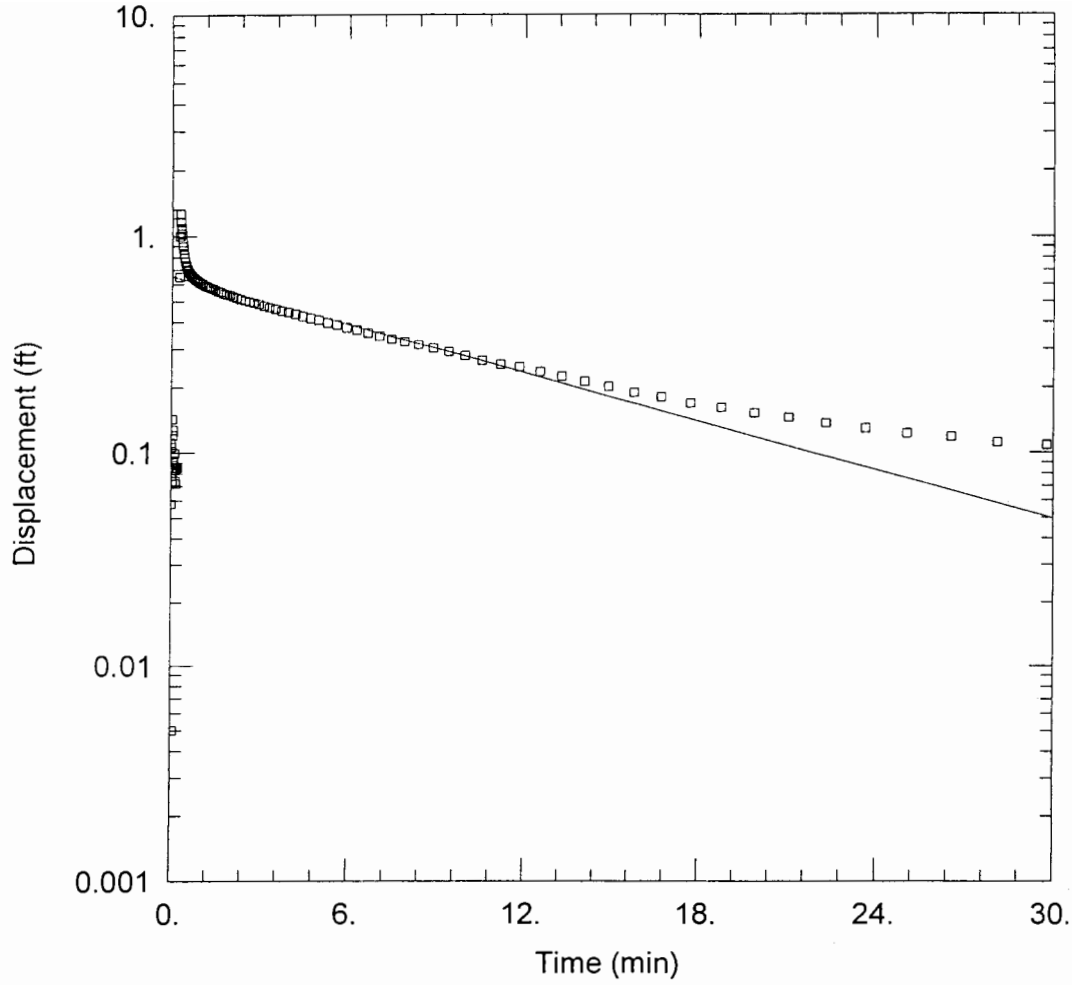
Saturated Thickness: 5. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-10)

Initial Displacement: 1.352 ft
Water Column Height: 10. ft
Casing Radius: 0.1667 ft
Wellbore Radius: 0.333 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0006408 ft/min
y0 = 0.9105 ft



MW-10 (REBOUND)

Data Set: P:\Federal\DOD\ARMY\projects\6095776\Slug Tests\mw6.aqt
Date: 11/08/00 Time: 09:47:05

PROJECT INFORMATION

Company: EA ENGINEERING
Client: USACE-BALTIMORE
Project: 60957.76
Test Location: GERMANTOWN
Test Well: MW-10
Test Date: 11/1/00

AQUIFER DATA

Saturated Thickness: 5. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-6)

Initial Displacement: 1.257 ft
Water Column Height: 10. ft
Casing Radius: 0.1667 ft
Wellbore Radius: 0.333 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.000582 ft/min
y0 = 0.652 ft

APPENDIX E

CERTIFICATE OF DESTRUCTION

A-6676

Clean Earth of New Castle, Inc.

94 Pyles Lane
New Castle, DE 19720
(302) 427-6633

CDR# 12526

Certificate of Destruction and Recycling

This is to certify that the soil delivered to Clean Earth of New Castle, Inc. from the site described in the contaminated soil profile sheet that was issued the Approval Number listed below and represented by the attached treatment report, has been duly treated and rendered safe for beneficial reuse in accordance with the permit to operate issued to Clean Earth of New Castle, Inc. by the Delaware Department of Natural Resources.

Authorized Signature _____

Paul A. Lane, Operations Manager
November 8, 2001

Approval#	**101078**
Generator	GERMANTOWN ARMY RESERVE CENTER
Site Location	5200 WISSAHICKON AVE. PHILADELPHIA, PA 19144
Total Tons This Certificate:	**5.26**
Total Tickets This Certificate:	**1**
Treatment Date or Dates:	10/10/01-10/11/01

Treatment Report

CDR# 12526

Generator GERMANTOWN ARMY RESERVE CENTER

Site Location 5200 WISSAHICKON AVE.
PHILADELPHIA, PA 19144

Total Tickets 1

Total Tons 5.26

				(ppb)			(ppm)	
Ticket #	**Rec. Date**	**Approval #**	**Net Tons**	**B**	**T**	**E**	**X**	**Post TPH**
66982	9/25/01	101078	5.26	<5	<5	<5	<15	22.00

APPENDIX F

LABORATORY ANALYTICAL RESULTS

NOVEMBER 2000

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA1DL

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010661DL

Sample wt/vol: 4.1 (g/ml) G Lab File ID: VC3A8898.D

Level: (low/med) MED Date Received: 9/28/00

% Moisture: not dec. 22 Date Analyzed: 10/18/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	22000	
98-82-8	Isopropylbenzene	2800	
71-43-2	Benzene	550	J
108-88-3	Toluene	780	U
100-41-4	Ethylbenzene	3900	
1330-20-7	Xylenes (total)	9300	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA1

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010661

Sample wt/vol: 3.3 (g/ml) G Lab File ID: VA1C9110.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 22 Date Analyzed: 10/11/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	1500	EB
98-82-8	Isopropylbenzene	110	
71-43-2	Benzene	69	
108-88-3	Toluene	7	J
100-41-4	Ethylbenzene	160	
1330-20-7	Xylenes (total)	410	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA2RE

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010662RE

Sample wt/vol: 5.2 (g/ml) G Lab File ID: VA1C9117.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 19 Date Analyzed: 10/12/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	420	EB
98-82-8	Isopropylbenzene	62	
71-43-2	Benzene	13	
108-88-3	Toluene	6	U
100-41-4	Ethylbenzene	49	
1330-20-7	Xylenes (total)	11	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA2

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010662

Sample wt/vol: 5.9 (g/ml) G Lab File ID: VA1C9093.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 19 Date Analyzed: 10/9/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	150	
98-82-8	Isopropylbenzene	53	
71-43-2	Benzene	2	J
108-88-3	Toluene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	5	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA3

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010663

Sample wt/vol: 5.4 (g/ml) G Lab File ID: VA1C9094.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 28 Date Analyzed: 10/9/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	56	
98-82-8	Isopropylbenzene	7	
71-43-2	Benzene	6	U
108-88-3	Toluene	6	U
100-41-4	Ethylbenzene	5	J
1330-20-7	Xylenes (total)	63	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA2DL

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010662DL

Sample wt/vol: 5.7 (g/ml) G Lab File ID: VC3A8899.D

Level: (low/med) MED Date Received: 9/28/00

% Moisture: not dec. 19 Date Analyzed: 10/18/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	2200	
98-82-8	Isopropylbenzene	850	
71-43-2	Benzene	540	U
108-88-3	Toluene	540	U
100-41-4	Ethylbenzene	540	U
1330-20-7	Xylenes (total)	540	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA4DL

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010664DL

Sample wt/vol: 5.5 (g/ml) G Lab File ID: VC3A8900.D

Level: (low/med) MED Date Received: 9/28/00

% Moisture: not dec. 17 Date Analyzed: 10/18/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	10000	
98-82-8	Isopropylbenzene	4000	
71-43-2	Benzene	550	U
108-88-3	Toluene	550	U
100-41-4	Ethylbenzene	3200	
1330-20-7	Xylenes (total)	7800	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA4

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010664

Sample wt/vol: 4.3 (g/ml) G Lab File ID: VA1C9095.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 17 Date Analyzed: 10/9/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	480	E
98-82-8	Isopropylbenzene	74	
71-43-2	Benzene	8	
108-88-3	Toluene	2	J
100-41-4	Ethylbenzene	51	
1330-20-7	Xylenes (total)	34	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA5RE

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010665RE

Sample wt/vol: 5.0 (g/ml) G Lab File ID: VA1C9119.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 21 Date Analyzed: 10/12/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	6	U
98-82-8	Isopropylbenzene	6	U
71-43-2	Benzene	6	U
108-88-3	Toluene	6	U
100-41-4	Ethylbenzene	6	U
1330-20-7	Xylenes (total)	6	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA5

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010665

Sample wt/vol: 4.4 (g/ml) G Lab File ID: VA1C9096.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 21 Date Analyzed: 10/9/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	200	
98-82-8	Isopropylbenzene	5	J
71-43-2	Benzene	8	
108-88-3	Toluene	13	
100-41-4	Ethylbenzene	10	
1330-20-7	Xylenes (total)	71	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA7

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010667

Sample wt/vol: 3.9 (g/ml) G Lab File ID: VA1C9111.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 28 Date Analyzed: 10/11/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	260	B
98-82-8	Isopropylbenzene	4	J
71-43-2	Benzene	9	U
108-88-3	Toluene	9	U
100-41-4	Ethylbenzene	3	J
1330-20-7	Xylenes (total)	14	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA6

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010666

Sample wt/vol: 5.1 (g/ml) G Lab File ID: VA1C9097.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 26 Date Analyzed: 10/9/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	18	
98-82-8	Isopropylbenzene	2	J
71-43-2	Benzene	3	J
108-88-3	Toluene	7	U
100-41-4	Ethylbenzene	2	J
1330-20-7	Xylenes (total)	5	J

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA8

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010668

Sample wt/vol: 3.6 (g/ml) G Lab File ID: VA1C9112.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 17 Date Analyzed: 10/11/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	560	EB
98-82-8	Isopropylbenzene	20	
71-43-2	Benzene	25	
108-88-3	Toluene	21	
100-41-4	Ethylbenzene	32	
1330-20-7	Xylenes (total)	82	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA7DL

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010667DL

Sample wt/vol: 3.6 (g/ml) G Lab File ID: VC3A8901.D

Level: (low/med) MED Date Received: 9/28/00

% Moisture: not dec. 28 Date Analyzed: 10/18/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	5500	
98-82-8	Isopropylbenzene	960	U
71-43-2	Benzene	960	U
108-88-3	Toluene	960	U
100-41-4	Ethylbenzene	960	U
1330-20-7	Xylenes (total)	960	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA9

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010669

Sample wt/vol: 3.9 (g/ml) G Lab File ID: VA1C9113.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 15 Date Analyzed: 10/11/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	20	B
98-82-8	Isopropylbenzene	8	U
71-43-2	Benzene	3	J
108-88-3	Toluene	8	U
100-41-4	Ethylbenzene	8	U
1330-20-7	Xylenes (total)	8	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA8DL

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010668DL

Sample wt/vol: 3.4 (g/ml) G Lab File ID: VC3A8902.D

Level: (low/med) MED Date Received: 9/28/00

% Moisture: not dec. 17 Date Analyzed: 10/18/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	35000	
98-82-8	Isopropylbenzene	890	U
71-43-2	Benzene	890	U
108-88-3	Toluene	890	U
100-41-4	Ethylbenzene	890	U
1330-20-7	Xylenes (total)	890	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA11

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010671

Sample wt/vol: 3.7 (g/ml) G Lab File ID: VA1C9115.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 28 Date Analyzed: 10/11/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	31	B
98-82-8	Isopropylbenzene	9	U
71-43-2	Benzene	9	U
108-88-3	Toluene	9	U
100-41-4	Ethylbenzene	9	U
1330-20-7	Xylenes (total)	9	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EA10

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010670

Sample wt/vol: 5.0 (g/ml) G Lab File ID: VA1C9114.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 21 Date Analyzed: 10/11/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	78	B
98-82-8	Isopropylbenzene	5	J
71-43-2	Benzene	4	J
108-88-3	Toluene	6	U
100-41-4	Ethylbenzene	14	
1330-20-7	Xylenes (total)	13	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

DUP1DL

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010672DL

Sample wt/vol: 3.7 (g/ml) G Lab File ID: VC3A8903.D

Level: (low/med) MED Date Received: 9/28/00

% Moisture: not dec. 19 Date Analyzed: 10/18/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	14000	
98-82-8	Isopropylbenzene	1500	
71-43-2	Benzene	830	U
108-88-3	Toluene	830	U
100-41-4	Ethylbenzene	1600	
1330-20-7	Xylenes (total)	11000	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

DUP1

Lab Name: ST LABORATORIES Contract: 001278

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010672

Sample wt/vol: 3.9 (g/ml) G Lab File ID: VA1C9116.D

Level: (low/med) LOW Date Received: 9/28/00

% Moisture: not dec. 19 Date Analyzed: 10/12/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	1400	EB
98-82-8	Isopropylbenzene	65	
71-43-2	Benzene	10	
108-88-3	Toluene	8	U
100-41-4	Ethylbenzene	86	
1330-20-7	Xylenes (total)	250	

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EA1DL

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010661DL

Sample wt/vol: 30.9 (g/ml) G Lab File ID: SA1D4086.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 22 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/16/00

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	4100	JD
85-01-8	Phenanthrene	7900	D

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EA1

Lab Name: STL BALTIMORE Contract: _____

Lab Code: - Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010661

Sample wt/vol: 30.9 (g/ml) G Lab File ID: SA1D4066.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 22 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	3500	
85-01-8	Phenanthrene	7100	E

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EA3

Lab Name: STL BALTIMORE Contract:

Lab Code: - Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010663

Sample wt/vol: 29 (g/ml) G Lab File ID: SA1D4058.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 29 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	490	U
85-01-8	Phenanthrene	490	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA2

Lab Name: STL BALTIMORE Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010662

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SA1D4087.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 19 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/16/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	3100	
85-01-8	Phenanthrene	2700	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA4RE

Lab Name: STL BALTIMORE Contract:

Lab Code: - Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010664RE

Sample wt/vol: 31 (g/ml) G Lab File ID: SA1D4088.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 17 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/16/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	3600	
85-01-8	Phenanthrene	9300	E

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EA4

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010664

Sample wt/vol: 31 (g/ml) G Lab File ID: SA1D4068.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 17 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	3300	
85-01-8	Phenanthrene	12000	E

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EA5

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010665

Sample wt/vol: 30.9 (g/ml) G Lab File ID: SA1D4064.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 21 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	150	J
85-01-8	Phenanthrene	870	

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EA4DL

Lab Name: STL BALTIMORE Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0010664DL

Sample wt/vol: 31 (g/ml) G Lab File ID: SA1D4089.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 17 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/16/00

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	6700	D
85-01-8	Phenanthrene	15000	D

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA7

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010667

Sample wt/vol: 30.4 (g/ml) G Lab File ID: SA1D4060.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 28 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	460	U
85-01-8	Phenanthrene	460	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA6

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010666

Sample wt/vol: 29.5 (g/ml) G Lab File ID: SA1D4059.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 26 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	460	U
85-01-8	Phenanthrene	460	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA8RE

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010668RE

Sample wt/vol: 30.5 (g/ml) G Lab File ID: SA1D4090.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 17 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/16/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	10000	E
85-01-8	Phenanthrene	45000	E

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA8

Lab Name: STL BALTIMORE Contract:

Lab Code: - Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010668

Sample wt/vol: 30.5 (g/ml) G Lab File ID: SA1D4069.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 17 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	10000	E
85-01-8	Phenanthrene	46000	E

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA9

Lab Name: STL BALTIMORE Contract:

Lab Code: - Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010669

Sample wt/vol: 31.3 (g/ml) G Lab File ID: SA1D4063.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	98	J
85-01-8	Phenanthrene	860	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA10DL

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010670DL

Sample wt/vol: 31.3 (g/ml) G Lab File ID: SA1D4085.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 21 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/16/00

Injection Volume: 1.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	2500	D
85-01-8	Phenanthrene	6700	D

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA10

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010670

Sample wt/vol: 31.3 (g/ml) G Lab File ID: SA1D4065.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 21 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	2000	
85-01-8	Phenanthrene	5500	E

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DUP1

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010672

Sample wt/vol: 31.2 (g/ml) G Lab File ID: SA1D4062.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 19 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	1600	
85-01-8	Phenanthrene	3200	

040023

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EA11

Lab Name: STL BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010671

Sample wt/vol: 28.9 (g/ml) G Lab File ID: SA1D4061.D

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: 28 decanted:(Y/N) N Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	480	U
85-01-8	Phenanthrene	480	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

RW-1

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011771

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9128.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. _____ Date Analyzed: 11/10/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	2	
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-12

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011772

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9129.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. Date Analyzed: 11/10/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	39	
98-82-8	Cumene	3	
71-43-2	Benzene	0.8	J
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	3	
1330-20-7	Xylenes (total)	13	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-10

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011773

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9130.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. Date Analyzed: 11/10/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	5	
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-4

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011774

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9131.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. _____ Date Analyzed: 11/10/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-6

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011775

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9132.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. Date Analyzed: 11/10/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-7

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011776

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9133.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. _____ Date Analyzed: 11/10/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-8

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011777

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9134.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. _____ Date Analyzed: 11/10/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-9

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011778

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9135.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. _____ Date Analyzed: 11/10/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-5

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011779

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9136.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. Date Analyzed: 11/11/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-11

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011780

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9137.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. Date Analyzed: 11/11/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	8	
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	2	

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

DUP-1

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011781

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9138.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. _____ Date Analyzed: 11/11/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	4	
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	2	

030049

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD BLANK

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011782

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9139.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. Date Analyzed: 11/11/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

030054

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

TRIP BLANK

Lab Name: ST LABORATORIES Contract: 001431

Lab Code: ST LABS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011783

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VC3A9140.D

Level: (low/med) LOW Date Received: 11/2/00

% Moisture: not dec. _____ Date Analyzed: 11/11/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1	U
98-82-8	Cumene	1	U
71-43-2	Benzene	1	U
108-88-3	Toluene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U

030057

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

RW-1

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011771

Sample wt/vol: 1035 (g/ml) ML Lab File ID: SA1D4474.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/10/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	1.2	J
85-01-8	Phenanthrene	9.7	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12

Lab Name: STL-BALTIMORE Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011772

Sample wt/vol: 1030 (g/ml) ML Lab File ID: SA1D4475.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: _____ decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/10/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	3.5	J
85-01-8	Phenanthrene	2.5	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-10

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011773

Sample wt/vol: 1015 (g/ml) ML Lab File ID: SA1D4476.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/10/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	9.9	U
85-01-8	Phenanthrene	9.9	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-4

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011774

Sample wt/vol: 1020 (g/ml) ML Lab File ID: SA1D4477.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/10/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	9.8	U
85-01-8	Phenanthrene	9.8	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011775

Sample wt/vol: 1020 (g/ml) ML Lab File ID: SA1D4478.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	9.8	U
85-01-8	Phenanthrene	9.8	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-7

Lab Name: STL-BALTIMORE Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011776

Sample wt/vol: 1030 (g/ml) ML Lab File ID: SA1D4479.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: _____ decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	9.7	U
85-01-8	Phenanthrene	9.7	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MW-8

Lab Name: STL-BALTIMORE Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011777

Sample wt/vol: 1045 (g/ml) ML Lab File ID: SA1D4491.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: _____ decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	9.6	U
85-01-8	Phenanthrene	9.6	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-9

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011778

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SA1D4492.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	9.5	U
85-01-8	Phenanthrene	9.5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-5

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011779

Sample wt/vol: 1035 (g/ml) ML Lab File ID: SA1D4493.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	9.7	U
85-01-8	Phenanthrene	9.7	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MW-11

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011780

Sample wt/vol: 1035 (g/ml) ML Lab File ID: SA1D4494.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	1.0	J
85-01-8	Phenanthrene	9.7	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DUP-1

Lab Name: STL-BALTIMORE Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0011781

Sample wt/vol: 1025 (g/ml) ML Lab File ID: SA1D4495.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	1.6	J
85-01-8	Phenanthrene	9.8	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: STL-BALTIMORE Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0011782

Sample wt/vol: 1020 (g/ml) ML Lab File ID: SA1D4496.D

Level: (low/med) LOW Date Received: 11/02/00

% Moisture: _____ decanted:(Y/N) N Date Extracted: 11/06/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	9.8	U
85-01-8	Phenanthrene	9.8	U

040060

FEBRUARY 2001

Analytical Report For 102064

for

EA Engineering

Project Manager: Denise Sullivan

Project Name : Germantown, PA

March 2, 2001

GPL

Laboratories

GPL Laboratories, LLLP Certifies that the test results meet all requirements of the NELAC Standards unless otherwise noted.

Reviewed by,
Project Manager

Approved by,
Laboratory Director

202 Perry Parkway Gaithersburg, MD 20877 Phone (301) 926-6802 Fax: (301) 840-1209
www.gplab.com

TOTAL # OF PAGES : 15

GPL

Laboratories

CASE NARRATIVE

CLIENT: **EA ENGINEERING**
PROJECT/SITE: **GERMANTOWN, PA**
WORK ORDER(S): 102064
REVIEW DATE: 3/2/2001

The Case Narrative, Chain of Custody, Sample Receipt Checklist, and the cover page of the Analytical Report, are integral parts of GPL Laboratories' report package. If you did not receive all of these documents, please contact GPL immediately.

Sample Receipt

Five water samples were received on 02/08/2001. The samples were delivered by Fed Ex. The samples were received intact. Sample receipt conditions and temperatures are documented on the Sample Receipt Checklist.

Sample Analysis

Samples were prepared and analyzed by GPL using the analytical methodologies indicated on the Analytical Report of Analysis.

Volatile Analysis

1. Five water samples were analyzed for BTEX, isopropylbenzene, and naphthalene compounds using 8260B methodologies.

2. The matrix spike and matrix spike duplicate analyses were shared with work order 102060. Percent recovery of toluene was outside QC limits in the MSD analysis.

3. A laboratory control sample (LCS) report was submitted with this package.

Semivolatile Analysis

1. Four water samples were extracted using method 3520C. These samples were analyzed for low concentration Fluorene and Phenanthrene by a modified USEPA method 8270C.

2. Matrix spike and duplicate analysis was performed on sample MW-8. A laboratory control sample was extracted and analyzed with this batch.

3. The initial calibration contains seven points. Due to a software limitation, the raw initial calibration evaluation report is submitted. Also, only six points are listed on the Form VI. The response factors listed on the Form VI are correct for the seven points.

Project Manager

Lab Director

Summary of Analytical Results

Client ID MW-8
GPL ID: 102064-001-01-1/3
Matrix: Water
Date Collected: Feb-07-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-14-2001
Prep Time: 07:00
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-14-2001
Time Analyzed 14:36
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-6
GPL ID: 102064-002-01-1/3
Matrix: Water
Date Collected: Feb-07-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-14-2001
Prep Time: 07:00
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-14-2001
Time Analyzed 15:10
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-7
GPL ID: 102064-003-01-1/3
Matrix: Water
Date Collected: Feb-07-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-14-2001
Prep Time: 07:00
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-14-2001
Time Analyzed 15:44
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID FIELD BLANK
GPL ID: 102064-004-01-1/2
Matrix: Water
Date Collected: Feb-07-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-14-2001
Prep Time: 07:00
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-14-2001
Time Analyzed 16:17
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID TRIP BLANK
GPL ID: 102064-005-01-1/3
Matrix: Water
Date Collected: Feb-07-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-14-2001
Prep Time: 07:00
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-14-2001
Time Analyzed 16:51
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-8
GPL ID: 102064-001-04-1/2
Matrix: Water
Date Collected: Feb-07-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-01-2001
Time Analyzed 16:59
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.5	ug/L	U	1
Phenanthrene	BQL	0.5	ug/L	U	1

Summary of Analytical Results

Client ID MW-6
GPL ID: 102064-002-04-1/2
Matrix: Water
Date Collected: Feb-07-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-01-2001
Time Analyzed 19:00
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	0.358	0.526	ug/L	J	1
Phenanthrene	BQL	0.526	ug/L	U	1

Summary of Analytical Results

Client ID MW-7
GPL ID: 102064-003-04-1/2
Matrix: Water
Date Collected: Feb-07-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-01-2001
Time Analyzed 19:41
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.526	ug/L	U	1
Phenanthrene	BQL	0.526	ug/L	U	1

Summary of Analytical Results

Client ID FIELD BLANK
GPL ID: 102064-004-03-1/2
Matrix: Water
Date Collected: Feb-07-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-01-2001
Time Analyzed 20:23
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.526	ug/L	U	1
Phenanthrene	BQL	0.526	ug/L	U	1

GPL LABORATORIES, LLP
ANALYTICAL RESULTS

Project Name : Germantown, PA

Date Printe March 2, 2001

GPL ID	Client ID
102064-001-01-1/3	MW-8
102064-002-01-1/3	MW-6
102064-003-01-1/3	MW-7
102064-004-01-1/2	FIELD BLANK
102064-005-01-1/3	TRIP BLANK
102064-001-04-1/2	MW-8
102064-002-04-1/2	MW-6
102064-003-04-1/2	MW-7
102064-004-03-1/2	FIELD BLANK

GPL LABORATORIES, LLLP

Qualifier Definitions

U = Indicates that the compound was analyzed for but not detected at or above the reporting limit

Organics:

B = Indicates that the analyte was found in the associated blank as well as in the sample

D = Indicates that the analyte was reported from a diluted analysis

E = Indicates that the concentration detected exceeded the calibration range of the instrument

J = Value is less than the reporting limits but greater than the MDL

P = Indicates that there is greater than 25% difference for detected pesticide/Aroclor results between the two GC columns

Metals:

B = Indicates that the reported value was less than the reporting limit but greater than or equal to the IDL/MDL

E = Indicates that reported value is estimated because of the possible presence of interference (i.e., the serial dilution not within control limits)

H = Indicates that the element was found in the associated blank as well as in the sample and the value is greater than or equal to the reporting limit

N = Spiked sample recovery not within control limits

• = Duplicate analysis not within control limits

GPL LABORATORIES, LLLP

202 Perry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference:

1 of 1 Pgs.

Project: GERMANTOWN - USARC
Client: EA ENGINEERING
Send Results To: DENISE SULLIVAN
Address: 15 LOUDON CIRCLE
SPARKS, MD 21152
Phone: (410) 771-495

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Turnaround Time	# of Containers	Container Type	Preservative Used	Type of Analysis: VOA	Type of Analysis: BNA	Lab Cooler No.	CLIENT COMMENTS
						3	2					
						40 ML	1L. AM					
						HCL	—					
MW-8	2/7/01	1105	GW	AJM					3	2		
MW-6	↓	1235	GW	AJM					3	2		
MW-7		1355	GW	AJM					3	2		
FIELD BLANK		1425	GW	AJM					3	2		
TRIP BLANK	—	—	W	—					3	—		

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
A. McBride	2/7/01 1600			C. Yom	2/08/01 1033
Relinquished By:	Date/Time	Received By:	Date/Time / Shipper:	Airbill No.:	
Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp: 2.3	

G.P. W.O. 10269

014

Analytical Report For 102066

for

EA Engineering

Project Manager: Denise Sullivan

Project Name : Germantown, PA

March 2, 2001

GPL

Laboratories

GPL Laboratories, LLLP Certifies that the test results meet all requirements of the NELAC Standards unless otherwise noted.

Reviewed by,
Project Manager

Approved by,
Laboratory Director

202 Perry Parkway Gaithersburg, MD 20877 Phone (301) 926-6802 Fax: (301) 840-1209
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TOTAL # OF PAGES : 23

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Laboratories

CASE NARRATIVE

CLIENT: **EA ENGINEERING**
PROJECT/SITE: **GERMANTOWN PA**
WORK ORDER(S): 102066
REVIEW DATE: 3/2/01

The Case Narrative, Chain of Custody, Sample Receipt Checklist, and the cover page of the Analytical Report, are integral parts of GPL Laboratories' report package. If you did not receive all of these documents, please contact GPL immediately.

Sample Receipt

Eight water samples were received on 02/08/2001. The samples were delivered by Eastern Connection. The samples were received intact. Sample receipt conditions and temperatures are documented on the Sample Receipt Checklist.

Sample Analysis

Samples were prepared and analyzed by GPL using the analytical methodologies indicated on the Analytical Report of Analysis.

Volatile Analysis

1. Eight water samples were analyzed for volatile compounds using 8260 low-level methodologies.

2. Matrix spike and matrix spike duplicate were shared with work order #102060. Percent recoveries for Benzene, Toluene and Chlorobenzene were outside of QC limits on the MS analysis and Toluene was outside of QC limits on the MSD analysis.

Semivolatile Analysis

1. Eight water samples were extracted using method 3520C. These samples were analyzed for low concentration Fluorene and Phenanthrene by a modified USEPA method 8270C.

2. Matrix spike and duplicate analysis was performed on sample MW-8. A laboratory control sample was extracted and analyzed with this batch.

3. The initial calibration contains seven points. Due to a software limitation, the raw initial calibration evaluation report is submitted. Also, only six points are listed on the Form VI. The response factors listed on the Form VI are correct for the seven points.

Project Manager

Lab Director

Summary of Analytical Results

Client ID MW-11
GPL ID: 102066-001-01-1/3
Matrix: Water
Date Collected: Feb-05-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-13-2001
Prep Time: 06:17
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-13-2001
Time Analyzed 13:54
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	0.510	1	ug/L	J	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	2.65	1	ug/L		1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-12
GPL ID: 102066-002-01-1/3
Matrix: Water
Date Collected: Feb-05-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-13-2001
Prep Time: 06:17
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-13-2001
Time Analyzed 14:28
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	0.660	1	ug/L	J	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	1.14	1	ug/L		1
Naphthalene	6.30	1	ug/L		1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	1.05	1	ug/L		1

Summary of Analytical Results

Client ID MW-4
GPL ID: 102066-003-01-1/3
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-13-2001
Prep Time: 06:17
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-13-2001
Time Analyzed 15:02
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-10
GPL ID: 102066-004-01-1/3
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-13-2001
Prep Time: 06:17
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-13-2001
Time Analyzed 15:36
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-9
GPL ID: 102066-005-01-1/3
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-13-2001
Prep Time: 06:17
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-13-2001
Time Analyzed 16:14
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID RW-1
GPL ID: 102066-006-01-1/3
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-13-2001
Prep Time: 06:17
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-13-2001
Time Analyzed 16:47
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	1.79	1	ug/L		1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-5
GPL ID: 102066-007-01-1/3
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-13-2001
Prep Time: 06:17
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-13-2001
Time Analyzed 17:21
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID DUP
GPL ID: 102066-008-01-1/3
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW5030B
Prep Date: Feb-13-2001
Prep Time: 06:17
Prep Chemist: Jannina S. Bryan

Analytical Method: SW8260LL
Date Analyzed: Feb-13-2001
Time Analyzed 17:54
Analyst: Jannina S. Bryan

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-11
GPL ID: 102066-001-04-1/2
Matrix: Water
Date Collected: Feb-05-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-01-2001
Time Analyzed 21:05
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	0.856	0.556	ug/L		1
Phenanthrene	0.633	0.556	ug/L		1

Summary of Analytical Results

Client ID MW-12
GPL ID: 102066-002-04-1/2
Matrix: Water
Date Collected: Feb-05-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-01-2001
Time Analyzed 21:46
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	1.71	0.556	ug/L		1
Phenanthrene	1.50	0.556	ug/L		1

Summary of Analytical Results

Client ID MW-10
GPL ID: 102066-004-04-1/2
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-01-2001
Time Analyzed 23:10
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.526	ug/L	U	1
Phenanthrene	0.158	0.526	ug/L	J	1

Summary of Analytical Results

Client ID MW-4
GPL ID: 102066-003-04-1/2
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-01-2001
Time Analyzed 22:28
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.5	ug/L	U	1
Phenanthrene	BQL	0.5	ug/L	U	1

Summary of Analytical Results

Client ID RW-1
GPL ID: 102066-006-04-1/2
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-02-2001
Time Analyzed 00:34
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	0.790	0.5	ug/L		1
Phenanthrene	BQL	0.5	ug/L	U	1

Summary of Analytical Results

Client ID MW-9
GPL ID: 102066-005-04-1/2
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-01-2001
Time Analyzed 23:52
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.526	ug/L	U	1
Phenanthrene	BQL	0.526	ug/L	U	1

Summary of Analytical Results

Client ID DUP
GPL ID: 102066-008-04-1/1
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-02-2001
Time Analyzed 01:57
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.526	ug/L	U	1
Phenanthrene	BQL	0.526	ug/L	U	1

Summary of Analytical Results

Client ID MW-5
GPL ID: 102066-007-04-1/2
Matrix: Water
Date Collected: Feb-06-2001
Date Received: Feb-08-2001

Prep Method: SW3520C-LL
Prep Date: Feb-10-2001
Prep Time: 00:00
Prep Chemist: Veena Telhan

Analytical Method: SW8270-LL
Date Analyzed: Mar-02-2001
Time Analyzed 01:15
Analyst: Constantine Ditsious

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.526	ug/L	U	1
Phenanthrene	BQL	0.526	ug/L	U	1

GPL LABORATORIES, LLLP

Qualifier Definitions

U = Indicates that the compound was analyzed for but not detected at or above the reporting limit

Organics:

B = Indicates that the analyte was found in the associated blank as well as in the sample

D = Indicates that the analyte was reported from a diluted analysis

E = Indicates that the concentration detected exceeded the calibration range of the instrument

J = Value is less than the reporting limits but greater than the MDL

P = Indicates that there is greater than 25% difference for detected pesticide/Aroclor results between the two GC columns

Metals:

B = Indicates that the reported value was less than the reporting limit but greater than or equal to the IDL/MDL

E = Indicates that reported value is estimated because of the possible presence of interference (i.e., the serial dilution not within control limits)

H = Indicates that the element was found in the associated blank as well as in the sample and the value is greater than or equal to the reporting limit

N = Spiked sample recovery not within control limits

• = Duplicate analysis not within control limits

GPL LABORATORIES, LLP
ANALYTICAL RESULTS

Project Name : Germantown, PA

Date Printe March 2, 2001

GPL ID	Client ID
102066-001-01-1/3	MW-11
102066-002-01-1/3	MW-12
102066-003-01-1/3	MW-4
102066-004-01-1/3	MW-10
102066-005-01-1/3	MW-9
102066-006-01-1/3	RW-1
102066-007-01-1/3	MW-5
102066-008-01-1/3	DUP
102066-001-04-1/2	MW-11
102066-002-04-1/2	MW-12
102066-003-04-1/2	MW-4
102066-004-04-1/2	MW-10
102066-005-04-1/2	MW-9
102066-006-04-1/2	RW-1
102066-007-04-1/2	MW-5
102066-008-04-1/1	DUP

GPL LABORATORIES, LLLP

202 Perry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference

of Pgs.

Project: GERMANTOWN
Client: EA ENGINEERING
Send Results To: Denise Sullivan
Address: 15 Loveton Cir
SPARKS, MD 21152
Phone: 410 771 4950

Turnaround Time
# of Containers
Container Type
Preservative Used
Type of Analysis

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	VOA	BNA									CLIENT COMMENTS
					# of Containers: 3	2									
					Container Type: 40ml	1L.A									
					Preservative Used: HCL	—									
MW-11	2/5	1310	GW	JD	3	2									
MW-12	2/5	1305	GW	AJM	3	2									
MW-4	2/6	1105	GW	AJM	3	2									
MW-10	2/6	1245	GW	AJM	3	2									
MW-9	2/6	1415	GW	AJM	3	2									
RW-1	2/6	1215	GW	JD	3	2									
MW-5	2/6	1405	GW	JD	3	2									
DUP	2/6				3	2									
TRIP BLANK					3										

Lab Cooler No.

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
			02/09/01 Scott Gaertner	Lauren Petrik 02/08/01	4:50 pm
Relinquished By:	Date/Time	Received By:	Date/Time / Shipper:	Airbill No.:	
Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp: 3.0°C 5.0°C	

G.P. W.O. 102066

GPL

Laboratories

CASE NARRATIVE FOR GPL #105075

CLIENT: EA ENGINEERING
PROJECT/SITE: GERMANTOWN, PA
WORK ORDER(S): 105075
REVIEW DATE: 06/08/01

The Case Narrative, Chain of Custody, Sample Receipt Checklist, and the cover page of the Analytical Report, are integral parts of GPL Laboratories' report package. If you did not receive all of these documents, please contact GPL immediately.

Sample Receipt

Thirteen water samples were received on 05/12/2001. The samples were delivered by Fed Ex. The samples were received intact. Sample receipt conditions and temperatures are documented on the Sample Receipt Checklist.

Sample Analysis

Samples were prepared and analyzed by GPL using the analytical methodologies indicated on the Analytical Report of Analysis.

Volatile Analysis

1. Thirteen water samples were analyzed for six volatile compounds using EPA SW8260B low level methodologies.
2. Laboratory control samples (LCS) were submitted with the package.
3. Matrix spike and matrix spike duplicate were shared with work order 105081.
4. Samples MW-9 & MW-8 were reanalyzed within the holding time due to surrogate out of limit. The initial analysis were reported.
5. The lowest calibration level for Naphthalene was 2 ug/L.

Semivolatile Analysis

1. Twelve water samples were extracted using method 3520C. These samples were analyzed for low level semivolatile PAH compounds, Fluorene and Phenanthrene, by using a modified USEPA method 8270C.
2. Matrix spike and duplicate analysis was performed on sample MW-8. A laboratory control sample was also extracted and analyzed with this batch.
3. Due to a software limitation, the FORMVI and FORMVII submitted in this package are the original forms from the acquisition software.
4. Several samples showed surrogate recoveries slightly outside of QC limits. No re-extraction was performed as these limits are adapted from the regular 8270C extraction method and are advisory.

Project Manager

Lab Director

MAY 2001

Summary of Analytical Results

Client ID MW-10
GPL ID: 105075-002-01-1/3
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 15:33

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-9
GPL ID: 105075-001-01-1/3
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 14:59

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	0.600	1	ug/L	J	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID EQUIPMENT BLANK
GPL ID: 105075-004-01-1/3
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 16:42

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-8
GPL ID: 105075-003-01-1/3
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 16:08

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-12
GPL ID: 105075-006-01-1/3
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 17:50

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	1.35	1	ug/L		1
Ethylbenzene	0.610	1	ug/L	J	1
Isopropylbenzene	1.17	1	ug/L		1
Naphthalene	11.6	1	ug/L		1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	4.54	1	ug/L		1

Summary of Analytical Results

Client ID MW-6
GPL ID: 105075-005-01-1/3
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 17:16

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID DUPLICATE
GPL ID: 105075-008-01-1/3
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 18:57

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-11
GPL ID: 105075-007-01-1/3
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 18:24

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	2.59	1	ug/L		1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-5
GPL ID: 105075-010-01-1/3
Matrix: Water
Date Collected: 05/11/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 20:06

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-7
GPL ID: 105075-009-02-2/3
Matrix: Water
Date Collected: 05/11/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/22/01
Prep Time: 06:48

Analytical Method: SW8260LL
Date Analyzed: 05/22/01
Time Analyzed 14:28

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-4
GPL ID: 105075-012-01-1/3
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 21:14

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID RW-1
GPL ID: 105075-011-02-2/3
Matrix: Water
Date Collected: 05/11/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/22/01
Prep Time: 06:48

Analytical Method: SW8260LL
Date Analyzed: 05/22/01
Time Analyzed 15:17

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	1.60	1	ug/L		1
Ethylbenzene	1.11	1	ug/L		1
Isopropylbenzene	2.07	1	ug/L		1
Naphthalene	1.87	1	ug/L		1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	1.87	1	ug/L		1

Summary of Analytical Results

Client ID MW-9
GPL ID: 105075-001-04-1/2
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 12:23

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.105	ug/L	U	1
Phenanthrene	0.126	0.105	ug/L		1

Summary of Analytical Results

Client ID TRIP BLANK
GPL ID: 105075-013-01-1/2
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW5030B
Prep Date: 05/17/01
Prep Time: 12:27

Analytical Method: SW8260LL
Date Analyzed: 05/17/01
Time Analyzed 21:48

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
Total Xylenes	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-8
GPL ID: 105075-003-04-1/2
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 13:45

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.105	ug/L	U	1
Phenanthrene	BQL	0.105	ug/L	U	1

Summary of Analytical Results

Client ID EQUIPMENT BLANK
GPL ID: 105075-004-04-1/2
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 15:48

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.105	ug/L	U	1
Phenanthrene	BQL	0.105	ug/L	U	1

Summary of Analytical Results

Client ID MW-6
GPL ID: 105075-005-04-1/2
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 16:28

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.105	ug/L	U	1
Phenanthrene	BQL	0.105	ug/L	U	1

Summary of Analytical Results

Client ID MW-12
GPL ID: 105075-006-04-1/2
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 17:09

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.1	ug/L	U	1
Phenanthrene	BQL	0.1	ug/L	U	1

Summary of Analytical Results

Client ID MW-11
GPL ID: 105075-007-04-1/2
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 17:49

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	0.280	0.1	ug/L		1
Phenanthrene	BQL	0.1	ug/L	U	1

Summary of Analytical Results

Client ID DUPLICATE
GPL ID: 105075-008-04-1/2
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 18:30

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.1	ug/L	U	1
Phenanthrene	BQL	0.1	ug/L	U	1

Summary of Analytical Results

Client ID MW-7
GPL ID: 105075-009-04-1/2
Matrix: Water
Date Collected: 05/11/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 19:11

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.1	ug/L	U	1
Phenanthrene	BQL	0.1	ug/L	U	1

Summary of Analytical Results

Client ID MW-5
GPL ID: 105075-010-04-1/2
Matrix: Water
Date Collected: 05/11/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 19:52

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.1	ug/L	U	1
Phenanthrene	BQL	0.1	ug/L	U	1

Summary of Analytical Results

Client ID RW-1
GPL ID: 105075-011-04-1/2
Matrix: Water
Date Collected: 05/11/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 20:33

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	3.78	0.1	ug/L		1
Phenanthrene	0.250	0.1	ug/L		1

Summary of Analytical Results

Client ID MW-4
GPL ID: 105075-012-04-1/2
Matrix: Water
Date Collected: 05/10/01
Date Received: 05/12/01

Prep Method: SW3520C-LL
Prep Date: 05/17/01
Prep Time: 12:00

Analytical Method: SW8270-LL
Date Analyzed: 05/31/01
Time Analyzed 21:14

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.105	ug/L	U	1
Phenanthrene	BQL	0.105	ug/L	U	1

GPL LABORATORIES, LLP
ANALYTICAL RESULTS

Project Name : Germantown, PA

Date Printe June 8, 2001

GPL ID	Client ID
105075-001-01-1/3	MW-9
105075-002-01-1/3	MW-10
105075-003-01-1/3	MW-8
105075-004-01-1/3	EQUIPMENT BLANK
105075-005-01-1/3	MW-6
105075-006-01-1/3	MW-12
105075-007-01-1/3	MW-11
105075-008-01-1/3	DUPLICATE
105075-009-02-2/3	MW-7
105075-010-01-1/3	MW-5
105075-011-02-2/3	RW-1
105075-012-01-1/3	MW-4
105075-013-01-1/2	TRIP BLANK
105075-001-04-1/2	MW-9
105075-002-04-1/2	MW-10
105075-003-04-1/2	MW-8
105075-004-04-1/2	EQUIPMENT BLANK
105075-005-04-1/2	MW-6
105075-006-04-1/2	MW-12
105075-007-04-1/2	MW-11
105075-008-04-1/2	DUPLICATE
105075-009-04-1/2	MW-7
105075-010-04-1/2	MW-5
105075-011-04-1/2	RW-1
105075-012-04-1/2	MW-4

GPL LABORATORIES, LLLP

Qualifier Definitions

U = Indicates that the compound was analyzed for but not detected at or above the reporting limit

Organics:

B = Indicates that the analyte was found in the associated blank as well as in the sample

D = Indicates that the analyte was reported from a diluted analysis

E = Indicates that the concentration detected exceeded the calibration range of the instrument

J = Value is less than the reporting limits but greater than the MDL

P = Indicates that there is greater than 25% difference for detected pesticide/Aroclor results between the two GC columns

Metals:

B = Indicates that the reported value was less than the reporting limit but greater than or equal to the IDL/MDL

E = Indicates that reported value is estimated because of the possible presence of interference (i.e., the serial dilution not within control limits)

H = Indicates that the element was found in the associated blank as well as in the sample and the value is greater than or equal to the reporting limit

N = Spiked sample recovery not within control limits

• = Duplicate analysis not within control limits

GEL LABORATORIES, LLLP

202 Perry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference:

1 of 2 Pgs.

Project: Germantown
Client: EA
Send Results To: Denise Sullivan
Address: 15 Loveton Circle
Sparks, MD 21152
Phone: (410) ~~374-5408~~ 771-4950

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	VOC 8260B	SVOC 8270									CLIENT COMMENTS
Turnaround Time															Lab Cooler No.
# of Containers					3	2									
Container Type					VOA	Amber									
Preservative Used					HCl	1									
MW-9	5/10	1245	Water	MJR/ABS	X										VOCs - low level analyze for Benzene, Ethyl Benzene, Isopropyl Benzene, Napthalene, Toluene, and Total Xylenes ONLY!
MW-10		1250			X										
MW-8		1435			X										
Equipment Blank		1550			X										
MW-6		1630			X										
MW-12		1730			X										
MW-11		1850			X										
Duplicate	—	—		—	X										
MW-7	5/11	1020		MJR/ADR	X										SVOC analyze for Phenanthrene and Fluorene ONLY!
MW-5	5/11	1120			X	X									
RW-1	5/11	1210			X	X									
MW-4	5/10	1515			X										

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
	5/11 1500				5/12/11 0930
Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
Relinquished By:	Date/Time	Received By:	Lab Comments:		Temp:
					3.0

G.P. W.O. 105075

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...PLE LABORATORIES, LLC
202 Perry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference:

2 of 2 Pgs.

Project: Germantown
Client: EA
Send Results To: Denise Sullivan
Address: 15 Loveton Circle
Sparks, MD 21152
Phone: (410) 771-4950

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Type of Analysis: VOC 8260B	Turnaround Time	# of Containers	Container Type	Preservative Used	Lab Cooler No.	CLIENT COMMENTS
Trip Blank	—	—	—	—	X						ONLY 2 (TWO) TRIP BLANKS AND ONE (1) temperature blank shipped w/ bottles
Temp. Blank	—	—	—	—	X						
											VOCs as stated on sheet 1

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	5/11 1500			[signature]	5/14/01 0900
Relinquished By:	Date/Time	Received By:	Date/Time / Shipper:	Airbill No.:	
					01
Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:	
				3.0	

G.P. W.O. 105075

GPL LABORATORIES, LLLP

202 Perry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference:

1 of 1 Pgs.

Project: Germantown
Client: EA
Send Results To: Denise Sullivan
Address: 15 Loveton Circle
Sparks MD 21152
Phone: (410) 771-4950

Turnaround Time:
# of Containers: 2
Container Type: AMBER
Preservative Used: —
Type of Analysis: SVOC 8270

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	SVOC 8270	Lab Cooler No.	CLIENT COMMENTS
MW-9	5/10	1245	Water	HVR/ADR	X		SVOC analysis for Phenanthrene and Fluorene ONLY!
MW-10		1250			X		
MW-8		1435			X		
MW-6		1630			X		
MW-11		1650			X		

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	5/11 1520			[signature]	5/12/04 9:30
Relinquished By:	Date/Time	Received By:	Date/Time / Shipper:	Airbill No.:	
				#2	
Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:	
				3.0	

G.P. W.O. 15575

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CPL LABORATORIES, LLP

202 Perry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference:

1 of 1 Pgs.

Project: Germantown
Client: EA
Send Results To: Denise Sullivan
Address: 15 Loveton Circle
Sparks, MD 21152
Phone: (410) 771-4850

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	# of Containers	Container Type	Preservative Used	SVOC 8270	Lab Cooler No.	CLIENT COMMENTS
~~MW-9~~	5/10	1245	Water	MJ/AMR	2	Amber	—	X		SVOC analyze for Phenanthrene and Fluorene ONLY!
~~MW-10~~		1250						X		
~~MW-8~~		1435						X		
Equipment Blank		1530						X		
~~MW-6~~		1630						X		crossed out samples are in 3rd cooler
MW-12		1730						X		
~~MW-11~~		1830						X		
Duplicate	—	—						X		
MW-7	5/11	1020						X		
MW-4	5/10	1515						X		

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
	5/11 1500				5/12/11 09:00
Relinquished By:	Date/Time	Received By:	Date/Time / Shipper:	Airbill No.:	
					@3
Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:	
				3.0	

G.P. W.O. 105075

GPL Laboratories, LLLP

Figure 1
SAMPLE RECEIPT CHECKLIST

W.O. No: 125075 Carrier Name: FedEx

Client Name: EA Geomatrix Prepared (Logged In) By: [illegible] Initials 5/7/21 Date

Date Received: 5/12/21 Project: Geomatrix

Time Received: 09:00 Site: _____

Received By: [illegible] VOA Holding Blank I.D. No: _____

	YES	NO		YES	NO
Airbill/Manifest Present?	X		Trip Blanks: No. of Sets 2	X	
No. 782026123557			Field Blanks: No. of Sets		X
Shipping Container in Good Condition?	X		Equip. Blank: No. of Sets 1	X	
Custody Seals Present on Shipping Container?	X		Field Duplicate: No. of Sets 1	X	
Condition: Broken			MS/MSD: No of Sets		X
Intact-not dated or signed			VOA Vials Have Zero Headspace?	X	
Intact-dated and signed X			Preservatives Added to Sample?	X	
Usage of Tamper Evident Type	X		pH Check Required?		X
			Performed By?		X
Chain-of-Custody Present?	X		Ice Present in Shipping Container?	X	Gusset
Chain-of-Custody Agrees with Sample Labels?	X				
Chain-of-Custody Signed?	X				
Packing Present in Shipping Container?	X				
Type of Packing Bubble wrap					
Custody seals on Sample Bottles?		X			
Condition: Good Broken					
Total Number of Sample Bottles 6 2					
Total Number of Samples 1 3					
Samples Intact?	X				
Sufficient Sample Volume for Indicated Test?	X				

Container #	Temp.	Container #	Temp.
#1	3.3		
2	3.0		
3	3.0		

Project Manager Contacted?
Name: [illegible]
Date Contacted: 5/14/21

Any NO response must be detailed in the comments section below. If items are not applicable to particular samples or contracts, they should be marked N/A/

COMMENTS: _____

Checklist Completed By: [illegible]

Date: 5/14/21

SOP No: F.2V10

000034

FEBRUARY 2002

Analytical Report For 202093

for

EA Engineering

Project Manager: Denise Sullivan

Project Name : Germantown, PA

March 4, 2002

GPL

Laboratories

GPL Laboratories, LLLP Certifies that the test results meet all requirements of the NELAC Standards unless otherwise noted.

Reviewed by,
Project Manager

Approved by,
Laboratory Director

202 Perry Parkway Gaithersburg, MD 20877 Phone (301) 926-6802 Fax: (301) 840-1209
www.gplab.com

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GPL
Laboratories

CASE NARRATIVE FOR GPL #202093

CLIENT: EA ENGINEERING
PROJECT/SITE: GERMANTOWN PA
WORK ORDER(S): 202093
REVIEW DATE: 03/04/02

The Case Narrative, Chain of Custody, Sample Receipt Checklist, and the cover page of the Analytical Report are integral parts of GPL Laboratories' report package. If you did not receive all of these documents please contact GPL immediately.

Sample Receipt

Eleven water samples were received on 02/15/02. The samples were delivered by GPL Courier. The samples were received intact. Sample receipt conditions and temperatures are documented on the Sample Receipt Checklist.

Sample Analysis

Samples were prepared and analyzed by GPL using the analytical methodologies indicated on the Analytical Report of Analysis.

Volatile Analysis

1. Eleven water samples were analyzed for volatile organic using 8260B methodologies.
2. The matrix spike and matrix spike duplicate analyses were performed on sample DUP-1.
3. One laboratory control sample (LCS) report was submitted with this package.

Semivolatile Analysis

1. Eleven water samples were extracted by method 3520C. These samples were analyzed for two semivolatile organic compounds, Fluorene and Phenanthrene by using a modified low level method 8270C.
2. Due to insufficient sample volume, QC was performed on a blank spike and blank spike duplicate.
3. Due to a software limitation, the Form VI and Form VII's submitted in this data package are from the run software. They could not be produced in the Enviroforms software.

Project Manager

Lab Director

Summary of Analytical Results

Client ID MW-5
GPL ID: 202093-001-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 12:28
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	0.950	1	ug/L	J	1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	BQL	1	ug/L	U	1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-6
GPL ID: 202093-002-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 13:02
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	BQL	1	ug/L	U	1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-7
GPL ID: 202093-003-01-1/2
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 13:36
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	0.570	1	ug/L	J	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	0.780	1	ug/L	J	1
m,p-Xylenes	BQL	1	ug/L	U	1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-8
GPL ID: 202093-004-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 14:10
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	BQL	1	ug/L	U	1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-9
GPL ID: 202093-005-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 14:44
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	BQL	1	ug/L	U	1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-10
GPL ID: 202093-006-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 15:17
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	BQL	1	ug/L	U	1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-11
GPL ID: 202093-007-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 15:51
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	BQL	1	ug/L	U	1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-12
GPL ID: 202093-008-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 16:25
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	0.580	1	ug/L	J	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	0.520	1	ug/L	J	1
Naphthalene	9.20	1	ug/L		1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	1.50	1	ug/L		1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID DUP-1
GPL ID: 202093-009-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 16:59
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	0.520	1	ug/L	J	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	8.70	1	ug/L		1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	1.40	1	ug/L		1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID RINSE
GPL ID: 202093-010-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 11:20
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	BQL	1	ug/L	U	1
Naphthalene	BQL	1	ug/L	U	1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	BQL	1	ug/L	U	1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID RW-1
GPL ID: 202093-011-01-1/3
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW5030B
Prep Date: 02/25/02
Prep Time: 09:12
Prep Batch 53347

Analytical Method: SW8260LL
Date Analyzed: 02/25/02
Time Analyzed 11:54
Analysis Batch 52490

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Benzene	BQL	1	ug/L	U	1
Ethylbenzene	BQL	1	ug/L	U	1
Isopropylbenzene	1.10	1	ug/L		1
Naphthalene	13.0	1	ug/L		1
Toluene	BQL	1	ug/L	U	1
m,p-Xylenes	5.20	1	ug/L		1
o-Xylene	BQL	1	ug/L	U	1

Summary of Analytical Results

Client ID MW-5
GPL ID: 202093-001-04-1/1
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW3520C-LL
Prep Date: 02/19/02
Prep Time: 08:05
Prep Batch 53276

Analytical Method: SW8270-LL
Date Analyzed: 02/28/02
Time Analyzed 16:10
Analysis Batch 52596

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.105	ug/L	U	1
Phenanthrene	BQL	0.105	ug/L	U	1

Summary of Analytical Results

Client ID MW-6	**Prep Method: SW3520C-LL**	**Analytical Method: SW8270-LL**
GPL ID: 202093-002-04-1/1	**Prep Date: 02/19/02**	**Date Analyzed: 03/01/02**
Matrix: Water	**Prep Time: 08:05**	**Time Analyzed 13:39**
Date Collected: 02/14/02	**Prep Batch 53276**	**Analysis Batch 52596**
Date Received: 02/15/02		

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	0.579	0.105	ug/L		1
Phenanthrene	BQL	0.105	ug/L	U	1

Summary of Analytical Results

Client ID MW-7
GPL ID: 202093-003-03-1/1
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW3520C-LL
Prep Date: 02/19/02
Prep Time: 08:05
Prep Batch 53276

Analytical Method: SW8270-LL
Date Analyzed: 03/01/02
Time Analyzed 14:29
Analysis Batch 52596

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.105	ug/L	U	1
Phenanthrene	BQL	0.105	ug/L	U	1

Summary of Analytical Results

Client ID MW-8	**Prep Method: SW3520C-LL**	**Analytical Method: SW8270-LL**
GPL ID: 202093-004-04-1/1	**Prep Date: 02/19/02**	**Date Analyzed: 03/01/02**
Matrix: Water	**Prep Time: 08:05**	**Time Analyzed 15:20**
Date Collected: 02/14/02	**Prep Batch 53276**	**Analysis Batch 52596**
Date Received: 02/15/02		

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.105	ug/L	U	1
Phenanthrene	BQL	0.105	ug/L	U	1

Summary of Analytical Results

Client ID MW-9
GPL ID: 202093-005-04-1/1
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW3520C-LL
Prep Date: 02/19/02
Prep Time: 08:05
Prep Batch 53276

Analytical Method: SW8270-LL
Date Analyzed: 03/01/02
Time Analyzed 16:11
Analysis Batch 52596

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.111	ug/L	U	1
Phenanthrene	BQL	0.111	ug/L	U	1

Summary of Analytical Results

Client ID MW-10
GPL ID: 202093-006-04-1/1
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW3520C-LL
Prep Date: 02/19/02
Prep Time: 08:05
Prep Batch 53276

Analytical Method: SW8270-LL
Date Analyzed: 03/01/02
Time Analyzed 17:01
Analysis Batch 52596

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.105	ug/L	U	1
Phenanthrene	BQL	0.105	ug/L	U	1

Summary of Analytical Results

Client ID MW-11
GPL ID: 202093-007-04-1/1
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW3520C-LL
Prep Date: 02/19/02
Prep Time: 08:05
Prep Batch 53276

Analytical Method: SW8270-LL
Date Analyzed: 03/01/02
Time Analyzed 17:52
Analysis Batch 52596

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	0.460	0.1	ug/L		1
Phenanthrene	0.150	0.1	ug/L		1

Summary of Analytical Results

Client ID MW-12
GPL ID: 202093-008-04-1/1
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW3520C-LL
Prep Date: 02/19/02
Prep Time: 08:05
Prep Batch 53276

Analytical Method: SW8270-LL
Date Analyzed: 03/01/02
Time Analyzed 18:43
Analysis Batch 52596

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	2.62	0.111	ug/L		1
Phenanthrene	0.433	0.111	ug/L		1

Summary of Analytical Results

Client ID DUP-1
GPL ID: 202093-009-04-1/1
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW3520C-LL
Prep Date: 02/19/02
Prep Time: 08:05
Prep Batch 53276

Analytical Method: SW8270-LL
Date Analyzed: 03/01/02
Time Analyzed 19:33
Analysis Batch 52596

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	2.56	0.111	ug/L		1
Phenanthrene	0.433	0.111	ug/L		1

Summary of Analytical Results

Client ID RINSE
GPL ID: 202093-010-04-1/1
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW3520C-LL
Prep Date: 02/19/02
Prep Time: 08:05
Prep Batch 53276

Analytical Method: SW8270-LL
Date Analyzed: 03/01/02
Time Analyzed 20:23
Analysis Batch 52596

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	BQL	0.118	ug/L	U	1
Phenanthrene	BQL	0.118	ug/L	U	1

Summary of Analytical Results

Client ID RW-1
GPL ID: 202093-011-04-1/1
Matrix: Water
Date Collected: 02/14/02
Date Received: 02/15/02

Prep Method: SW3520C-LL
Prep Date: 02/19/02
Prep Time: 08:05
Prep Batch 53276

Analytical Method: SW8270-LL
Date Analyzed: 03/01/02
Time Analyzed 21:13
Analysis Batch 52596

Parameter	Result	Rep Limit	Units	Qualifier	D.F.
Fluorene	1.51	0.105	ug/L		1
Phenanthrene	0.337	0.105	ug/L		1

GPL LABORATORIES, LLP
ANALYTICAL RESULTS

Project Name : Germantown, PA

Date Printe March 4, 2002

GPL ID	Client ID
202093-001-01-1/3	MW-5
202093-002-01-1/3	MW-6
202093-003-01-1/2	MW-7
202093-004-01-1/3	MW-8
202093-005-01-1/3	MW-9
202093-006-01-1/3	MW-10
202093-007-01-1/3	MW-11
202093-008-01-1/3	MW-12
202093-009-01-1/3	DUP-1
202093-010-01-1/3	RINSE
202093-011-01-1/3	RW-1
202093-001-04-1/1	MW-5
202093-002-04-1/1	MW-6
202093-003-03-1/1	MW-7
202093-004-04-1/1	MW-8
202093-005-04-1/1	MW-9
202093-006-04-1/1	MW-10
202093-007-04-1/1	MW-11
202093-008-04-1/1	MW-12
202093-009-04-1/1	DUP-1
202093-010-04-1/1	RINSE
202093-011-04-1/1	RW-1

GPL LABORATORIES, LLLP

Qualifier Definitions

U = Indicates that the compound was analyzed for but not detected at or above the reporting limit

Organics:

B = Indicates that the analyte was found in the associated blank as well as in the sample

D = Indicates that the analyte was reported from a diluted analysis

E = Indicates that the concentration detected exceeded the calibration range of the instrument

J = Value is less than the reporting limits but greater than the MDL

P = Indicates that there is greater than 25% difference for detected pesticide/Aroclor results between the two GC columns

Metals:

B = Indicates that the reported value was less than the reporting limit but greater than or equal to the IDL/MDL

E = Indicates that reported value is estimated because of the possible presence of interference (i.e., the serial dilution not within control limits)

H = Indicates that the element was found in the associated blank as well as in the sample and the value is greater than or equal to the reporting limit

N = Spiked sample recovery not within control limits

***** = Duplicate analysis not within control limits

GPL LABORATORIES, LLLP

202 Perry Parkway
Gaithersburg, MD 20877
(301) 926-6802
Fax (301) 840-1209

Contract #/Billing Reference

of Pgs.

Project: FREDERICK
Client: EA
Send Results To: Denise Sullivan
Address: 15 Loveton Circle
Sparks, MD 21152
Phone: 410 771 4950

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Type of Analysis: 8260	8270	Lab Cooler No.	CLIENT COMMENTS
Turnaround Time					STD	STD		
# of Containers					3	1		
Container Type					VOA	Liter		
Preservative Used					HCL	ICE		
MW-5	2/14/02	1315	GW	CT	X	X		
MW-6		1330						
MW-7		1445						
MW-8		1000						
MW-9		1100						
MW-10		1730						
MW-11		1700						
MW-12		1610						
DP-1								
Rinse		1715						
RW-1		1535						
TRIP					X			

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	2/15/02 10:40	[signature] 2/15/02 10:40	[signature]	[signature]	2/15/02 3:45

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:
				4.0°C 4.0°C

G.P. W.O. 200093

202093

petrik, laura
From: dsulliva@eaest.com
Sent: Tuesday, February 12, 2002 4:23 PM
To: petrik, laura
Subject: Germantown sampling

---------- Forwarded by Denise Sullivan/Loveton/EAEST on 02/12/2002 04:22 PM ----------

Denise Sullivan

02/12/2002 04:04 PM

To: Petrik@gpl.com
cc:
Subject: Germantown sampling

As discussed for groundwater sampling, we will be sampling 10 wells and will need the following:

13 samples total (10 wells, + 1 trip blank + 1 duplicate + 1 equipment blank)

Samples to be analyzed for the following VOCs/SVOCs by USEPA Method 8260/8270:

VOC (8260): Benzene, toluene, ethylbenzene, xylene, cumene, and naphthalene
SVOC (8270): Fluorene and phenanthrene

I will specify the above analytes on the chain of custody as well.

I would like to have the sample containers delivered on Wednesday 2/13/02 and picked up on Friday, 2/15/02.

Thanks!!!!

Denise

GPL Laboratories, LLLP

Figure 1
SAMPLE RECEIPT CHECKLIST

W.O. No: 102093
Client Name: EA Eng
Date Received: 02/15/02
Time Received: 1040 Am
Received By: GPL Courier

Carrier Name: GPL Courier
Prepared (Logged In) By: [initials] 02/19/02 (Initials Date)
Project: Germantown
Site:
VOA Holding Blank I.D. No:

	YES	NO
Airbill/Manifest Present?		✓
No.		
Shipping Container in Good Condition?	✓	
Custody Seals Present on Shipping Container?		✓
Condition: Broken		
Intact-not dated or signed		
Intact-dated and signed		
Usage of Tamper Evident Type		✓
Chain-of-Custody Present?	✓	
Chain-of-Custody Agrees with Sample Labels?	✓	
Chain-of-Custody Signed?	✓	
Packing Present in Shipping Container?	✓	
Type of Packing: Bubble wrap		
Custody seals on Sample Bottles?		✓
Condition: Good ____ Broken ____		
Total Number of Sample Bottles ____		
Total Number of Samples ____		
Samples Intact?	✓	
Sufficient Sample Volume for Indicated Test?	✓	

	YES	NO
Trip Blanks: No. of Sets		✓
Field Blanks: No. of Sets		✓
Equip. Blank: No. of Sets		✓
Field Duplicate: No. of Sets		✓
MS/MSD: No of Sets		✓
VOA Vials Have Zero Headspace?	✓	
Preservatives Added to Sample?	✓	
pH Check Required?		✓
Performed By?		
Ice Present in Shipping Container?	✓	

Container #	Temp.	Container #	Temp.
#1	4.0°C		
#2	4.0°C		

02/18/02

Project Manager Contacted?
Name: Lauren Petrick
Date Contacted: 2/19/02

Any NO response must be detailed in the comments section below. If items are not applicable to particular samples or contracts, they should be marked N/A/

COMMENTS: No Bottles received for Trip Blanks.
2 Temp Blanks received in cooler #2
Sample MW-7 received 2 voa vials
left V-mail for D Sullivan 2-18-02 re missing trip blank Petrick

Checklist Completed By: [signature]
Date: 02/18/02

SOP No: F.2V11

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Germantown USARC
Date:	4/30/02
Prepared by:	EA Engineering Science and Technology
Contaminant:	Benzene

X

SOURCE CONC (MG/L)	DISTANCE TO LOCATION OF CONCERN (ft)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)
0.00135	90	4.5	0.45	0.001	0.35	25	16

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retardation (R)	V (=K*i/n*R) (ft/day)
1.47E+00	0.006	0.35	1.8	58	2.29E-02	7.83074286	0.00321809

	y(ft)	z(ft)	Time (days)
	90	0	0
	8030		

Projected Conc. at 90 0 0

at 8030 days

0.000 mg/l

AREAL MODEL CALCULATION DOMAIN

Length (ft) 100

Width (ft) 50

	10	20	30	40	50	60	70	80	90	100
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Germantown USARC
Date:	4/30/02
Prepared by:	EA Engineering Science and Technology
Contaminant:	Toluene

X

SOURCE CONC (MG/L)	DISTANCE TO LOCATION OF CONCERN (ft)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)
0.001	90	4.5	0.45	0.001	9.01	25	16

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
1.47E+00	0.03	0.35	1.8	130	2.29E-02	16.3102857	0.00772519

	y(ft)	z(ft)	Time (days)
90	0	0	8030

Projected Conc. at		90	0	0
at	8030	days		
0.000	mg/l			

AREAL MODEL	CALCULATION DOMAIN
Length (ft)	100
Width (ft)	50

	10	20	30	40	50	60	70	80	90	100
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Germantown USARC						
Date:	4/30/02	Prepared by:	EA Engineering Science and Technology				
		Contaminant:	Ethyl benzene				
	X						
SOURCE CONC (MG/L)	DISTANCE TO LOCATION OF CONCERN (ft)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)
0.001	90	4.5	0.45	0.001	1.11	25	16

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retardation (R)	V (=K*i/n*R) (ft/day)
1.47E+00	0.03	0.35	1.8	220	2.29E-02	26.9097143	0.00468232

	y(ft)	z(ft)	Time (days)
90	0	0	8030

Projected Conc. at	90	0	0
at	8030	days	
0.000	mg/l		

AREAL MODEL DOMAIN	CALCULATION
Length (ft)	100
Width (ft)	50

	10	20	30	40	50	60	70	80	90	100
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project: Germantown USARC

Date: 4/30/02 Prepared by: EA Engineering Science and Technology

Contaminant: Cumene

X

SOURCE CONC (MG/L)	DISTANCE TO LOCATION OF CONCERN (ft)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)
0.0052	90	4.5	0.45	0.001	15.81	25	16

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retardation (R)	V (=K*i/n*R) (ft/day)
1.47E+00	0.03	0.35	1.8	2800	2.29E-02	330.76	0.00038094

	y(ft)	z(ft)	Time (days)
90	0	0	8030

Projected Conc. at	90	0	0
at 8030 days			
0.000 mg/l			

AREAL MODEL CALCULATION DOMAIN

Length (ft)	100
Width (ft)	50

	10	20	30	40	50	60	70	80	90	100
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Germantown USARC						
Date:	4/30/02	Prepared by:	EA Engineering Science and Technology				
		Contaminant:	Naphthalene				
	X						
SOURCE CONC (MG/L)	DISTANCE TO LOCATION OF CONCERN (ft)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)
0.0092	90	4.5	0.45	0.001	0.98	25	16

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retardation (R)	V (=K*i/n*R) (ft/day)
1.47E+00	0.03	0.35	1.8	950	2.29E-02	112.882857	0.0011162

	y(ft)	z(ft)	Time (days)
90	0	0	8030

Projected Conc. at	90	0	0
at 8030 days			
0.000 mg/l			

	AREAL MODEL	CALCULATION DOMAIN
	Length (ft)	100
	Width (ft)	50

	10	20	30	40	50	60	70	80	90	100
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Germantown USARC
Date:	4/30/02
Prepared by:	EA Engineering Science and Technology
Contaminant:	Xylene

X

SOURCE CONC (MG/L)	DISTANCE TO LOCATION OF CONCERN (ft)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)
0.0015	90	4.5	0.45	0.001	0.69	25	16

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retardation (R)	V (=K*i/n*R) (ft/day)
1.47E+00	0.03	0.35	1.8	350	2.29E-02	42.22	0.00298437

	y(ft)	z(ft)	Time (days)
90	0	0	8030

Projected Conc. at	90	0	0
at 8030 days			
0.000 mg/l			

AREAL MODEL CALCULATION DOMAIN	
Length (ft)	100
Width (ft)	50

	10	20	30	40	50	60	70	80	90	100
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Germantown USARC						
Date:	4/30/02	Prepared by:	EA Engineering Science and Technology				
		Contaminant:	Fluorene				
	X						
SOURCE CONC (MG/L)	DISTANCE TO LOCATION OF CONCERN (ft)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)
0.00262	90	4.5	0.45	0.001	2.11	25	16

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retardation (R)	V (=K*i/n*R) (ft/day)
1.47E+00	0.03	0.35	1.8	7900	2.29E-02	931.394286	0.00013528

y(ft)	z(ft)	Time (days)
90	0	8030

Projected Conc. at	90	0	0
at	8030	days	
0.000	mg/l		

AREAL MODEL CALCULATION DOMAIN

Length (ft) 100

Width (ft) 50

	10	20	30	40	50	60	70	80	90	100
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Germantown USARC						
Date:	4/30/02	Prepared by:	EA Engineering Science and Technology				
		Contaminant:	Phenanthrene				
	X						
SOURCE CONC (MG/L)	DISTANCE TO LOCATION OF CONCERN (ft)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)
0.00433	90	4.5	0.45	0.001	0.63	25	16

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retardation (R)	V (=K*i/n*R) (ft/day)
1.47E+00	0.03	0.35	1.8	38000	2.29E-02	4476.31429	2.8148E-05

	y(ft)	z(ft)	Time (days)
90	0	0	8030

Projected Conc. at		90	0	0
at	8030	days		
0.000	mg/l			

AREAL MODEL DOMAIN	
Length (ft)	100
Width (ft)	50

	10	20	30	40	50	60	70	80	90	100
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Assumptions for Contaminants										
	Units	Benzene	Toluene	Ethyl Benzene	Xylene	Naphthalene	Cumene	Fluorene	Phenanthrene	Source
Concentration	mg/l	0.00135	0.001	0.001	0.0015	0.0092	0.0052	0.00262	0.00433	Concentration in MW-12
Distance to Location of Concern (property boundary)	feet	90	90	90	90	90	90	90	90	Average measured distance from MW-2 and MW-3 to Fence (Property
Longitudinal Dispersivity	feet	45	45	45	45	45	45	45	45	=X/10 where X is distance contaminant has traveled by advective transport (velocity x time). Regarding Germantown, greatest distance from
Transverse Dispersivity	feet	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	= Ax/10 (default per PADEP Quick Domenico.xls instructions)
Verticle Dispersivity	feet	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	Conservative default per PADEP
Lambda (first order decay)	days-1	0.35	9.01	1.11	0.69	0.98	15.81	2.11	0.63	PADEP Act 2 Land Regulations, Appendix A, Table 5
Source Width	feet	25	25	25	25	25	25	25	25	Conservatively assumed 25' based on current/historic sampling and historic
Source Thickness	feet	16	16	16	16	16	16	16	16	Thickness of contaminated soil contributing contamination + water table fluctuation. Conservatively
Hydraulic Conductivity	ft/day	1.4688	1.4688	1.4688	1.4688	1.4688	1.4688	1.4688	1.4688	Based on slug test data
Hydraulic Gradient	ft/ft	0.033333333	0.033333333	0.033333333	0.033333333	0.033333333	0.033333	0.033333333	0.033333333	Based on elevation survey
Porosity		0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	Silty sand; Freeze & Cherry, 1979.
Soil Bulk Density		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	Conservative default per PADEP
KOC		58	130	220	350	950	2800	7900	38000	PADEP Act 2 Land Regulations, Appendix A, Table 5
foc		0.0229	0.0229	0.0229	0.0229	0.0229	0.0229	0.0229	0.0229	Determined in lab
Retardation										Calculated by spreadsheet
Velocity	ft/day	90	90	90	90	90	90	90	90	Calculated by spreadsheet
Y, Cordinate for which solution is desired	ft	0	0	0	0	0	0	0	0	PADEP Act 2 Land Regulations, Appendix A, Table 5
Z, Cordinate for which solution is desired		0	0	0	0	0	0	0	0	PADEP Act 2 Land Regulations, Appendix A, Table 5
T, time after contaminant began moving	days	8030	8030	8030	8030	8030	8030	8030	8030	18 years (release identified in 1992)

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18. Real Property Action Plan

18.1 Purpose. The Real Property Action Plan is used to define actions relative to the BRAC recommendation to close the Reese United States Army Reserve Center in Chester, PA, the United States Army Reserve Organizational Maintenance Shop in Chester, PA, the Germantown Veterans Memorial United States Army Reserve Center in Philadelphia, PA, the Horsham Memorial United States Army Reserve Center in Horsham, PA, the 1LT Ray S. Musselman Memorial United States Army Reserve Center in Norristown, PA, and the North Penn Memorial United States Army Reserve Center in Norristown, PA, and relocate units to a new Armed Forces Reserve Center with an organizational maintenance facility at Willow Grove Joint Reserve Base, PA. The Army shall establish an enclave at Willow Grove Joint Reserve Base, PA, to retain essential facilities to support activities of the Reserve Components

18.2 Assumptions.

The below assumptions were used in creating this action plan. Conditions that change the assumptions will directly impact the plan.

- The United States Congress will not disapprove the Commission's recommendation forwarded by the President.
- Full funding will be made available.
- The U.S. Army Corps of Engineers (USACE) will meet required beneficial occupancy dates; otherwise, timelines will change and onetime cost and recurring savings will shift.

- NEPA requirements will be completed in a timely manner to support the proposed action and there will be no legal challenges.
- Command and control relationships may change throughout the process.
- Units will move only once; directly from old facility to new facility.
- Adjustments to milestones may be required based on the ability to meet the execution timeline.

18.3 General.

Land and Land Use:

The Germantown facility is located on 4.94 acres of land located at 5200 Wissahickon Ave., Philadelphia¸ Pa. adjacent to a VA administration facility. Acreage was purchased in 1955. The facility is located in a primarily residential area.

The Reese facility is located on 5 acres of land located at 500 West 24th Street, Chester, Pa 19013-4999. Acreage was purchased in 1957.

The North Penn facility is located on 19 acres of land located at 1625 Berks Road, Norristown, Pa.. The facility is located in a residential/non-industrial area. Land was purchased in 1955.

The Mussleman facility is located on 3.4 acres of land located at 1020 Sandy Street, Norristown, Pa. Acreage was purchased in 1958. The facility is located in a non-industrial, residential area.

The Horsham facility is located on 7 acres of land located at 936 Easton Road, Horsham, Pa. The facility is located in semi-rural suburbs of Philadelphia with light industry and farmland. Acreage was purchased in 1959.

18.3.1 **Land and Anomalies. None.**

18.3.2 **Facilities.**

The Germantown facility consists of a two story brick training building and a separate 5 bay OMS building. The buildings were constructed in 1957 and have had several major facility component improvements in recent years. The POV parking area is completely fenced in as well as a separately fenced MEP area.

IFS data:

1.) Training Building	30,538 GSF
2.) OMS Building	6300 GSF
3.) POV Pavement	4866 SY
4.) MEP Pavement	6382 SY
5.) Access Roads	77 SY
6.) Sidewalk	690 SY
7.) Fence Line	1400 LF

The Reese facility consists of two buildings, a two story training building and an OMS building. The facility, constructed in 1958, is constructed of brick veneer over concrete masonry. The general condition of the buildings is Good.

IFS Data:

1.) Training Bldg	22677 SF
2.) OMS Bldg	5173 SF
3.) Unheated Storage	280 SF
4.) POV Pavement	3491 SY
5.) OMS Parking	6249 SY
6.) Sidewalk	262 SY

The North Penn facility consists of a Training building and OMS building, both constructed in 1974, a non heated storage building

constructed in 1955, and a flammable material storage building constructed in 1958. Overall condition of the facility is Good.

IFS data

1) Training Bldg	45,000 SF
2) OMS Bldg	6,800 SF
3) Unheated Storage	707 SF
4) Flammable Mat Storage	54 SF
5) POV Parking	11,817 SY
6) MEP Parking	4,583 SY
7) Access Roads	11,032 SY
8) Sidewalks	2,405 SY
9) Fence	4,990 LF

The Mussleman facility consists of a two story training building and an OMS Building both originally constructed in 1959.The buildings are of brick construction. The general condition of the buildings is Good

IFS Data:

1.) Training Building	35,496 GSF
2.) OMS Building	3,850 GSF
3.) POV Pavement	4,636 SY
4.) MEP Parking	2,772 SY
5.) Access Roads	316 SY
6.) Sidewalks	585 SY
7.) Fence line	1,561 LF

The Horsham facility consists of a single two story brick faced training building and a separate brick faced OMS building originally constructed in 1959. The general condition of the buildings is good. The facility has a POV and a separate, fenced MEP area.

IFS data

1.) Training building	25041 GSF
2.) OMS	3710 GSF
3.) POV Parking	3368 SY

4.) MEP Parking	8803 SY
5.) Access Roads	841 SY
6.) Sidewalk	275 SY
7.) Fence	1743 LF

18.3.3 **Outgrants and Tenants.**

a. The current tenants of the Germantown facility
223rd QM Co.
3/317 BN (BCT), 80th Div.

b. Current tenants of Reese facility
858 MD CO DENTAL SVC
430 TC Det 1
949TH TC CO Det 2
338 MD BDE HHC
USMCR 6th ESB

Outgrant of Reese to Electric Company for Constriction, Maintenance, and Use Right of Way.

c. Current tenants of the North Penn facility
619 EN DET
633 EN DET
153 JA TM 1
153 JA TM 5
153 JA TM 6
153 JA TM 7
153 JA TM 8
153 JA TM 9
369 EN DET FIREFIGHTING
733 TC CO MED TRK PLS DET 1

319 EN DET
307 AG BAND ARMY
427 TC CO MED TRK PLS

d The current tenant of the Mussleman facility:
358 CA HHC BDE

e. The current tenants or the Horsham facility
23 SS AMSA, 2/228th AV BN
367th MP CO

18.3.4 Off-post Leases. N/A

18.3.5 Infrastructure (Linear Assets).

a. The Germantown facility is serviced by local electric and gas companies. Water distribution, sanitary sewer and storm sewer are also maintained thru local utility companies. (Reportable USAR Assets)

1) Electric Power Distribution	776 LF
2) Gas Pipeline	0
3) Sanitary Sewer	125 LF
4) Water Distribution	571 LF
5) Storm Sewer	0

b. The Reese facility is serviced by local electric and gas companies. Water distribution, sanitary sewer and storm sewer are also maintained thru local utility companies. (Reportable USAR Assets)

1)	Electric Power Distribution	480 LF
2)	Gas Pipeline	475 LF
3)	Sanitary Sewer	0

4)	Combined Sewer	440 LF
5)	Storm Sewer	0

c. The North Penn facility is serviced by local electric and gas companies. Water distribution, sanitary sewer and storm sewer are also maintained thru local utility companies. (Reportable USAR Assets)

1)	Electric Power Distribution	10,575 LF
2)	Gas Pipeline	0
3)	Sanitary Secondary Treat.	12.0 KG
4)	Sanitary Sewer	6,069 LF
5)	Pump Station Potable	4.0 KG
6)	Water Distribution	1,440 LF
7)	Fire Protection Non-Potabl	1,565 LF
8)	Pump station Non-Potable	2.5 KG
9)	Reservoir Non-Potable	600,000 GA
10)	Storm Sewer	920 LF

d. The Mussleman facility is serviced by local electric and gas companies. Water distribution, sanitary sewer and storm sewer are also maintained thru local utility companies. (Reportable USAR Assets)

1)	Electric Power Distribution	616 LF
2)	Gas Pipeline	90 LF
3)	Sanitary Sewer/Ind. Waste	596 LF
4)	Water Well Potable	2.4 KG
5)	Water Distribution	472 LF
6)	Storm Sewer	1,108 LF

e. The Horsham facility is serviced by local electric and gas companies. Water distribution, sanitary sewer and storm sewer are also maintained thru local utility companies. (Reportable USAR Assets)

1)	Electric Power Distribution	2,480 LF

2)	Gas Pipeline	0
3)	Combined Sewer	505 LF
4)	Water Distribution	863 LF
5)	Storm Sewer	0

18.3.6 Privatization Initiatives (Planned, In-progress, Complete).

TBD

18.3.7 Enclaves. None.

18.4 Caretaker Operations.

a) USAR will perform caretaker operations of this facility until final disposal. PA ARNG will follow direction of the Governor of the Commonwealth of Pennsylvania.

18.5 Map and Drawing Inventory. Yes.

18.6 Points of Contact

Table 18-1 is a list of the POCs and collaborators for the preparation of this Action Plan.

	POC Name	POC Phone	POC Email
ACSIM Real Property	Audrey Ormerod	703-601-2520	Audrey.C.Ormerod@us.army.mil
US Army Corps of Engineers HQ (HQUSACE)	Jeanne Herman	202-761-1082	Jeanne.f.herman@hq02.usace.army.mil
Current Real Property Accountability Officer	Ken Dunham	412 604-8163	kenneth.dunham@usar.army.mi
Supporting US Army Corps of Engineers RE District	Robert Webb	(410) 952-3666	bob.webb@nab02.usace.army.mil
99th RRC	Ken Dunham	412 604-8163	kenneth.dunham@usar.army.mil

	POC Name	POC Phone	POC Email

Table 18-1 Real Property Action Plan POC List

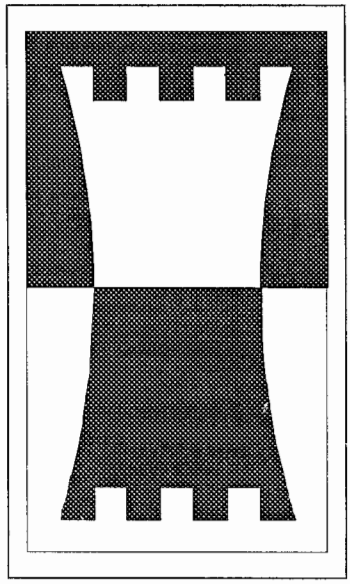
18.7 Completed Forms / Attachments

Table 18-2 is a list of the completed forms and attachments with accompany this Action Plan.

Form / Attachment	File Name
Land Report	TBP
List of Outgrants Report	TBP
Facilities Report	TBP
Infrastructure Report	TBP
Privatization Report	TBP
Maps, Drawings, Photos Inventory Report	TBP
Maps, Drawings, Photos	TBP
Disposal Report	TBP

Table 18-2 Real Property Action Plan Forms / Attachments

DEPARTMENT OF THE ARMY
HEADQUARTERS 416TH ENGINEER COMMAND
FACILITIES ENGINEERING TDA (AUGMENTATION)
4454 WEST CERMAK ROAD
CHICAGO, IL 60623-2991



TOTAL FACILITY ASSESSMENT REPORT

Germantown Veterans Memorial USAR Center
Facility EMAAR number:PA076
99th Regional Support Command

Conducted 16-18 SEP 1996
by the
Fort Indiantown Gap Facilities Engineering Team
of
Engineer Support Group-East

416th ENGINEER COMMAND
USAR FACILITY
TOTAL FACILITY ASSESSMENT

INSTALLATION NAME: GERMANTOWN VETERANS MEMORIAL USAR CENTER
INSTALLATION EMMAR NUMBER: PA076 DATE: 17 NOV 96

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SECTION 1- EXECUTIVE SUMMARY
INSTALLATION NAME: Germantown Veterans Memorial USAR Center
INSTALLATION NUMBER: PA 076

The Germantown Veterans Memorial USAR Center was assessed on 16-18 September 1996 by the Fort Indiantown Gap FE Team. The facility consists of a single two story brick faced building with a separate brick faced five bay OMS. The OMS was designed as a "Shed, Motor Vehicle Storage" and has no office or administrative space. Besides the two buildings, there is a privately owned vehicle (POV) parking area and military equipment parking (MEP) area. The POV parking area is shared with the nearby GSA work force and is at 100% capacity during the work week. The center is fenced, although construction at the adjacent Federal Building has disturbed some of the security fencing. The facilities are occupied by the 233rd Quartermaster Company.

The facility was constructed in 1957 and is showing signs of age. There have been recent improvements and maintenance performed. The heating system is a natural gas fired hot water boiler that was installed in 1993. An interior painting project was underway during this survey, and a contract to replace windows is pending.

Despite these projects, overall the facility is in marginal condition, with many projects backlogged.

In addition to existing projects, four RPMA projects were generated to repair the security fence, remove vegetation, repair overhead doors, and replace stair treads. Five other projects were identified to be completed by local Ordering Officer Authority or self help.

The Energy Audit identified several energy conservation opportunities, including reducing lighting operating hours, cleaning and maintaining lighting systems, and installation of new lighting fixtures.

The Safety Assessment found no RAC 1 findings. RAC 2 findings were the result of a lack of GFI circuit protection in latrines, an assembly hall exit door blocked, several wire tripping hazards in the administrative area, and a leaking roof allowing a light fixture to fall. The RAC 3 findings related to an uncovered electrical junction box, second floor lighting inoperable, cigarette smoking observed in the recruiting office, and assembly hall lights burned out. There were also several RAC 4 and RAC 5 findings.

The Arms Vault structural certification was reviewed and found to be in compliance. A recommendation was made to install a dehumidifier in the arms room.

A table has been made with the EMAAR showing updated room usage and square footage.

The environmental assessment was completed with Class 1 findings resulting from the lack a written Hazard Communications Program, the lack of an MSDS file, and outdoor storage of hazardous material without secondary containment. There were also two Class 3 findings resulting from the lack of spill containment materials and the lack of radon survey documentation.

TODD D. GRIFFITH
MAJ, EN, USAR
Assessment Team Leader

SECTION 2-USAR FACILITY ASSESSMENT IDENTIFICATION

INSTALLATION NAME: Germantown Veterans Memorial USAR Center

STREET ADDRESS: 5200 Wissahickon Avenue

CITY: Philadelphia STATE: PA ZIP CODE: 19144

FACILITY IDENFICATION NUMBER: PA076

RSC/RSG: 99th RSC, Oakdale,PA

TYPE FACILITY:

A.	USARC:	X	B.	AFRC:		C.	OMS:	D.	AMSA:	
E.	DS/GS:		F.	MED:		G.	WET:	H.	FLIGHT	
I.	ECS:		J.	CTF:		K.	OTHER:			

ASSESSMENT PERFORMED BY: Fort Indiantown Gap Facilities Engineering Team

FACILITY ENGINEERING TEAM INCLUDED:

MAJ Todd D. Griffith
SFC Joseph Baron
SFC James Newcomer

REFER TO FOR INFORMATION:

MAJ Todd D. Griffith
3226 Margate Road
Bethlehem, PA. 18017

PERSONNEL CONTACTED ON SITE:

NAME/GRADE	DUTY POSITION	PHONE NUMBER
Ms. Yvonne Deloatch	Facility Manager	215 848-9100

ASSESSMENT CONDUCTED FROM: 16SEP96 0800 (DATE/TIME) TO 18SEP96 1600 (DATE/TIME)

FACILITY DATA - PA076

Facility:	34,317
Administrative Space:	11,582
Assembly Space:	3,640
Total Education:	3,760
Storage:	6,543
Support:	2,585
Gross Center:	28,275
Gross Shop:	6,042
Gross Unheated Storage:	____

TABLE II
FACILITY DATA - PA076

ROOM NO. & NAME	ROOM DIMENSIONS			ROOM AREA	ROOM VOLUME	USE CODE
	LENGTH	WIDTH	HEIGHT			
Lobby (1st floor)	20	28	11	560	6160	IA6
Corridor (1st floor)	232	7	9	1,624	14616	IA3
Stair #1	16	8		128		IA3
101 Office	26	20	9	520	4680	IA1
102 Office	13	20	9	260	2340	IA1
103 Office	13	20	9	260	2340	IA2
104 Office	11	20	9	220	1980	IA2
105 Storage	26	20	9	520	4680	IF1
106 Supply Office	60	21	9	1,260	11340	IF3
108 Office	30	21	9	630	5670	IA2
109 Office	20	21	9	420	3780	IA2
110 Storage	50	21	9	1,050	9450	IF1
112 Storage	33	21	9	693	6237	IF1
113 Office	22	20	9	440	3960	IA2
114 Arms Vault	40	20	9	800	7200	ID1
115 Storage	11	15	9	165	1485	IF1
116 Office	12	15	9	180	1620	IA2
117 Storage	12	15	9	180	1620	IF2
118 Assembly Hall	70	52	21	3,640	76440	IB1
119 Kitchen	15	16	9	240	2160	IC
120 Female Latrine	15	15	9	225	2025	IH2
121 Mechanical Room	20	30	14	600	8400	IH7
122 Office	20	19	9	380	3420	IA2
123 Male Latrine	20	13	9	260	2340	IH1
124 Office	20	30	9	600	5400	IA2
125 Office	20	14	9	280	2520	IA2
126 Classroom	20	31	8	620	4960	IE1
127 Classroom	20	31	8	620	4960	IE1
128 Classroom	20	29	8	580	4640	IE1
129 Office	20	37	8	740	5920	IA4
Stairs #2	20	9		180		IA3
Hall (2nd floor)	20	18	9	360	3240	IA3

Corridor (2nd floor)	232	7	9	1,624	14616	IA3
201 Classroom	20	31	9	620	5580	IE1
202 Classroom	20	31	9	620	5580	IE1
203 Office	20	16	9	320	2880	IA2
204 Office	20	15	9	300	2700	IA2
205 Office	20	18	9	360	3240	IA2
206 Office	20	13	9	260	2340	IA2
207 Office	16	11	9	176	1584	IA2
208 NBC Room	20	22	9	440	3960	IF1
209 Office	20	38	9	760	6840	IA2
210 Male Latrine	20	23	9	460	4140	IH1
211/212 Classroom	20	35	9	700	6300	IE1
213 Storage	20	110	9	2,200	19800	IF1
215 Janitor Closet	5	8	9	40	360	IF4
216 Storage	20	8	9	160	1440	IF1
Maint.Garage	114	53	15	6,042	90630	IIA
CUM. TOTAL				34,317	175230	

TABLE IIA - Administrative Space
FACILITY DATA - PA076

ROOM NO. & NAME	ROOM DIMENSIONS			ROOM AREA	ROOM VOLUME
	LENGTH	WIDTH	HEIGHT		
Lobby (1st floor)	20	28	11	560	6160
Corridor (1st floor)	232	7	9	1,624	14616
Stair #1	16	8		128	
101 Office	26	20	9	520	4680
102 Office	13	20	9	260	2340
103 Office	13	20	9	260	2340
104 Office	11	20	9	220	1980
108 Office	30	21	9	630	5670
109 Office	20	21	9	420	3780
113 Office	22	20	9	440	3960
116 Office	12	15	9	180	1620
122 Office	20	19	9	380	3420
124 Office	20	30	9	600	5400
125 Office	20	14	9	280	2520
129 Office	20	37	8	740	5920
Stairs #2	20	9		180	
Hall (2nd floor)	20	18	9	360	3240
Corridor (2nd floor)	232	7	9	1,624	14616
203 Office	20	16	9	320	2880
204 Office	20	15	9	300	2700
205 Office	20	18	9	360	3240
206 Office	20	13	9	260	2340
207 Office	16	11	9	176	1584
209 Office	20	38	9	760	6840
CUM. TOTAL				11,582	

TABLE IIB - Assembly Space
FACILITY DATA - PA076

ROOM NO. & NAME	ROOM DIMENSIONS			ROOM AREA	ROOM VOLUME
	LENGTH	WIDTH	HEIGHT		
118 Assembly Hall	70	52	21	3,640	76440
CUM. TOTAL				3,640	

TABLE IIC - Total Education
FACILITY DATA - PA076

ROOM NO. & NAME	ROOM DIMENSIONS			ROOM AREA	ROOM VOLUME
	LENGTH	WIDTH	HEIGHT		
126 Classroom	20	31	8	620	4960
127 Classroom	20	31	8	620	4960
128 Classroom	20	29	8	580	4640
201 Classroom	20	31	9	620	5580
202 Classroom	20	31	9	620	5580
211/212 Classroom	20	35	9	700	6300
CUM. TOTAL				3760	

TABLE IID - Storage
FACILITY DATA - PA076

ROOM NO. & NAME	ROOM DIMENSIONS			ROOM AREA	ROOM VOLUME
	LENGTH	WIDTH	HEIGHT		
105 Storage	26	20	9	520	4680
106 Supply Office	60	21	9	1,260	11340
110 Storage	50	21	9	1,050	9450
112 Storage	33	21	9	693	6237
117 Storage	12	15	9	180	1620
208 NBC Room	20	22	9	440	3960
213 Storage	20	110	9	2,200	19800
215 Janitor Closet	5	8	9	40	360
216 Storage	20	8	9	160	1440
CUM. TOTAL				6,543	

TABLE IIE - Support
FACILITY DATA - PA076

ROOM NO. & NAME	ROOM DIMENSIONS			ROOM AREA	ROOM VOLUME
	LENGTH	WIDTH	HEIGHT		
120 Female Latrine	15	15	9	225	2025
121 Mechanical Room	20	30	14	600	8400
123 Male Latrine	20	13	9	260	2340
210 Male Latrine	20	23	9	460	4140
114 Arms Vault	40	20	9	800	7200
119 Kitchen	15	16	9	240	2160
CUM. TOTAL				2585	

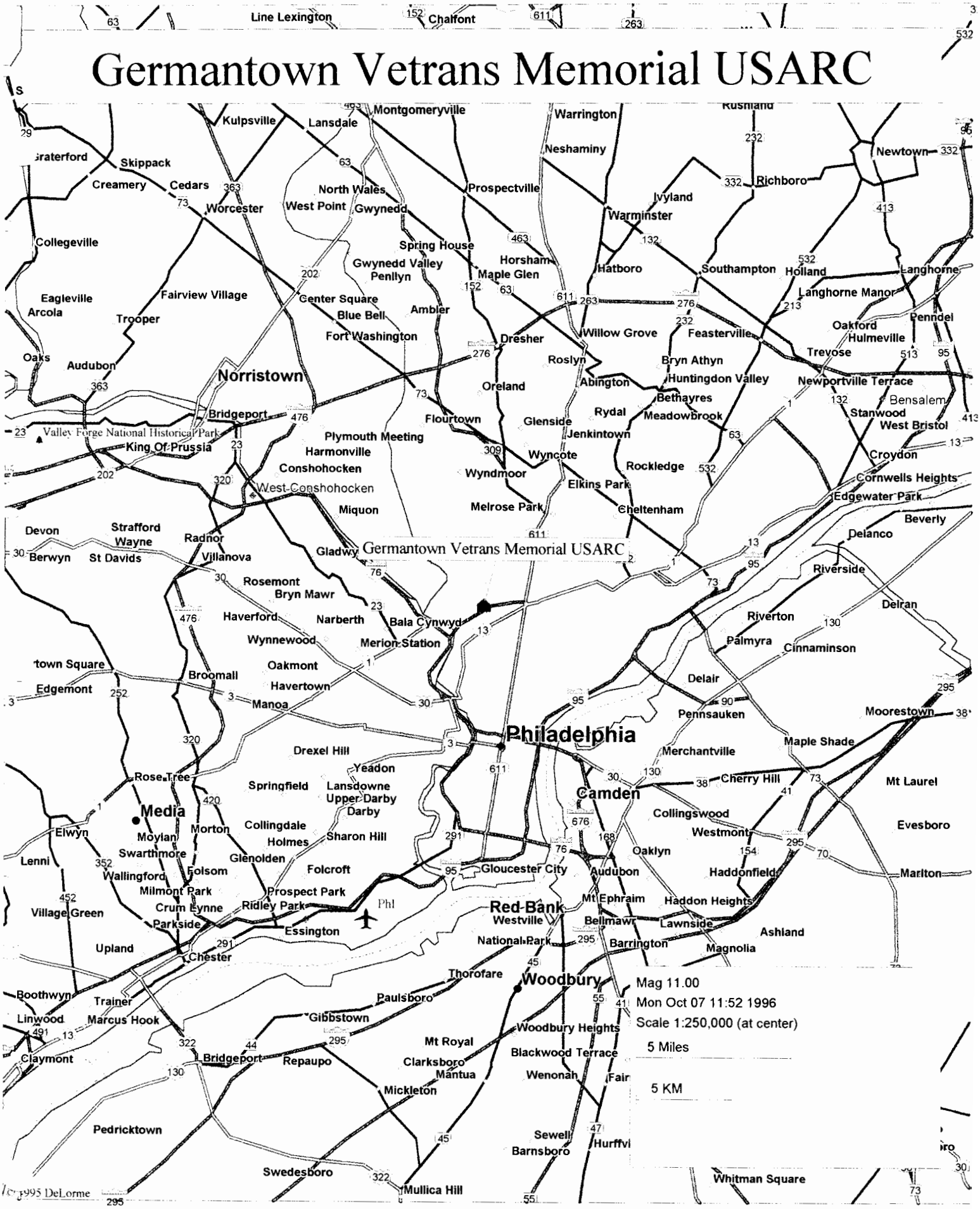
TABLE IIF - Total Shop
FACILITY DATA - PA076

ROOM NO. & NAME	ROOM DIMENSIONS			ROOM AREA	ROOM VOLUME
	LENGTH	WIDTH	HEIGHT		
Maint.Garage	114	53	15	6,042	90630
CUM. TOTAL				6,042	

SECTION 4
GRAPHICAL DATA

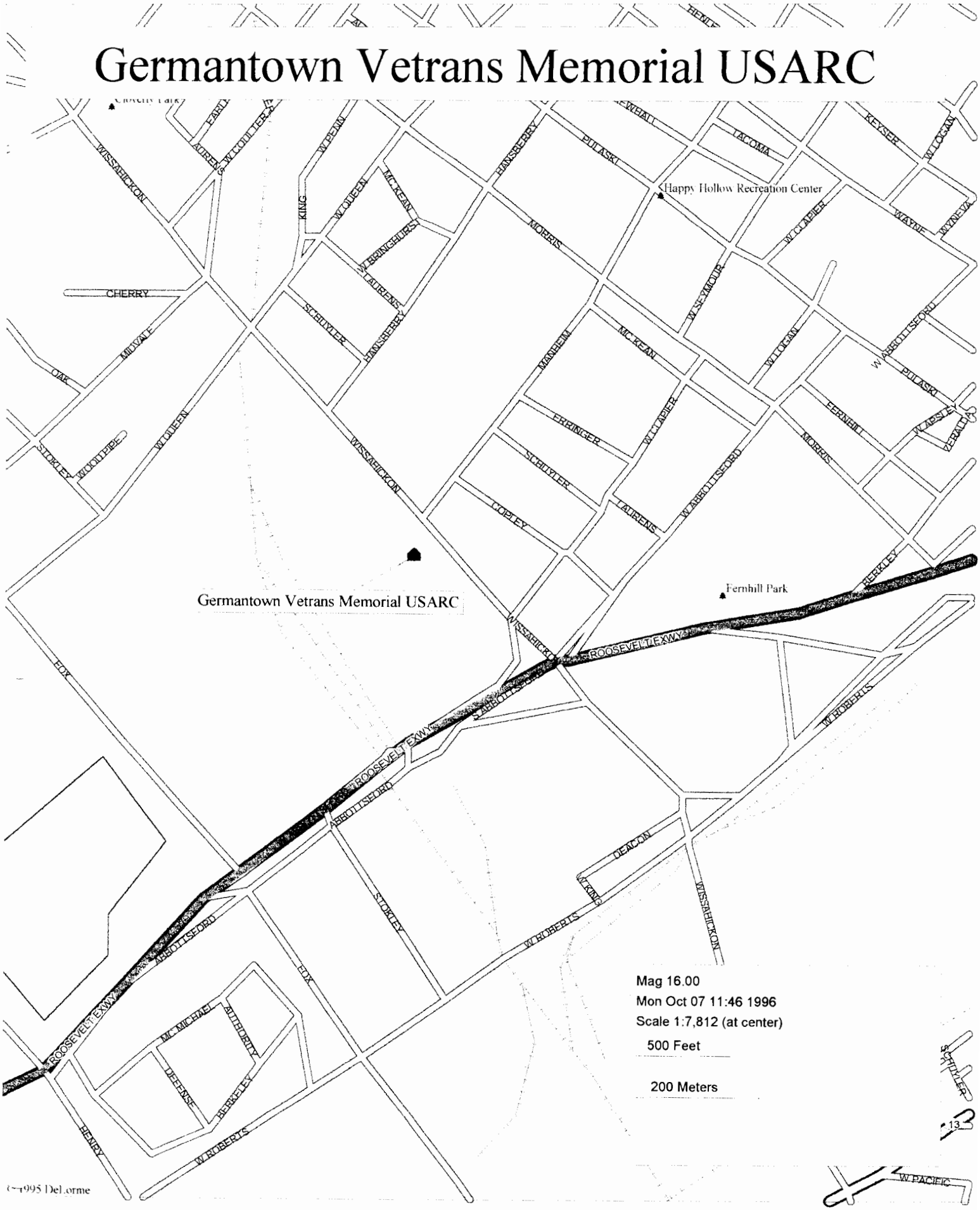
SECTION 4A
VICINITY MAP

Germantown Vetrans Memorial USARC

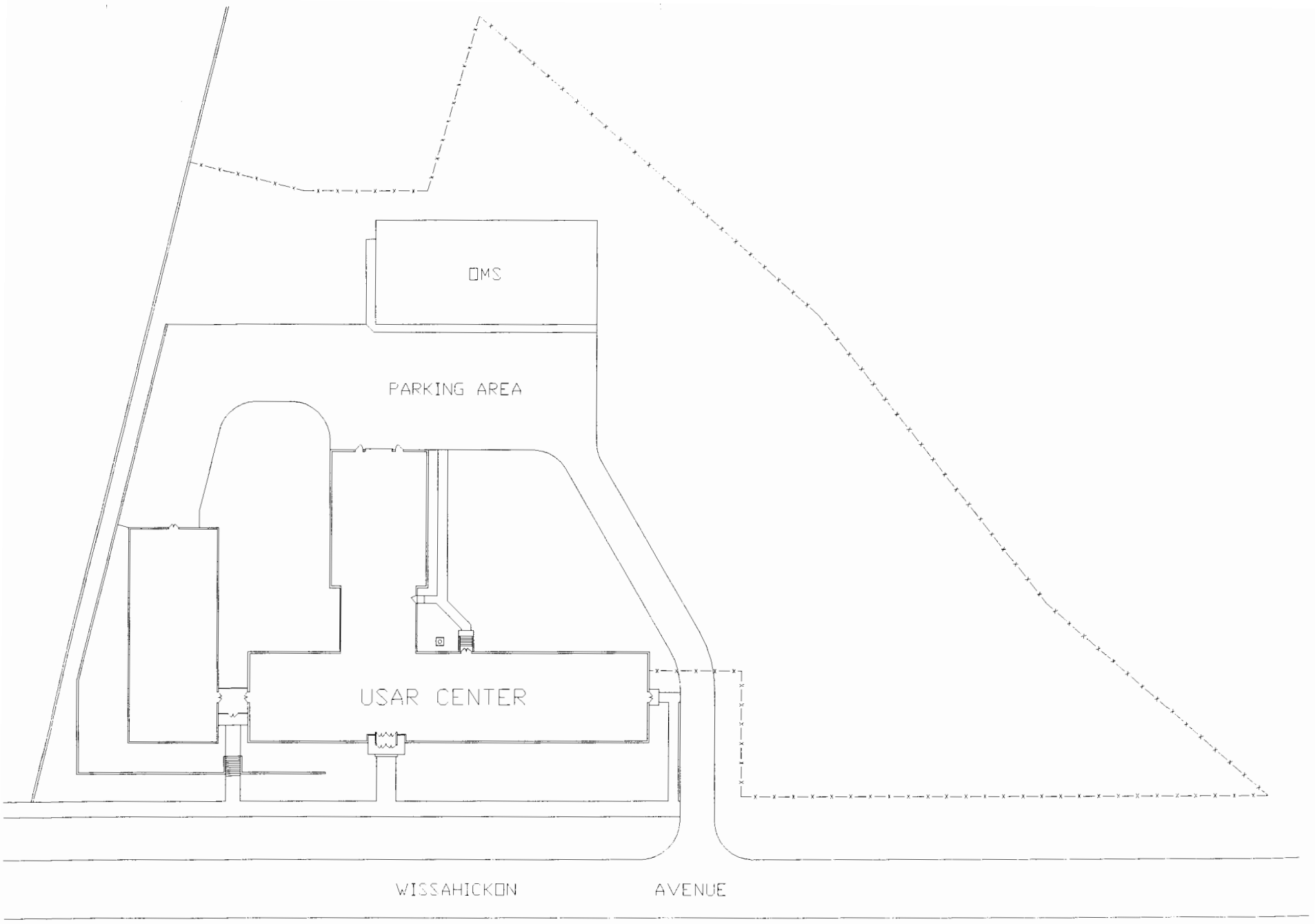


SECTION 4B
LOCATION MAP

Germantown Vetrans Memorial USARC



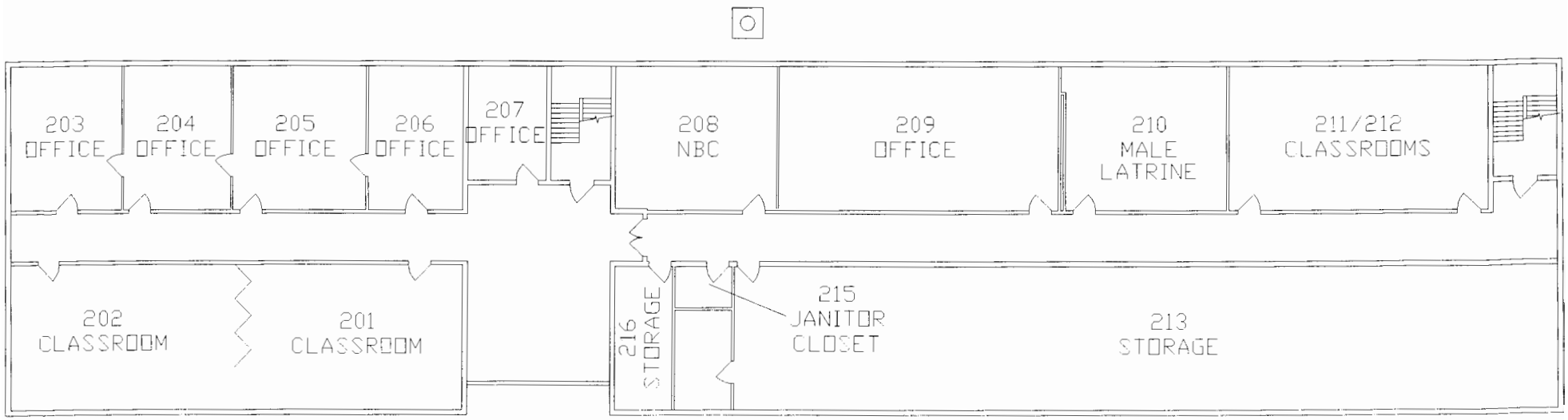
SECTION 4C
SITE MAP



GERMANTOWN USAR CENTER
SITE PLAN

SECTION 4D
FLOOR PLANS

GERMANTOWN USAR CENTER
FIRST FLOOR PLAN



GERMANTOWN USAR CENTER

SECOND FLOOR PLAN

SECTION 5
EXISTING CONDITIONS PHOTOGRAPHS

SECTION 5A
EXTERIOR PHOTOGRAPHS

Photo 1: Germantown USAR Center front view

Photo 2: assembly hall rear view

Photo 3: OMS soffit

Photo 4: vegetation around transformer

Photo 5: military equipment parking area

Photo 1: room 128 - drop ceiling and light falling

Photo 2: room 202 - corner of ceiling falling

Photo 3: floor tile - main hallway second floor

Photo 4: floor tile - main hallway first floor

ENCLOSURE 1
RPMA PROJECT DOCUMENTATION

ENCLOSURE 1 RPMA PROJECT DOCUMENTATION

NEWLY IDENTIFIED RPMA PROJECTS:

Inspect/Repair Overhead Doors
Replace Stair Treads
Remove Vegetation
Repair Security Fence

(see attached descriptions and estimates)

PROJECTS IDENTIFIED FOR LOCAL PURCHASE (Ordering Officer Authority, Self Help, or existing service contract)

1. Lights falling from ceiling in rooms 104, 106, and 108.
2. Floor tiles missing in rooms 102, 104, 205, and 212.
3. Vinyl cove base strips missing throughout the second floor.
4. Corner of ceiling falling down in room 205.
5. Faucets in first floor men's latrine are inoperable.

NEW RPMA PROJECTS

ENCLOSURE 1 RPMA PROJECT DOCUMENTATION

NEWLY IDENTIFIED RPMA PROJECTS:

Inspect/Repair Overhead Doors
Replace Stair Treads
Remove Vegetation
Repair Security Fence

(see attached descriptions and estimates)

PROJECTS IDENTIFIED FOR LOCAL PURCHASE (Ordering Officer Authority, Self Help, or existing service contract)

1. Lights falling from ceiling in rooms 104, 106, and 108.
2. Floor tiles missing in rooms 102, 104, 205, and 212.
3. Vinyl cove base strips missing throughout the second floor.
4. Corner of ceiling falling down in room 205.
5. Faucets in first floor men's latrine are inoperable.

RPMA PROJECT

INSTALLATION: Germantown Veterans Memorial USAR Center

PROJECT NUMBER:

PROJECT NAME: Remove vegetation

PROJECT DESCRIPTION: Remove vegetation from 500 feet of security fence and from the transformer area.

DESCRIPTION OF CURRENT CONDITIONS: 500 feet of security fence are completely covered by vegetation. The transformer enclosure is filled with excessive vegetation.

JUSTIFICATION: Vegetation on security fence represents a security risk. It also speeds the deterioration of the fence. Vegetation in the transformer enclosure inhibits transformer cooling and could become a fire hazard.

SKETCHES:	None
PHOTOS:	see Enclosure 2
FIELD NOTES:	None
COST ESTIMATE:	$990.00 (See Enclosure 1)

COST ESTIMATE

COST ESTIMATE NUMBER: **PA076-2** WORK ORDER NUMBER:

TYPE PROJECT: New Work ___ Repair _X_ Maintenance ___
EIP ___ Other *(specify)*

RECOMMENDED METHOD OF ACCOMPLISHMENT:
DESIGN: A/E Contract ___ 416th ENCOM
Not Required ___ Other _X_
CONSTRUCTION: Contract ___ Local Purchase _X_
Self Help/Troop ___ SDEH In-House ___ Other

SHORT JOB DESCRIPTION: **REMOVE VEGETATION**

DESCRIPTION OF WORK:
Remove vegetation from 500 feet of security fence and from the transformer area.

DETAILED COST ESTIMATE: (SHEET _1_ OF _1_)

ITEM	UM	QTY	UNIT COST	TOTAL COST
Remove vegetation	**MH**	**32**	**25.00**	**800**

Estimates are in PROJECT SUBTOTAL: **800**
_X_ Current Year Dollars
___FY___ Dollars OVERHEAD & PROFIT (**25%**) **100**
PROJECT TOTAL: **900**
CONTINGENCY (10%) **90**

TOTAL REQUEST: **$990**

Prepared By: **MAJ Todd D. Griffith**
Checked By: **MAJ(P) James L. Hugar**
Date Prepared: **18 September 1996**

Enclosure #1 to RPMA Project #VL-00021-6

RPMA PROJECT

INSTALLATION: Germantown Veterans Memorial USAR Center

PROJECT NUMBER:

PROJECT NAME: INSPECT/REPAIR OVERHEAD DOORS

PROJECT DESCRIPTION: Repair three overhead doors in OMS, inspect the other two doors and complete preventive maintenance as required.

DESCRIPTION OF CURRENT CONDITIONS: Three electric overhead doors are inoperable. The other two have never been inspected.

JUSTIFICATION: Three inoperative doors limit the efficient use of maintenance space. If the other two doors fail the maintenance areas will be inaccessable.

SKETCHES:	None	
PHOTOS:	None	
FIELD NOTES:	None	
COST ESTIMATE:	$2,695.00	(See Enclosure 1)

COST ESTIMATE

COST ESTIMATE NUMBER: **PA076-1** WORK ORDER NUMBER:

TYPE PROJECT: New Work ___ Repair _X_ Maintenance ___
EIP ___ Other *(specify)*

RECOMMENDED METHOD OF ACCOMPLISHMENT:
DESIGN: A/E Contract ___ 416th ENCOM
Not Required ___ Other _X_
CONSTRUCTION: Contract ___ Local Purchase _X_
Self Help/Troop ___ SDEH In-House ___ Other

SHORT JOB DESCRIPTION: **INSPECT/REPAIR OVERHEAD DOORS**

DESCRIPTION OF WORK:
Inspect and repair three overhead bay doors in OMS. Inspect the other two doors as preventive maintenance.

DETAILED COST ESTIMATE: (SHEET _1_ OF _1_)

ITEM	UM	QTY	UNIT COST	TOTAL COST
Overhead door mechanic & Helper	**MH**	**32**	**30.00**	**960**
Materials	**LS**	**5**	**200.00**	**1000**
———				

Estimates are in PROJECT SUBTOTAL: **1960**
_X_ Current Year Dollars
___FY_ Dollars OVERHEAD & PROFIT (**25%**) **490**
PROJECT TOTAL: **2450**
CONTINGENCY (10%) **245**

TOTAL REQUEST: **$2,695**

Prepared By: **MAJ Todd D. Griffith**
Checked By: **MAJ(P) James L. Hugar**
Date Prepared: **18 September 1996**

Enclosure #1 to RPMA Project #VL-00021-6

RPMA PROJECT

INSTALLATION: Germantown Veterans Memorial USAR Center

PROJECT NUMBER:

PROJECT NAME: REPAIR SECURITY FENCE

PROJECT DESCRIPTION: Repair 10 feet of the security fence at the south east corner of the property and 10 feet at the south west corner of the main building.

DESCRIPTION OF CURRENT CONDITIONS: There is a gap in the security fence at the southeast corner of the property and at the southwest corner of the main building.

JUSTIFICATION: Intruders could enter the MEP if both these areas are not repaired.

SKETCHES:	None
PHOTOS:	See Enclosure 2
FIELD NOTES:	None
COST ESTIMATE:	$428.00 (See Enclosure 1)

COST ESTIMATE

COST ESTIMATE NUMBER: **PA076-3** WORK ORDER NUMBER:

TYPE PROJECT: New Work ___ Repair _X_ Maintenance ___
EIP ___ Other *(specify)*

RECOMMENDED METHOD OF ACCOMPLISHMENT:
DESIGN: A/E Contract ___ 416th ENCOM
Not Required ___ Other _X_
CONSTRUCTION: Contract ___ Local Purchase _X_
Self Help/Troop ___ SDEH In-House ___ Other

SHORT JOB DESCRIPTION: **REPAIR SECURITY FENCE**

DESCRIPTION OF WORK:
Repair 10 feet of the security fence at the south east corner of the property and 10 feet at the south west corner of the main building.

DETAILED COST ESTIMATE: (SHEET _1_ OF _1_)

ITEM	UM	QTY	UNIT COST	TOTAL COST
Repair security fence	**LF**	**20**	**15.56**	**311**
———				

Estimates are in PROJECT SUBTOTAL: **311**
_X_ Current Year Dollars
___FY_ Dollars OVERHEAD & PROFIT (25%) **78**
PROJECT TOTAL: **389**
CONTINGENCY (10%) **39**

TOTAL REQUEST: **$428**

Prepared By: **MAJ Todd D. Griffith**
Checked By: **MAJ(P) James L. Hugar**
Date Prepared: **18 September 1996**
Enclosure #1 to RPMA Project #VL-00021-6

RPMA PROJECT

INSTALLATION: Germantown Veterans Memorial USAR Center

PROJECT NUMBER:

PROJECT NAME: REPLACE STAIR TREADS

PROJECT DESCRIPTION: Replace vinyl stair treads in both stairwells.

DESCRIPTION OF CURRENT CONDITIONS: 50% of existing treads show excessive wear. Several are coming apart and exposing the stairs.

JUSTIFICATION: Deteriorating treads are a tripping hazard. Further deterioration could lead to damaged stairs.

SKETCHES:	None
PHOTOS:	See Enclosure 2
FIELD NOTES:	None
COST ESTIMATE:	$1,826.00 (See Enclosure 1)

COST ESTIMATE

COST ESTIMATE NUMBER: **PA076-4** WORK ORDER NUMBER:

TYPE PROJECT: New Work ___ Repair _X_ Maintenance ___
EIP ___ Other *(specify)*

RECOMMENDED METHOD OF ACCOMPLISHMENT:
DESIGN: A/E Contract ___ 416th ENCOM
Not Required ___ Other _X_
CONSTRUCTION: Contract ___ Local Purchase _X_
Self Help/Troop ___ SDEH In-House ___ Other

SHORT JOB DESCRIPTION: **REPLACE STAIR TREADS**

DESCRIPTION OF WORK:
Replace vinyl stair treads in both stairwells.

DETAILED COST ESTIMATE: (SHEET _1_ OF _1_)

ITEM	UM	QTY	UNIT COST	TOTAL COST
Repair vinyl stair treads	LF	96	**13.72**	**1,317**

Estimates are in PROJECT SUBTOTAL: **1,317**
_X_ Current Year Dollars
___FY___ Dollars OVERHEAD & PROFIT (**25%**) **343**
PROJECT TOTAL: **1660**
CONTINGENCY (10%) **166**

TOTAL REQUEST: **$1,826**

Prepared By: **MAJ Todd D. Griffith**
Checked By: **MAJ(P) James L. Hugar**
Date Prepared: **18 September 1996**
Enclosure #1 to RPMA Project #VL-00021-6

Photo 1: stair treads

Photo 2: security fence overgrown with vegetation

Photo 3: opening in security fence

Photo 4: opening in security fence

ENCLOSURE 2
ENERGY AUDIT

GERMANTOWN USAR CENTER
PA076

USAR FACILITY
ENERGY AUDIT REPORT

for the

GERMANTOWN VETERANS MEMORIAL USAR CENTER

PHILADELPHIA, PA

Prepared by the

416TH ENCOM FE TDA

FT. MEADE ESG

FORT INDIANTOWN GAP FET

Performed on

AUG.1,1996

GERMANTOWN USAR CENTER
PA076

Section 1- Facility Data Sheet
USAR Facility Energy Audit Report
Supporting RSC

FACILITY NAME: **GERMANTOWN VETERANS MEMORIAL**

LOCATION: **5200 WISSAHICKON AVE., PHILADELPHIA, PA.**

FACILITY ID NUMBER: **PA076**

FACILITY TYPE: USARC **X** ; OMS **X** ; AMSA ; ECS ;
Specify Other

TELEPHONE NUMBER OF FACILITY MANAGER: WORK (215) 848-9101/9107

AUDIT TEAM DESIGNATION: **FORT INDIANTOWN GAP FACILITY EVALUATION TEAM**
Address: Bldg 11-29, Fort Indiantown Gap
Annville, Pa. 17003-5029

Team Leader: LTC JAMES L. HUGAR
Team Members: MAJ TODD GRIFFITH, SFC JOE BARAN

FACILITY PERSONNEL INTERVIEWED: **LINDA CONNOR, UAT**

AUDIT DATE: **AUGUST 1,1996**

DATE OF LAST AUDIT: **None**

BUILDING AREA:

	SQ. FT.
USAR CENTER	28,275
OMS	6,042
FACILITY TOTAL	**34,317**

GERMANTOWN USAR CENTER
PA076

USAR FACILITY ENERGY AUDIT REPORT

TABLE OF CONTENTS

Section 1 - Facility Data Sheet

GERMANTOWN USAR CENTER
PA076

Section 2 - Executive Summary
USAR Facility Energy Audit Report
INSTALLATION NAME: Germantown Veterans Memorial USAR Center
INSTALLATION NO. PA 076
INSTALLATION LOCATION: 5200 Wissahickon Ave. Phila PA.
DATE ASSESSMENT CONDUCTED: Aug.1,1996

1. An Energy Audit was performed on the Germantown Veterans Memorial USAR Center with the results identified in the following pages. The center consists of two buildings: The main USAR Center and the Organization Maintenance Shops (OMS). The buildings are presently utilized. The entire complex is fenced and the POV parking area is presently being shared with the VA and GSA while the new VA and GSA parking lot construction is being completed.
The surrounding area is within the city limits with a mixture of colleges and parks nearby. The facility is occupied by the 223rd QMCO.

2. Some of the critical problems identified at the facility can be corrected relatively inexpensively. The lenses can be replaced for more efficient lighting. The lenses can be removed and cleaned economically. Long term planning should include retrofit of the lighting to energy efficient ballast and new T8 bulbs with the phasing out of the T12 bulbs.

3. Projects recommended in this report can be used to obtain ECIP, FEMP or other available Energy Conservation funding. Section 4 of this report identifies several potential Energy Conservation opportunities, as presented in the A&E Guide to Energy Conservation in existing buildings.

4. The facility is striving to create an active Energy and Conservation awareness program. Ms Linda Connor and Ms Yvonne Deloath are striving for an energy efficient building. The vast building is a challenge to conserve energy. All areas not in use can be watched for energy conservation opportunities.

GERMANTOWN USAR CENTER
PA076

Section 3 - FACILITY CHECKLIST SUMMARY
USAR Facility Energy Audit Report

I. - BUILDING CONSTRUCTION PRACTICES

Checklist Area	Number of Checklist Items Showing Good Conservation Practices in Effect		
	#YES	#NO	#N/A
A. - Building Envelope	7	2	0
B. - Plumbing	3	4	3
C. - Electrical	6	2	0
D. - HVAC	10	0	2
E. - **Total Responses**	**26**	**8**	**5**

II . - OPERATION AND MAINTENANCE PRACTICES

Checklist Area	Number of Checklist Items Showing Good Conservation Practices in Effect		
	#YES	#NO	#N/A
A. - Building Envelope	7	0	0
B. - Plumbing	3	1	4
C. - Electrical	5	1	0
D. - HVAC	17	0	2
E. - **Total Responses**	**32**	**2**	**6**

GERMANTOWN USAR CENTER

PA076

Section 4 - POTENTIAL ENERGY CONSERVATION OPPORTUNITIES

ECO Discription:

1. Reduce operating hours for lighting systems
2. Clean and maintain lighting system
3. Reduce time of operational lighting Eg. outside lights and unoccupied areas.
4. Install new lighting fixtures in the center
5. Reduce peak power demand Eg. by control of photo cell lights before 8:00 PM the beginning of off peak billing period.

GERMANTOWN USAR CENTER
PA076

Appendix A FACILITY ENERGY AUDIT CHECKLIST
Appendix A.1 - BUILDING CONSTRUCTION CHECKLIST
Appendix A.1.1 - BUILDING ENVELOPE
USAR Facility Energy Audit Report

INSTALLATION NAME:Germantown Veterans Memorial
INSTALLATION NUMBER:PA076
INSTALLATION LOCATION:5200 Wissahicon Ave. Phila.PA.
DATE AUDIT CONDUCTED:Aug.1,1996

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
1. Heavily used entrances have vestibule (airlock) door system.	x				
2. Wind screens installed to protect doors from prevailing winds.	x				
3. Space around outside wall penetrations well sealed to reduce infiltration.	x				
4. Building has required insulation and it is in good condition.	x				
5. Energy efficient windows (multi-pane or storm) provided.		x			
6. Energy efficient doors (i.e. insulated) provided.	x				
7. Infiltration of unconditioned air minimized.	x				
8. Automatic closures and weather-stripping installed on doors between conditioned and		x			

unconditioned spaces.					
9. Is winter sun used to heat rooms?	x				
TOTALS	7	2	0	0	

GERMANTOWN USAR CENTER
PA076

Appendix A.1.2 - BUILDING CONSTRUCTION CHECKLIST/PLUMBING
USAR Facility Energy Audit Report

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
1. Domestic hot water heater and storage system separate from boiler?	x				
2. Hot water piping and storage tanks properly insulated?	x				
3. Booster heaters used on kitchen equipment?		x			
4. Self-closing taps used on kitchen equipment & latrine?	x				
5. Electronic pilots used in lieu of standing gas pilots for water heaters?		x			
6. Hot water circulating pumps controlled by time switch?		x			
7. Are flow restrictors used on showers heads?		x			
8. Are steam traps used in heating system?			x		
9. Does steam trap discharge line return to boiler reservoir?			x		
10. Does steam trap overboard valve/float allow return to boiler reservoir?			x		
TOTALS	3	4	3	0	

GERMANTOWN USAR CENTER
PA076

Appendix A.1.3 - BUILDING CONSTRUCTION CHECKLIST/ELECTRICAL
USAR Facility Energy Audit Report

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
1. Energy efficient security lighting (fluorescent, HID) installed?	x				
2. Exterior lighting controlled by time switch or photocell?	x				
3. Walls and ceilings painted with light colored, reflective paint?	x				
4. Incandescent fixtures used only where appropriate?	x				
5. Are motion sensors used in low occupancy areas?		x			
6. Are electronic ballasts w/T8 fluorescent bulbs used?		x			
7. Are compact fluorescent bulbs used in exit lamps?	x				
8. Are electrical outlets sealed to prevent air leakage?	x				
TOTALS	6	2	0	0	

Note: Lighting through Center is in poor or failed condition

GERMANTOWN USAR CENTER
PA076

Appendix A.1.4 - BUILDING CONSTRUCTION CHECKLIST/HVAC
USAR Facility Energy Audit Report

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
1. Automatic setback controls or Energy Monitoring Control Systems provided for heating and cooling systems?	x				
2. Outer surfaces of boilers insulated to reduce heat loss?	x				
3. Boiler combustion air taken from top of boiler room to provide warmer air for increased efficiency?	x				
4. Thermostats are positioned away from outside walls, out of drafts, and in areas of frequent use?	x				
5. Individual controls provided to maintain lower temperatures in unoccupied areas?	x				
6. Automatic louvers/dampers provided on outside air openings?	x				
7. All heating/cooling piping and equipment (pipes, valves,boilers, etc.) insulated and in good condition?	x				
8. Are radiators/heat registers shut off completely in vestibules, corridors, stairways and	x				

lobbies?					
9. Are drapes, shades or blinds drawn on windows where practical during cooling periods?	x				

GERMANTOWN USAR CENTER
PA076

Appendix A.1.4 - BUILDING CONSTRUCTION CHECKLIST/HVAC (con't)
USAR Facility Energy Audit Report

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
10. All heating equipment (heat exchanger, economizers, condensate tanks) insulated and in good condition?	x				
11. Ducts passing through unconditioned spaces are insulated?		x			
12. High efficiency (EER at least 85) window air conditioners only?		x			
TOTALS	10	0	2	0	

GERMANTOWN USAR CENTER
PA076

Appendix A.2.1 - OPERATIONS AND MAINTENANCE CHECKLIST/BUILDING ENVELOPE
USAR Facility Energy Audit Report

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
1. Building insulation in good condition? (No wet, crumbly, cracked, broken or missing sections)	x				
2. Windows and doors free from broken or cracked glass?	x				window contract for DB windows 9/96 also vestibule.
3. Are storm windows installed?	x				future.
4. Drapes, shades, and blinds installed and utilized?	x				blinds only.
5. Are windows and other areas sealed properly?	x				future.
6. Doors fit securely in frames and have weather stripping?	x				
7. Are windows and skylights clean?	x				
TOTALS	7	0	0	0	

GERMANTOWN USAR CENTER
PA076

Appendix A.2.2 - OPERATIONS AND MAINTENANCE CHECKLIST/PLUMBING
USAR Facility Energy Audit Report

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
1. Are hot water temperatures set for 100° F max at destination?	x				
2. Faucets close properly?	x				
3. Hot water to areas shutdown during periods of non-occupancy?		x			
4. Water heating and distribution systems appear to be free from leaks?	x				
5. Is steam trap output returning to boiler reservoir?			x		
6. During boiler operation, does steam trap overboard system operate minimally?			x		
7. Is the steam trap on a regular maintenance schedule?			x		
8. Has the steam trap been replaced within the previous 3 to 5 years?			x		
TOTALS	3	1	4	0	

GERMANTOWN USAR CENTER
PA076

Appendix A.2.3 - OPERATIONS AND MAINTENANCE CHECKLIST/ELECTRICAL
USAR Facility Energy Audit Report

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
1. Exterior lights turned off during daylight hours?	x				
2. Is there an energy conservation program?	x				
3. Are interior lights turned off in unoccupied areas?	x				
4. Partitions, lockers, etc. located so as to not unnecessarily block lighting?	x				
5. Are major appliances turned off during non drill periods?	x				
6. Have lights been removed from vending machines?		x			
TOTALS	5	1	0	0	

GERMANTOWN USAR CENTER
PA076

Appendix A.2.4 - OPERATIONS AND MAINTENANCE CHECKLIST/HVAC
USAR Facility Energy Audit Report

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
1. All coils, boiler tubes and heat transfer surfaces clean to maintain maximum heat transfer?	X				
2. System free from steam or water leaks?	X				
3. Meter and gauges operational?	X				
4. Are steam traps in place and maintained properly? (Bled periodically and repaired)		X			
5. Are radiators in vestibules, corridors, stairwell, and lobbies shut off?	X				
6. Thermostat setting adjusted during periods of non-occupancy? (50-55 DEG F for heating and 80-85 DEG F for cooling)	X				EXCEPT COOLING 75 DEGR
7. Thermostat settings set at 55 DEG F for areas of physical work? (Maintenance shops)	X				
8. Are heating vents and ducts unobstructed?	X				
9. Are cooling systems shut down during periods of non-occupancy?	X				

GERMANTOWN USAR CENTER
PA076

Appendix A.2.4 - OPERATIONS AND MAINTENANCE CHECKLIST/HVAC (con't)
USAR Facility Energy Audit Report

AREA OF EVALUATION	YES	NO	N/A	N/OBS	REMARKS
10. Cooling limited to occupied areas only?	X				
11. Doors between conditioned and unconditioned areas are closed?	X				
12. Central units and cooling towers are clean and free from scale?	X				
13. Is evidence of preventative maintenance (PM) schedule in effect?	X				
14. Is outside air used for cooling?	X				
15. Room temperatures maintained properly during cooling season? (76-80 F)	X				
16. Refrigerant and water lines free of leaks?	X				
17. Are internal heat generating units minimized? (copiers, refrigerators, etc)	X				
18. Air conditioning vents or outside air intakes are clear from obstructions?	X				
19. Are window air conditioners covered during heating season?			X		BUILDING HAS FAN COIL
TOTALS	17	0	2	0	

GERMANTOWN USAR CENTER
PA076

Appendix B - Count and Type of Lights
USAR Facility Energy Audit Report

USAR CENTER/AMSA: Germantown USAR Center
LOCATION: Center - 1st Floor

DATE: NOV 96
PREPARED BY: LTC Hugar

ROOM NO	FIXTURE TYPE	BALLAST TYPE	NUMBER FIXTURE	LAMPS/ FIXTURE	WATTS/LAMP	TOTAL # OF LAMPS	LAMP LENGTH	ROOM USE
101	2T - SM	EM	6	2	35	12	4	OFFICE
102	4T - SM		4	4		16		"
103	4T - LI		2	4		8		"
104	2T - SM		3	2		6		"
-	4T - SM		2	4		8		
105	1T - SM		3	1		3		STORAGE
-	4T - SM		3	4		12		
106	2T - SM		12	2		24		SUPPLY OFFICE
107	2T - SM		12	2		24		OFFICE
108	2T - SM		12	2		24		"
109	4T - SM		4	4		16		"
HALL	2T - SM	EM	5	2	35	10	4	HALL
	EXIT INCEND	NA	2	2	100	4	NA	EXIT
110	2T - SM	EM	6	1	35	6	4	STORAGE
111	SEE 112							
112	1T - SM		4	1		4		STORAGE
	4T - SM		2	4		8		& OFFICE
113	4T - SM		2	4		8		OFFICE
LOBBY	2T - SM	EM	1	2	35	2	4	LOBBY
	EXIT INCEND	NA	2	2	100	4	NA	EXIT
114	1T - SM	EM	4	1	35	4	4	ARMS VAULT
	2T - SM		2	2		4		
	1T - SM		6	1		6		
	4T - SM		1	4		4		
HALL	1T - SM		2	1		2		HALL
	1T - SM		1	1		1		
115	4T - SM		2	4		8		STORAGE
116	2T - SM	EM	2	2	35	4	4	MAIL OFFICE

GERMANTOWN USAR CENTER
PA076

Appendix B - Count and Type of Lights
USAR Facility Energy Audit Report

USAR CENTER/AMSA: Germantown USAR Center
LOCATION: Center - 1st Floor

DATE: NOV 96
PREPARED BY: LTC Hugar

ROOM NO	FIXTURE TYPE	BALLAST TYPE	NUMBER FIXTURE	LAMPS/ FIXTURE	WATTS/LAMP	TOTAL # OF LAMPS	LAMP LENGTH	ROOM USE
117	4T - SM	EM	1	4	35	4	4	STORAGE
118	HPS	NA	6	1	250	6	NA	ASSEMBLY HALL
	EXIT INCEND.	NA	4	4	20	16	NA	EXIT
119	4T - SM	EM	4	4	35	16	4	KITCHEN
120	1T - SM		4	1		4		FEMALE LATRINE
	2T - SM	EM	1	2	35	2	4	
HALL	EXIT INCEND.	NA	1	2	20	2	NA	EXIT
118-120	2T - SM	EM	2	2	35	4	4	ASSEMBLY HALL
HALL	4T - SM	EM	1	4	35	4	4	HALL
	EXIT INCEND.	NA	1	2	20	2	NA	
LOBBY	2T - SM	EM	2	2	35	4	4	LOBBY
	4T - SM		1	4		4		SEC
121	2T - SM		4	2		8		MECH. ROOM
122	2T - SM		3	2		6		OFFICE
	4T - SM		1	4		4		
123	2T - SM		3	4		12		MALE LATRINE
124	2T - SM		8	2		16		OFFICE
125	1T - SM		3	3		9		OFFICE
126	2T - SM		12	2		24		CLASSROOM
127-128	4T - SM		12	4		48		CLASSROOM
129	4T - LI		8	4		32		OFFICE
HALL	2T - SM		3	2		6		HALL
HALL	2T - SM	EM	2	2	35	4	4	SEC
	EXIT INCEND.	NA	2	2	20	4	NA	EXIT
STAIR	2T - SM	EM	2	2	35	4	4	SEC
LOBBY	2T - SM		3	2		6		LOBBY
	2T- SM	EM	1	2	35	2	4	SEC
EXIT	EXIT INCEND.	NA	2	2	100	4	EM	EXIT

GERMANTOWN USAR CENTER

PA076

Appendix B - Count and Type of Lights

USAR Facility Energy Audit Report

USAR CENTER/AMSA: Germantown USAR Center
LOCATION: Center - 2nd Floor

DATE: NOV 96
PREPARED BY: LTC Hugar

ROOM NO	FIXTURE TYPE	BALLAST TYPE	NUMBER FIXTURE	LAMPS/ FIXTURE	WATTS/LAMP	TOTAL # OF LAMPS	LAMP LENGTH	ROOM USE
HALL	2T - SW	EM	2	2	35	4	4	HALL
	2T - SM		1	2		2		
201	2T - SM		12	2		24		CLASSROOM
202	2T - SM		12	2		24		CLASSROOM
203	2T - SM		4	2		8		OFFICE
204	2T - SM		4	2		8		"
205	2T - SM		6	2		12		"
206	2T - SM		4	2		8		"
207	4T - SM		1	4		4		"
208	2T - SM		6	2		12		NBC ROOM
209	4T - SM		6	4		24		OFFICE
209A	2T - SM		6	2		12		STORAGE
210	2T - SM		2	2		4		MALE LATRINE
	2T - SM		2	2		2		
	1T - SM	EM	2	1	35	2	4	TASK
	EXIT INCEND.	NA	2	1	100	2	NA	SHOWER
211	1T - SM	EM	6	1	35	6	4	CLASSROOM
212	1T - SM		4	1		4		CLASSROOM
213	1T - SM		4	1		4		STORAGE
	1T - SM		5	1		5		
	1T - SM		5	1		5		
	4T - SM		2	4		8		
214	2T - SM		2	2		4		
215	1T - SM		1	1		1		JANITOR
216	1T - SM		1	1		1		STORAGE
	2T - SM		1	2		2		
HALL	2T- SM	EM	5	2	35	10	4	HALL
	EXIT INCEND.	NA	1	2	100	2	NA	EXIT

GERMANTOWN USAR CENTER

PA076

Appendix B - Count and Type of Lights

USAR Facility Energy Audit Report

USAR CENTER/AMSA: Germantown USAR Center
LOCATION: Center - 2nd Floor, OMS & Exterior

DATE: NOV 96
PREPARED BY: LTC Hagar

ROOM NO	FIXTURE TYPE	BALLAST TYPE	NUMBER FIXTURE	LAMPS/ FIXTURE	WATTS/LAMP	TOTAL # OF LAMPS	LAMP LENGTH	ROOM USE
STAIR	2T - SM	EM	2	2	35	4	4	STAIRWELL
OMS	4T - SM	EM	18	4		72	4	BAYS
	2T - SM		5	2		10		
	1T - SM	EM	1	1	35	1	4	
	EXIT INCEND.	NA	3	1	100	3	NA	
EXT.OMS	EXIT INCEND.		3	1	100	3		SEC
	HPS		3	1	250	3		SEC
	HPS		3	1	150	3		SEC
	EXIT INCEND.		1	1	500	1		SEC
CTR	HPS		3	1	150	3		SEC
	HPS	NA	1	1	75	1	NA	SEC

GERMANTOWN USAR CENTER

PA076

Appendix C- Count and Type of Motors

USAR Facility Energy Audit Report

CIRCULATION PUMP MOTOR

MOTOR QTY	TAG	MOTOR (HP)	KW INPUT	USE
1	CP1	5		1750 RPM CIRC PUMP
1	CP2	1		1750 RPM CIRC PUMP
1	CH-1			3/4 STAGE COMP. CHILLER

UNIT HEATER SCHEDULE

ITEM	AREA	FUEL	BTU INPUT	TYPE	VOLTAGE
UH1	ASSEMBLY HALL	NAT. GAS	120,000	VENTED RADIANT	120V 1-PH
UH2	OMS BAY	NAT. GAS	180,000	VENTED RADIANT	120V 1-PH

GERMANTOWN USAR CENTER
PA076

BOILER SCHEDULE

TAG	BURNER	MBH	STACK	FUEL	ELECTRICAL
B1&B2	GAS	650	10"	GAS	240-3-60

MAKEUP AIR UNIT SCHEDULE

TAG	CFM	GAS INPUT MBH	GAS OUTPUT MBH	CFM	ESP WC	FAN HP	MOTOR RPM	ELECTRICAL
MUA1	1000	100,000	75000	1000	0.25	1/2		120V-1PH
MUA2	3600	350,000	250,000	3600	0.35	1-1/2		208V-3PH

Appendix D - Count and Type of Steam Traps
USAR Facility Energy Audit Report **NO STEAM TRAPS**

GERMANTOWN USAR CENTER
PA076

BOILER SCHEDULE

TAG	BURNER	MBH	STACK	FUEL	ELECTRICAL
B1&B2	GAS	650	10"	GAS	240-3-60

MAKEUP AIR UNIT SCHEDULE

TAG	CFM	GAS INPUT MBH	GAS OUTPUT MBH	CFM	ESP WC	FAN HP	MOTOR RPM	ELECTRICAL
MUA1	1000	100,000	75000	1000	0.25	1/2		120V-1PH
MUA2	3600	350,000	250,000	3600	0.35	1-1/2		208V-3PH

Appendix D - Count and Type of Steam Traps
USAR Facility Energy Audit Report **NO STEAM TRAPS**

ENCLOSURE 3
SAFETY CHECKLIST ASSESSMENT

DEPARTMENT OF THE ARMY
416TH ENGINEER COMMAND
Engineer Support Group - East

USAR FACILITIES SAFETY CHECKLIST

GENERAL

SPECIFIC INSPECTION CHECKLISTS

APPLICABLE?	YES	NO
SAFETY PROGRAM ADMINISTRATION	x	
BATTERY SHOP		x
BRAKE AND CLUTCH REPAIR/TIRE SERVICING MULTI-PIECE WHEELS/ASBESTOS		x
CHEMICAL STORAGE		x
COMPRESSED GAS CYLINDERS		x
CONFINED SPACE		x
ELECTRICAL/MECHANICAL	x	
FIRE SAFETY/EGRESS	x	
FLAMMABLE/COMBUSTIBLE LIQUID STORAGE	x	
HOUSEKEEPING	x	
LADDERS	x	
MOTORPOOL AND MILITARY VEHICLE SAFETY	x	
WELDING OPERATIONS		x

Checklists marked YES are applicable to this facility and are included in the report. Checklists marked NO are not applicable and were not reviewed.

USAR FACILITIES SAFETY CHECKLIST

GENERAL

PURPOSE: This document is a multi-part safety checklist for evaluation of U.S. Army Reserve (USAR) facilities. It is structured as a series of independent checklists which may be used to conduct a screening evaluation of the safety status for USAR facilities. Checklists are structured to allow use and evaluation by qualified 416th Engineer Command, Facility Engineer TDA Team personnel, with minimal additional safety training.

CHECKLIST SUMMARY DESCRIPTION: Checklists are alphabetically listed by major subject area. A brief description of the material covered by each checklist is provided below. The evaluator should initially screen the checklists to eliminate those that obviously do not apply to the specific USAR facility being evaluated. Any "NO" answers on any checklist will require that the evaluator place a comment in the comment section of that particular checklist.

ADMINISTRATIVE: Written programs, documentation, training, etc., necessary for administration of a unit/facility safety program.

BATTERY SHOP: Acid handling, ventilation, protective clothing, and operational precautions applied to battery servicing and repair.

BRAKE AND CLUTCH REPAIR/TIRE SERVICING MULTI-PIECE WHEELS/ ASBESTOS: Protective equipment, waste handling, hazard posting, and operational precautions applied to exposure to asbestos material and multi-piece wheels during brake and clutch repair and tire servicing.

CHEMICAL STORAGE: Labeling, ventilation, fire protection, storage, and training for hazardous chemical storage.

COMPRESSED GAS CYLINDERS: Storage, equipment protection, leak detection, and operational cautions for compressed gas cylinders and tanks.

CONFINED SPACE: Cleaning, testing, ventilation, protective equipment, approvals, tools, training, rescue procedures, and operational precautions for entry into confined spaces.

ELECTRICAL/MECHANICAL: Grounding, high voltage, waste, lightning protection, and safety procedures for use with electrical and mechanical facilities equipment.

FIRE SAFETY/EGRESS: Flammable cabinet usage, signs, appliance usage, vehicle fueling, spill cleanup, fire extinguisher requirements, and egress for fire safety and personnel protection.

HOUSEKEEPING: Storage, housekeeping, aisles, personnel protective equipment, guard rails and stair opening protection.

LADDERS: Standards, maintenance, and operational precautions for use of ladders.

MOTORPOOL AND MILITARY VEHICLE SAFETY: Ventilation, equipment selection, waste handling, housekeeping, protective equipment, signage, training, certification, and operational precautions related to maintenance of vehicles in shops or motorpool areas.

WELDING OPERATIONS: Protective equipment, ventilation, fire protection, maintenance, inspection, and operational precautions related to gas and electric arc welding operations.

SECTION 1 - SAFETY ASSESSMENT EXECUTIVE SUMMARY
FOR THE USAR SAFETY ASSESSMENT OF:

INSTALLATION NAME: Germantown USARC
INSTALLATION NUMBER: PA076
INSTALLATION LOCATION: 5200 Wissahickon Avenue
Philidelphia , PA

1. A Safety Assessment was performed on the Germantown USARC, with the results identified on the following pages. The Center consists of two buildings: the main AFRC center and an OMS building. The Military parking lot (MEP) is fenced. The center is located two hundred yards to the west of US 1 on Wissahickon Ave. directly beside the new large VA building. The rear of the site is bordered by a rail line. The edge drops sharply down to the rail line at the property line. There are still several 55 gallon drums of corings from 1992 still onsite at the rear of the site. This center is in transition between units of the deactivated 157th Brigade and new units.

2. The safety assessment was conducted using the checklist created by the USARC Safety Office and the 29 CFR Part 1910, September 1994 as a reference. The results of this assessment are as follows: Five Risk Assessment Code (RAC) 2, four RAC 3, 16 RAC 4, and eleven RAC 5 items were identified. The Risk Assessment Codes are assigned to indicate the level of severity for the non-compliant item, with RAC 1 items being the ones that could most lead to death or significant damage to the facility or it's systems. RAC 1 or RAC 2 items should be given immediate attention to preclude serious injury or damage.

3. One of the RAC 2 findings relate to the fact that the latrines do not appear to have Ground fault Circuit Interupters. This finding was previously found in December 1995 by a Safety Inspection from Mr. Mark Groninger from the Ft. Indiantown Gap Safety Office. (Report attached) The second and third RAC 2 finding is due to the door at the end of the assembly hall being blocked . The fourth RAC 2 finding is related to the wiring on the floor in the administration area.There is considerable foot traffic thru this area. Phone and power cords are not arranged or located to insure a safe walking environment. The fifth RAC 2 finding appears to be the result of a leaking roof and subsequent water damage to the second and first floor training room.

4. The remaining RAC 4 and RAC 5 are less severe and relate mostly to a lack of documentation for an active safety program. There is no "Lock-out , Tag-out" written policy. The emergency shut off valves were not labeled on the gas and oil valves. No Safety program SOP was available. There was no appointment of a Safety representative . There was no "Hazard Communication Program" available. SSG Ray and MS Delotach were helpful and receptive to this assessment.

James P. Newcomer

SFC James P. Newcomer
Safety Inspector

James L. Hugar

James L. Hugar
LTC, EN, USAR
Team Leader FTIG #1

Safety Assessment Overview Sheet

Date of Inspection:	13 August 1996
Facility Name:	Germantown USARC
Location:	5200 Wissahickon Ave. Philidelphia, PA. 19144
Installation Number:	PA
Type of Facility, Specify (USARC, OMS, AMSA, ECS, Flight, OTHER):	USARC
Support Installation:	FT. Indiantown Gap Annville, PA
FE Team:	FTIG #1
Evaluation Team Members:	LTC James Hugar MAJ Todd Griffith SFC James Newcomer SFC Joseph Baran
Team Leader:	LTC James Hugar
Address:	FT. Indiantown Gap ATTN: AFZS-FIG-EH-416 Building 11-29 Annville, PA 17003-5011
Phone:	(WK) 717-532-9181 ext.263 717-861-2345
Persons Interviewed:	Facility Manager MS. Delotach Supply SGT SSG Ray
Date of Evaluation:	13 August 96

Comments:

REFERENCES

Code of Federal Regulation (CFR) 1910 Labor Note: All references to 29 CFR 1910 will be in the form 1910.xxx

0.ANSI C2 National Electrical Safety
1.ANSI Z358.1 Emergency Eyewash and Shower Equipment
2.ANSI Z41 Safety-Toe Footwear
3.ANSI Z89.1 Industrial Workers, Protective Headwear
4.ANSI Z87.1 Occupational and Educational Eye and Face Protection
5.AR 11-34 The Army Respiratory Protection Program
6.AR 385-10 The Army Safety Program
7.AR 385-55 Safety, Prevention of Motor Vehicle Accidents
8.AR 40-5 Preventive Medicine
9.AR 420-90 Fire Prevention and Protection
10.AR 700-68 Storage and Handling of Compressed Gases and Gas Cylinders ASME Boiler and Pressure Vessel Code
11.DA Pam 40-501 Hearing Conservation
12.DOD 4145.19-R-1 Storage and Material Handling
13.FM 10-68 Aircraft Refuelling
14.FM 10-69 Petroleum Supply Pint Equipment Operation
15.FM 10-69 Petroleum supply Point Equipment and Operations
16.FM 43-5 Unit Maintenance Operations
17.National Electrical Code (NEC), ANSI/NFPA 70
18.National Fire Protection Agency (NFPA) 410
19.TB 43-0212 Army Oil Analysis Program Guide for Leaders and Users
20.TB 43-0151 Inspection and Test of Air and Gas Compressors
21.TB 385-4 Requirements for Maintenance of Electrical and Electronic Equipment
22.TB Med 503 the Army Industrial Hygiene Program
23.TC 11-6 Grounding Techniques
24.TM 9-2320-209-20-3-2 Organizational Level for 2 1/2 ton, 6X6, M44A1, and M44A2 Series
25.TM 9-6140-200-14 Operator's, Unit, Direct Support and General Support Maintenance Manual for Lead-Acid Storage Batteries
26.TM 38-410 Storage and Handling of Hazardous Material

ACTIVITY/AREA: SAFETY PROGRAM ADMINISTRATION
INSPECTOR: SFC Newcomer

NOTE: All "NO" answers require a comment at the end of the checklist for the area.

ITEM	YES	NO	NA
1. Has the military or civilian leader appointed, in writing, a unit/facility safety representative/director/ officer? (AR 385-10)		x	
2. Do performance standards for military and civilian managers and supervisors include accident prevention and Occupational Health responsibilities as a rating element? (AR 385-10)		x	
3. Has each unit/activity published a standing operating procedure (SOP) that covers all safety responsibilities, and specifically includes areas, such as motor pools, field training, shop safety, and weapons safety. (AR 385-10)		x	
4. Are DA Form 285s (Accident Reporting Form) or DA 285-AB-R (Abbreviated Ground Accident Report Form) completed, as required, for each accident (Class D and above) and is it submitted through appropriate channels (Class C and above)? Are blank DA Form 285's available? (AR 385-40)	x		
5. Is there a DD Form 2272 (DOD Safety and Occupational Health Protection Program) poster on the unit activity board? (AR 385-10)		x	
6. Are the following Army regulations maintained on file in the official publications library? (AR 385-10) a. AR 385-10, Army Safety Program b. AR 385-40, Accident Reporting and Records c. AR 385-55, Prevention of Motor Vehicle Accidents d. AR 672-74, Army Accident Prevention Awards		x	
7. Are military/civilian leaders ensuring that safety related posters and other safety related materials are given the widest possible dissemination? (AR 385-10)		x	
8. Are employees in occupations that could be hazardous to their health (i.e. asbestos, noise) enrolled in the Medical Surveillance Program? (AR 40-5)	x		
9. Are all military/civilian employees provided with appropriate personal protective equipment (i.e. respirators, ear plugs, safety glasses, gloves) and trained in its use? (AR 40-5, AR 385-10) Is the training documented? (1910.132)	x		
10. Is there a "Hazard Communication Program"? (1910.1200) a. Is there a written internal policy available? b. Has documented initial training and subsequent hazard specific training (i.e. new processes involving chemicals, etc.) been conducted? c. Are all containers that contain chemicals marked/labeled as to their contents? d. Are Material Safety Data Sheets (MSDS) for each chemical present, available for employee review within the work place? e. Has an inventory listing been prepared of all chemicals stored/used in the workplace and is it readily available?		x	

11. Is there an installation/unit hazard abatement plan for all identified RAC 1 and RAC 2 hazards? (AR 385-10, TB MED 503)			x
12. Are eye and noise hazardous areas/equipment properly identified and labeled? (1910.133, 1910.145, AR 40-5, TB MED 501)	x		
13. Are hearing protective devices and safety eyeware provided for visitors to hazardous areas? (1910.132, AR 385-10)	x		

COMMENTS: (Include item number and location for each comment. Add extra pages, if necessary.)

1. No documentation available.No one has been appointed. RAC = 5

2. MS. Delotach was not aware of this performance standard. RAC = 5

3. No documentation available. RAC = 5

5. No poster was available. RAC = 5

6. AR-385-10, 385-55 were not present in the unit library. RAC = 5

7. There is little evidence of an active safety information disemination. RAC = 4

9. Training in the use of PPE was not documented. RAC = 4

10. No written policy. No inventory of chemicals in the workplace. No hazzard specific training documented. RAC = 5

ACTIVITY/AREA: ELECTRICAL/MECHANICAL
INSPECTOR: SFC Newcomer

NOTE: All "NO" answers require a comment at the end of the checklist for the area.

ITEM	YES	NO	NA
1. Are live parts of electrical equipment operating at 50 volts or more guarded against accidental contact by being enclosed in approved cabinets or other approved enclosures? (1910.303)	x		
2. Is installed electrical equipment free from recognized hazards likely to cause death, seriouxs physical injury, or fire? (1910.303)	x		
3. Are outside power lines located:x a minimum of 10 feet above sidewaxlks or platforms; 12 feet over areas subject to vehicle traffic, other than trucks; 15 feet for truck traffic; and a minimum of 18 feet over public streets, alleys, roads, and driveways? (1910.304)	x		
4. Are receptacles grounded by being installed in a complete metallic raceway or by a separate grounding conductor (3 wire) and all receptacles electrically connected to the grounding conductor (wire)? (1910.305)	x		
5. Does each electrical outlet box, pull box, junction box, and cabinet have an installed face plate, cover or canopy cover and are unused openings in cabinets and boxes effectively closed? (1910.305)		x	
6. Is water or moisture prevented from entering/accumulating within electrical cabinets, panel boards and junction boxes? (1910.305) Are weatherproof enclosures used in outside or wet locations? (1910.305)	x		
7. Is motor operated equipment (i.e. hand held motor operated tools, portable hand lamps, refrigerators, air conditioners, etc) properly grounded with a three prong plug? (Note: Appliances protected by an approved system of double insulation need not be grounded.)? (1910.304)	x		
8. Are flexible cords and cables prohibited from use as substitute for permanent wiring of a structure, and prohibited from being run through holes in walls, ceilings, floors, doorways, windows or similar openings? (1910.305)		x	
9. Are personnel prohibited from wearing bracelets, watches, rings, or other metal objects when troubleshooting, repairing or calibrating electronic equipment? (1910.301)	x		
10. Are attachment adapter plugs with wire "pigtails" prohibited from being utilized? (NEC 70)	x		
11. Has a written Lockout-Tagout policy been established when work is performed on or near de-energized circuit parts or equipment in any situation where there is a danger of injury due to unexpected energization of the circuit parts or unexpected start up of the equipment (i.e. forging equip, power presses, milling equip, woodworking equip, hoisting equip)? (1910.312, NEC 70E)		x	
12. Are floor fans that have large openings in the metal blade guard, properly covered or have a protective covering (i.e. cloth mesh) that limits	x		

the opening to less than 1/2"? (1910.212)			
13. Are electrical outlets/cords that expose live electrical parts removed from service? (1910.304)	x		
14. Have electrical outlets (outside/inside) that are within 6 feet of a wet area (i.e. sink) been converted to Ground Fault Circuit Interrupters (GFCI) outlets? (NEC 210-8)		x	
15. Are electrically operated tools properly maintained and replaced when worn, broken or deteriorated? (1910.242)	x		
16. Has electrical equipment (e.g. generators) grounding been accomplished and is there documentation of an initial ohm's testing utilizing a multimeter (0-5 volt reading)? (FM 10-69, FM 10-68)			x
17. ELECTRICAL CABINETS: Are cabinets covers properly installed and in serviceable condition? Are circuit breakers properly labeled? Are all breakers inside the breaker box free of cracks and deterioration? Are electrical cabinet doors kept closed except for maintenance and/or servicing? Are warning signs placed on high voltage boxes and ground mounted transformers? (NEC)	x		
18. Have personnel who work with electrical equipment, circuits, or transmission lines been trained by qualified personnel in safety procedures and methods of first aid? (TB 385-4) Have electrical workers been taught cardiopulmonary resuscitation (CPR) standard techniques by a certified instructor? Is refresher training provided?			x
19. Are entrances to buildings, rooms, and other guarded locations containing exposed live parts, locked and marked with conspicuous warning signs forbidding unqualified persons to enter? (1910.303)	x		
20. When working in an electrical (70 volts or higher) equipment shop, a Safety Board must be available to handle electrical emergencies. It must include (a) FM 21-11 First Aid for Solders" (b) emergency procedures (c) emergency telephone numbers (d) rope, halyard, 3/8 inch, 25 feet, NSN 4020-00-174-3031 (e) flashlight, NSN 6230-00-264-8261 (f) safety goggles, NSN 4240-00-052-3776 (g) General purpose First Aid Kit NSN: 6545-00-922-1200 (h) Rubber gloves, (j) safety hook, AWG #10 stranded, with clips and (k) a ground cable 30000 volts NSN: 8415-00-782-21 0/41/42/43 (i) ground stick Are all of these items available? (TB 385-4)			x
21. Are markings to include manufacturer's name/trademark and voltage/ current/ wattage ratings present on equipment and of sufficient durability to withstand the environment where present? (1910.303)	x		

22. (DATA PROCESSING SYSTEMS-DISCONNECTING MEANS) - Is a disconnecting means provided and readily accessible to the operator at the principle exit door to disconnect the power to all electronic equipment in data processing or computer rooms? (1910.306)		x	
23. Are all alternating current systems of 50 volts to 1000 bolts effectively grounded? (1910.304)	x		
24. Is the path to ground from circuits, equipment, and enclosures permanent and continuous? (1910.304)	x		
25. Has the facility grounding system been evaluated within the last 12 months to assure serviceability and compliance with the National Electric Code? (TB 385-4)		x	
26. Are boilers/furnaces properly labeled or identified? (TB 43-0151)	x		
27. Are boiler/furnace operating instructions available for use and inspection? (TB 43-0151, ASME)	x		
28. Are gas/fuel lines located in mechanical room labeled or identified? (TB 43-0151, ASME)		x	
29. Are emergency shut off valves for gas/fuel lines identified? (TB 43-0151, ASME)	x		
30. Are guards/shields, to prevent worker entanglement, properly installed on motors, pumps, gears, belts, and fans?	x		
31. Is the mechanical room adequately ventilated to allow for proper boiler or furnace operations?	x		
32. Is the mechanical room clean, free of leaks/spills and other debris, as well as stored items?	x		
33. Are the pressure shut-off valve and/or pressure relief valves on air compressors, boilers, water heaters, and other such equipment functional? (TB 43-0151)	x		

COMMENTS: (Include item number and location for each comment. Add extra pages, if necessary.)

5. Junction box in mens latrine 1st floor uncovered. RAC = 3

8. Romex interior wire is used for two receptacles thru rooms 107,108 and 109. RAC = 4

11. No "Lock-out \Tag-out" policy exists. RAC = 4

14. The latrines do not appear to have GFI circuit protection. RAC = 2

22. No disconnect exists for the administration area. RAC = 4

25. No documentation available. RAC = 5

28. No signage exists for ID of the gas/oil lines. RAC = 4

29. No identification visible. RAC = 4

ACTIVITY/AREA: FIRE SAFETY/EGRESS
INSPECTOR: SFC Newcomer

NOTE: All "NO" answers require a comment at the end of the checklist for the area.

ITEM	YES	NO	NA
1. Are all rags, waste, etc, soiled by combustible or flammable materials kept in tightly closed metal containers for daily disposal? (TB 55-I500-204-25)	x		
2. Are all sleeping areas equipped with operational smoke detectors for early warning of smoke and/or fire? (NFPA Life Safety Code 101)			x
3. Are "No Smoking in Bed" signs posted in the billets? (AR 420-90)			x
4. Is excess dried vegetation around buildings/bleachers/fences kept to minimum? (1910.141)	x		
5. Are emergency lights installed and operating properly? (1910.36)		x	
6. Are all fire extinguishers, except pressurized water extinguishers, being hydrostatic tested every twelve years? Five years for pressurized water extinguishers? (1910.157)		x	
7. Are posted "No Smoking" signs enforced by employees/supervisors? (AR 420-90).		x	
8. Are fire extinguishers hung on brackets or mounted in unlocked cabinets with the top of the extinguishers not more than: - 5 feet above the floor for extinguishers with a gross weight at or below 40 pounds; - 3 above the floor for extinguishers with a gross weight above 40 pounds and - not being used as door stops? (I9I0.I57 and NFPA 101)	x		
9. Is storage of any type prohibited in furnace or boiler rooms, transformer rooms or vaults, in water heater closets, or mechanical equipment rooms. (AR 420-90)	x		
I0. Is a fire plan available and posted for buildings housing I0 or more persons and/or any hazardous operation? (AR 420-90)		x	
11. Are fire extinguishers inspected monthly? (1910.157)		x	
12. Is flammable storage of items in "office occupancies" prohibited, except for the amount required for maintenance and operation of building and operation of equipment? Is it stored in a closed metal container or safety can or in an inside storage room?	x		
13. Have employers distributed portable fire extinguishers for use by employees so that the travel distance for employees to any extinguisher is never greater than: (a) Class A Fire - 75 feet (b) Class B Fire - 50 feet (c) Class C Fire 50-75 feet (d) Class D (combustible metal powers, flakes, shavings, etc) - 75 feet (1910.157)?	x		

14. Are portable fire extinguishers using carbon tetrachloride or chlorobromomethane extinguishing agents prohibited from use? (1910.157)	x		
15. Where portable fire extinguishers have been provided for employee use in the workplace, has an educational program been provided (both initially and annually) to familiarize employees with the general principles of fire extinguisher use and hazards involved with incipient stage fire fighting? (1910.157)		x	
16. Are extinguishers in the proximity of a hazard located so as to be accessible in the presence of a fire without undue danger to the operator (75 ft for normal hazard occupancy and 50 ft for high hazard occupancy)? (1910.157)	x		
17. Is material stacked such that the minimum vertical clearance between emergency sprinklers (interior) and material(s) below is at least 18 inches? (1910.159)	x		
18. Is there an established procedures for sounding emergency alarms in the workplace? (NOTE: Direct voice communication is acceptable when there are 10 or fewer employees) (1910.165)		x	
19. Are alarm systems maintained in operating condition, except when undergoing repairs or maintenance? (1910.165)	x		
20. Are gas fired devices, which are used to generate heat for comfort such as furnaces and space heaters, vented to an external atmosphere to avoid the accumulation of combustible/noxious products of decomposition? (NFPA 54)			x

MEANS OF EGRESS

1. For multi-story buildings that require more than one exit, are the exits remote from each other and free of clutter? (1910.37)		x	
2. In hazardous areas, or where employees may be endangered by the blocking of any single means of egress due to fire or smoke, is there at least two means of egress remote from each other? (1910.36)	x		
3. Are exits and the way of approach and travel from exits maintained so that they are unobstructed and are accessible at all times? (1910.26, 1910.37)		x	
4. Do all exits discharge directly to the street or other open space that gives safe access to a public way? (1910.37)	x		
5. Are all exits unlocked or unfastened so that free escape is not prevented? (1910.36)	x		
6. Has each emergency light been tested monthly for minimum of 30 seconds and annually for a 1 1/2 hour duration? (NFPA 101)		x	
7. Can all exits be reached without going through a kitchen, storage room, restroom, closet, or similar space subject to being locked? (1910.37, NFPA 101)	x		
8. When exit doors are locked, can the door be unlocked from the inside without the use of a key or special knowledge or effort? (NFPA 101)	x		

9. Are horizontal sliding or vertical doors, used as exits in lieu of side hinged swinging doors, secured in the full open position when the area is occupied? (NFPA 101) Is there a durable sign on or adjacent to the door indicating "This door to remain open when building is occupied"? (NFPA 101)	x		
10. Are doors from a room to an exit, or to a way of exit access, of the side-hinged, swinging type? Does the door swing in the direction of exit travel for rooms with more that 50 occupants? (1910.37)	x		
11. Is the minimum width of any way of exit access no less than 28 inches? (1910.37)	x		
12. Are all exits that are not readily visible marked by a readily visible exit sign? (1910.37)		x	

COMMENTS: (Include item number and location for each comment. Add extra pages, if necessary.)

Fire Safety:

5. 2nd floor lighting inoperable. RAC = 3
6. No supporting documentation available. RAC = 5
7. Cigarett smoking was observed in the recruiting office. RAC = 3
10. Some plans were available . Not every room had a plan. RAC = 4
11. No supporting documentation available. RAC = 5
15. No supporting documentation available. RAC = 5
18. No supporting documentation available. RAC = 5

Means of Egress:

1. SW end of assembly hall has a blocked door due to inoperable door. RAC = 2 this door needs repaired.
3. See # 1 above. RAC = 2
12. Assy. hall lights are burned out. RAC = 3

ACTIVITY/AREA: FLAMMABLE/COMBUSTIBLE LIQUID STORAGE
INSPECTOR:

NOTE: All "NO" answers require a comment at the end of the checklist for the area.

ITEM	YES	NO	NA
1. Are employees wearing safety shoes (no nails in the sole) and neoprene gloves when handling empty fuel drums and packaged products and fuels? (FM 10-69)	x		
2. Are POL personnel wearing clothing that is not wool or other synthetic fibers such as nylon, since wool and synthetic fibers can build electrostatic charges? (FM 10-69, FM 10-68)	x		
3. Are all flammable liquids stored only in safety-type, approved containers (i.e. 5 gallon cans) with a self-closing lid on the pour spout? (A safety can is defined as a metal container with automatic closing devices on all openings and flame arresters within openings.) (1910.106)	x		
4. Are flammable and combustible materials, in the building or unit operating area, kept to a minimum (1 day supply)? Are they stored in an approved metal locker/cabinet? Are rags stored separately from this cabinet? (1910.106)	x		
5. Are flammable storage cabinets used for storage of flammable/combustible liquids? (1910.101 and 1910.106)	x		
6. Are smoking and the use of open flame or spark-producing devices (i.e. phones, tools, flashlights) prohibited in flammable/ combustible liquids handling or storage areas? (I9I0.106)	x		
7. Are "NO SMOKING WITHIN 50 FEET" signs posted in or on flammable/ combustible liquid handling and storage areas?		x	
8. Is the day-to-day use of flammable/combustible liquids in buildings limited to a 1-day operation level, and stored in an approved safety can (see question 3)? (1910.106)	x		
9. Are adequate quantities of type B fire extinguishers readily available for personnel to fight fires involving flammable liquids? (1910.157)	x		
10. Are flammable/combustible liquids limited to not more than 60 gallons per storage cabinet? (1910.106)	x		
11. Are acids isolated from flammable materials? (DOD 4I45.I9-R-I)	x		
12. Are all tanks/pods, hoses, containers, and all parts of the flammable/ combustible liquid dispensing system grounded? (1910.106 and AR 385-55)	x		
13. Are buildings and compartments where flammable/combustible liquids are stored, processed, or used, ventilated? (1910.106)	x		
I4 . Are portable CO_2 fire extinguishers placed at refueling/ storage points? (FM 10-690)	x		
15. Are metal flammable storage cabinets constructed with the bottom, top, door, and sides of the cabinets with at least No. 18 gage sheet iron and double walled with a 1/2 inch air space; joints riveted, welded or made tight	x		

by some equally effective means; the door provided with a three-point lock, and the door still raised at least 2 inches above the bottom of the cabinet? (1910.106)			

16. INSIDE STORAGE ROOMS FOR FLAMMABLES/COMBUSTIBLES

(a) Are openings to other rooms and buildings provided with non-combustible liquid-tight raised sills or ramps at least 4 inches in height, or the floor in the storage area at least 4 inches below surrounding floor? (1910.106)			x
(b) Are openings to other rooms provided with self-closing fire doors? (1910.106)			x
(c) Is the room liquid tight where the walls joint the floor? (1910.106)			x
(d) Is wood used for shelving, racks, dunnage, floor overplay, etc., at least 1 inch nominal thickness? (1910.106)			x
(e) Is at least one clear aisle, a minimum of 3 feet wide, maintained at all times? (1910.106)			x
(f) Is the storage area graded in a manner to divert possible spills away from the building or other exposures or surrounded by a curb at least 6 inches high? (1910.106)			x
(g) Are storage areas protected against tampering or trespassers, where necessary, and kept free of weeds, debris and other combustible material not necessary to the storage? (1910.106)			x
(h) Are water reactive materials stored in a different room from the room with flammable and combustible liquids? (1910.106)			x

17. SERVICE STATIONS

(a) Is there a clearly identified and easily accessible switch(es) or circuit breaker(s) provided at a locationremote from dispensing devices, including remote pumping systems, to shut off the power to all dispensing devices in the event of an emergency? (1910.106)			x
(b) Is a control provided that will permit the pump to operate only when a dispensing nozzle is removed from its bracket on the dispensing unit and the switch on this dispensing unit is manually actuated? Does this control also stop the pump when all nozzles have been returned to their brackets? (1910.106)			x
(c) Is each service station provided with at least one fire extinguisher having a minimum approved classification of 6 B, C, located so that the extinguisher is with 75 feet of each pump, dispenser, underground fill pipe opening, and lubrication or service room? (1910.106)			x

COMMENTS: (Include item number and location for each comment. Add extra pages, if necessary.)

7. No signs were observed behind the OMS shop. There is some storage in a plastic shell covered pallet of batteries. RAC = 4

ACTIVITY/AREA: HOUSEKEEPING
INSPECTOR:SFC Newcomer

NOTE: All "NO" answers require a comment at the end of the checklist for the area.

ITEM	YES	NO	NA
1. Are all places of employment, passageways, storerooms, and rooms kept clean and orderly and in a sanitary condition? (1910.11)		x	
2. Are aisles and passageways kept clean and unobstructed with no carpet snags, electrical cords, or telephone cords extending across walkways, creating slip, trip, and fall hazards? (1910.22)		x	
3. Have warning signs on buildings and other locations been kept in good condition and not allowed to deteriorated beyond recognition? (NFPA 30A)	x		
4. Are guards or handrails available for stairways having more than four risers? (1910.23)	x		
5. Do the steps have a slip-resistant material that is functional? (1910.24)	x		
6. Has Preventive Medicine been contacted if any of the items listed below appear to exist? (AR 40-5) a. Inadequate lighting b. High mold content in the air c. Loud noises d. Inadequate ventilation	x		
7. If personnel wear respirators for any jobs, is there a written Respiratory Protection Program and does it contain the following: a. Written standing operating procedures for proper selection, use and care of respirators? b. Are respirators/filters selected on the basis of employee hazards and does the equipment meet ANSI standards? c. Are employees trained in the proper use of respirators, and have they been medically qualified (pulmonary function test and fit tested by a qualified instructor)? d. Are respirators regularly cleaned and disinfected and stored in a convenient, clean, and sanitary location? e. Are respirators routinely inspected for worn or deteriorated parts? f. Do employees receive yearly pulmonary function and fit testing from a qualified instructor? (AR 385-10, 1910.34, and AR 11-34)			x
8. Does the upstairs storage area have the maximum weight capacity sign posted? (l9l0.22)			x
9. Is warm water available in each lavatory? (l9l0.141)	x		
l0. Are the outlets for nonpotable water (e.g. industrial or fire fighting purposes) posted or otherwise marked in a manner that will clearly indicate the water is unsafe and not to be used for drinking or washing of the person? (1910.141)	x		
11. Is hand soap or similar cleansing agents provided? Are individual hand towels or selections thereof, of cloth or paper, warm air blowers, or clean individual selections of continuous toweling provided? (1910.141)	x		

12. Are employees forbidden from consuming food or beverages in a toilet room or in any area exposed to toxic materials? (1910.141)	x		
13. Have all cracked windows /and or leaking roof(s) (if there were any) been fixed so that no water is allowed into the building to create a slipping hazard? (l960.9)		x	
14. Are upstairs storage areas equipped with railings and toe boards? They must have railings on all sides except those with ladders/stairs, etc. (l9l0.23)			x
15. Is approved head protection provided, where necessary, to personnel for the protection of heads from impact and penetration from falling and flying objects and from limited electric shock and burns? (1910.135)	x		
16. Are covers and/or guardrails provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc? (1910.22)	x		
17. Is every stairway floor opening guarded by a standard railing on all exposed sides except at entrance to stairway? (STANDARD: A smooth-surfaced top rail throughout the length of the railing at a vertical height of 42 inches nominal from the upper surface of top rail to the floor, platform, runway, or ramp level; an intermediate rail approximately halfway between the top rail and the floor, platform, runway, or ramp, and posts.) (1910.23)	x		
18. Is every floor hole into which persons can accidentally walk, guarded with a standard guard railing and with a standard toe board? (1910.23)	x		
19. Do fixed stairways have a minimum width of 22 inches? And, are all treads reasonably slip-resistant and is the rise height and tread width uniform throughout any flight of stairs? (1910.24)	x		

COMMENTS: (Include item number and location for each comment. Add extra pages, if necessary.)

1. There is clutter throughout the building including the lobby area. RAC = 4.
2. The admin. area contains several wire tripping hazzards. RAC = 2
13. The classroom at the NW end of the first floor has wet carpeting. The second floor office above the classroom has a leaking roof which has allowed a 2 bulb light fixture to fall from the ceiling. RAC = 2

ACTIVITY/AREA: LADDERS
INSPECTOR: SFC Newcomer

NOTE: All "NO" answers require a comment at the end of the checklist for the area.

ITEM	YES	NO	NA
1. The maximum length for portable wood ladders shall be: step-ladders 20 feet; single straight ladders 30 feet; two section extension ladders 60 feet; sectional ladders 60 feet; trestle ladders 20 feet; platform step-ladders 20 feet; painter's step-ladders 12 feet; and mason's ladders 40 feet. (1910.25) Do the ladders in this facility meet these requirements?	x		
2. The maximum length for portable metal ladders shall be: single straight ladders 30 feet; two section extension ladders 48 feet; over two section extension ladders 60 feet; step-ladders 20 feet; trestle ladders 20 feet; and platform step-ladders 20 feet. (1910.26) Do the metal ladders in this facility meet these requirements?	x		
3. Step-ladders shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in a open position. (1910.25, 1910.26) Do the step-ladders in this facility meet these requirements?			x
4. Are ladders maintained in good condition, and defective ladders withdrawn from service? Are rungs free of grease and oil? (1910.25)	x		
5. Are only portable ladders that have nonconductive siderails used when working with live electrical circuits? (1910.333)	x		
6. Are all portable ladders placed to prevent slipping, or lashed or held in position? (1910.25)			x
7. Are all portable ladders equipped with non-slip bases when there is a hazard of slipping? (Note: Non-slip bases are not intended as a substitute for care in safely placing, lashing, or holding a ladder that is being used upon oily, metal, concrete, or slippery surfaces.) (1910.25)			x
8. Do the portable ladders used to gain access to a roof, extend at least 3 feet above the point of support, at eaves, gutter, or roof line? (1910.25)	x		
9. Are ladder stands and work platforms capable of supporting at least four times the design work load? (1910.29)	x		
10. Is the standard (work platform) (4 inch nominal) toe-board installed for work levels 10 feet or higher above the ground or floor? (1910.29)	x		
11. For work levels (work platforms) 10 feet or higher above the ground or floor, is a guardrail of 2 x 4 inch nominal, or the equivalent, installed no less than 36 inches or more than 42 inches high (with a mid-rail when required)?			x

(1910.29)			
12. Are wheel/casters (work platforms) provided with a positive wheel and/or swivel lock to prevent movement? (1910.29)			x
13. Are wooden ladders free of sharp edges and splinters? (1910.25)	x		

COMMENTS: (Include item number and location for each comment. Add extra pages, if necessary.)

ACTIVITY/AREA: MOTORPOOL AND MILITARY VEHICLE SAFETY
INSPECTOR:

Note: All "NO" answers require a comment at the end of the checklist for the area.

ITEM	YES	NO	NA
1. Are periodic shop maintenance inspections conducted by the Commander? (FM 43-5)		x	
2. Do supervisors conduct regular safety meetings in the work area? (FM 43-5)		x	
3. Does the unit have a shop safety SOP and does it contain job specific safety precautions and procedures? (FM 43-5)		x	
4. Are maintenance areas kept clean and orderly? (1910.22, FM 43-5)		x	
5. Are oil spills cleaned up immediately? (1910.106, FM 43-5)	x		
6. Are tools properly maintained and replaced when worn, broken, or deteriorated? (1910.242, FM 43-5, and TM 9-243)	x		
7. In addition to job-by-job cleanup, is a scheduled period of 15-30 minutes each shift being utilized for housekeeping duties? (1910.22, FM 43-5)		x	
8. Are drip pans utilized in motor pool bays under vehicles which have seeps or leaks of petroleum, oil, and lubrication (POL) products? (1910.22)	x		
9. Are vehicles that have fuel leaks taken from service until the leak is repaired? (AR 385-55)	x		
10. Is smoking prohibited within 50 feet of vehicles transporting or dispensing flammable liquids, explosives, or other combustible materials? (AR 385-55)	x		
11. Compressed air shall not be utilized for cleaning purposes, except where reduced to less than 30 psi, and then only with effective chip guarding and personal protective equipment. Is this rule being observed? (1910.242)	x		
12. Are military motor vehicles equipped with highway warning kits, which shall include operating procedures for the warning devices used on these vehicles? (AR 385-55)	x		
13. Do emergency response vehicles, vehicles with valuable equipment/explosives, or AMV personnel carriers with a capacity of five or more persons, carry a fire extinguisher? (DOT Reg 393-95, subpart H; AR 385-55)			x
14. Are chock blocks utilized when military vehicles are parked on inclines or whenever maintenance is performed? (AR 385-55)	x		
15. Are guides utilized when drivers back any type of vehicle, if rear visibility is blocked by cargo, or otherwise limited, or with drivers of buses with a capacity greater than 12, and of 2 1/2 ton or larger trucks? (AR 385-55)	x		
16. Are reel drop light cords replaced when they are cracked or damaged? (1910.304 and NEC 70)	x		

17. Is a positive bonding connection made between gasoline tank trucks and the source vehicle/fuel container; and are POL trucks grounded before refueling? (AR 385-55)	x		
18. Are drivers performing documented, before, during, and after operation checks of their vehicles? (AR 385-55)	x		
19. Has electrical equipment (i.e. generators) grounding been accomplished and is there documentation of an initial ohms testing utilizing a multimeter (0-5 volt reading)? (TC 11-6, FM 10-69, and FM 10-68)			x
20. Purging of Vehicle Fuel Tanks (TB 43-0212) a. Personnel engaged in purging operations will not wear wool, nylon, silk, rayon or other similar clothing. They will wear cotton clothing, with no metal buttons, and rubber boots. Is this being adhered to? b. Is the tank statically grounded, prior to, and during all operations? c. Is a combustible vapor test reading being accomplished prior to purging the tank, utilizing an acceptable explosive meter? d. Is proper disposal of purging chemicals being accomplished?	x		
21. Are all flammable waste materials removed to a collection area outside motor shops and garages at the close of each workday? (AR 385-55)	x		
22. Is the use of gasoline prohibited for any cleaning purposes including cleaning vehicle parts, clothing, floors, etc? (AR 385-55)	x		
23. Are special activities such as painting, welding, and battery work, confined to separate parts of the garage or maintenance areas and isolated from each other?	x		
24. Is adequate ventilation provided in the motorpool to prevent accumulation of flammable or injurious vapors and gases?	x		
25. Are floors kept clean and free of oil, grease, gasoline, water, and other hazardous or slippery substances?	x		
26. Do personnel performing hazardous operations have proper personal protective equipment?	x		
27. Are portable guardrails placed around grease or repair pits when not in use?	x		
28. Are lifts provided with stop-checks to prevent movement of the vehicle when the lift is in the raised position?	x		
29. Are personnel prohibited from remaining in vehicle when vehicle is on the lift?	x		
30. Are vehicles supported securely in position on safety stands after being raised by jacks?	x		
31. Are jacks labeled with their load limit and inspection due date?			x
32. Are tools in good working condition?	x		
33. Are gas tanks and other fuel containers removed from vehicles, drained, steamed, and filled with water before welding or other heat-producing operations are performed?	x		

34. Are horn warning or other prescribed signals given by vehicles when entering or leaving the shop?	x		
35. Are the safe load limits for cranes and derricks in both maximum and minimum positions clearly indicated?			x
36. Are cranes and derricks equipped with braking devices, capable of stopping at least one and one-half times the rated load?			x
37. Are cables or wire ropes free from broken strands, corrosion and other defects?	x		
38. Are electrical lightbulbs attached to extension cords provided with wire guards?	x		
39. Are electrical wiring and fixtures installed in grease and repair pits explosion proof?			x
40. Are low voltage lights used in pits? (less than 24V)			x
41. Are steps in pits painted yellow to indicate caution?			x
42. Are fire extinguishers suitable for class B fires distributed and maintained throughout the vehicle parking areas and shops?	x		
43. Are personnel trained as to their individual responsibilities to follow all safety instructions and to use all safeguards incident to the use the tools, machinery, equipment, and processes?	x		
44. Are current maintenance and equipment publications accessible to equipment operators, mechanics, and leaders?	x		

MATERIAL HANDLING AND STORAGE

1. Are only trained and authorized personnel permitted to operate powered industrial trucks? (1910.178)	x		
2. Are overhead guards installed on all powered industrial trucks? (1910.178)	x		
3. Are load backrest extensions used whenever necessary to minimize the possibility of the load or part of it from falling rearward? (1910.178)	x		
4. Are powered industrial trucks in need of repair, defective, or in any way unsafe taken out of service until they are restored to a safe operating condition? (1910.178)	x		
5. Where mechanical handling equipment is used, are sufficient safe clearances allowed for aisles, through doorways, and wherever turns or passage must be made? (1910.176)	x		
6. Are aisles and passageways kept clear and in good repair, with no obstructions across or in aisles that could create a hazard? (1910.176)		x	
7. Are permanent aisles and passageways appropriately marked? (1910.176)		x	
8. Is material stored so as not to create a hazard? (1910.176)	x		

9. Are clearance signs to warn of clearance limits provided? (1910.176)		x	

OVERHEAD AND GANTRY CRANES

1. Are only designated personnel permitted to operate the crane? (1910.179)			x
2. Are crane hooks removed from service when throat openings exceed more than 15 percent of normal or hook shows more than a 10 degree twist from the plane of the unbent hook or shows signs of cracks? (1910.179)			x
3. Do hooks have safety closure latches properly positioned and functional? (TB 43-0142)			x
4. Are hoists, chains, slings and hooks marked to indicate the item identification number, load rating and next periodic inspection date? (TB 43-0142)			x
5. Has a thorough inspection of all ropes (wire ropes) been made at least once a month and a certification record maintained on file? (1910.179)			x
6. Are lifts/hoist that have an hydraulic fluid leak repaired and or replaced, depending upon the problem? (TB 43-0142)			x
7. Do personnel use standard hand signals to communicate with the crane operator?			x
8. Are employees aware of the weight of the load to be lifted?			x
9. Is the hoist chain or rope free from kinks, twists, and NOT wrapped around the load?			x
10. Is hoisting, lowering, swinging, or traveling forbidden while on the load or hook?			x
11. Are loads prohibited over the heads of people?			x
12. Does the operator test the brakes each time a near-capacity load is handled?			x
13. Does the operator stay in position at the controls while the load is suspended?			x
14. When the hook is in the extreme low position, is there at least two complete wraps of rope remaining on the drum?			x
15. Are rope ends securely attached to the drum by means of a clamp or socket arrangement approved by the crane or rope manufacturer?			x
16. Is the hook centered over the load to prevent swinging?			x
17. Has the crane been load tested?			x

COMMENTS: (Include item number and location for each comment. Add extra pages, if necessary.)

1-4, 7. This is new unit . The motor SGT had recently arrived. RAC = 4

Material Handling and Storage:

6. No primary lanes of operations exist. RAC = 4

9. No overhead signs are located on the main overhead doors. RAC = 4

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON
FORT INDIANTOWN GAP
ANNVILLE, PENNSYLVANIA 17003-5000

REPLY TO
ATTENTION OF

AFZS-FIG-SO (385) 11 December 1995

MEMORANDUM FOR Facility Manager, Germantown USARC, 5200 Wissahickon Ave., Philadelphia, PA 19144
ATTN: Ms. Deloatch

SUBJECT: Safety Inspection

1. On 30 November 1995, I inspected the US Army Reserve Center in Germantown. I was accompanied by Ms. Deloatch during my inspection.

2. Following are findings and recommendations from my inspection:

a. Ground-Fault Circuit Interrupters (GFCI) are recommended in wet locations. The bathrooms have electrical receptacles that do not appear to have GFCI protection. Recommend a qualified electrician determine if GFCI is in place in this location, and if not, install GFCI.

b. Room 126 has an electrical receptacle with a loose faceplate. Recommend replacing or repairing faceplate.

c. Loose handrail in stairway. Recommend repairing handrail.

d. Flexible wiring between rooms 107 and 108. If wiring is required in this location, recommend installing conduit to enclose and protect wiring.

e. Some overhead doors in the motor pool do not have entrapment protection devices (reversal mechanism that activates when the bottom of door strikes an object). Recommend entrapment protection devices be installed.

f. Material Safety Data Sheets (MSDS) were not available for hazardous chemicals. 29 Code of Federal Regulation (CFR) Part 1910.1200g(1) states that employers shall have a MSDS readily available for each hazardous chemical. A chemical inventory (which lists all hazardous chemicals in the center) is also required. The manufacturer is required to ship MSDSs with the hazardous material. Recommend contacting the manufacturers of the chemicals in the motor pool to obtain MSDSs.

3. Thank you for your cooperation during the scheduling and conduct of this inspection.

4. If you have any questions, please contact me at (717) 861-2015.

MARK D. GRONINGER
Installation Safety Officer

CF:
DGC

ENCLOSURE 4
ENVIRONMENTAL COMPLIANCE ASSESSMENT

INSTALLATION SCREEN

*FFID: PA-2104PA076
*Installation Name: GERMANTOWN VETERANS MEM USARC
Installation Category: R
MACOM: USARC

MUSARC: 99TH ARCOM
BASOPS ARCOM: 99TH
Support Installation: FORT INDIANTOWN GAP
Facility / Activity Type: 1) FM 2) OM 3) 4) 5)

EPA Region: 3
Congressional District:
Address: 5200 WISSAHICKON AVENUE

City: PHILADELPHIA
State: PA
Country: USA
Zip Code: 19144-4095

ASSESSMENT SCREEN

*Fiscal Year: 1996 *Assessment Date (MM/DD/YYYY): 09/17/1996
*Assessment Type: E
*Manual Used: T

Manual Supplement Used:

Local Manual (OCONUS: MACOM Specific Manual)
Date (MM/YYYY): /
Author:
Title:

State Manual (OCONUS: Country Specific Manual)
Date (MM/YYYY): /
Author:
State Postal Code or Country Code:

*Assessor Name: MAJ TODD D GRIFFITH
Point of Contact: MAJ TODD D GRIFFITH

Address: BLDG 110
1129 UTILITY ROAD
City: ANNVILLE,
State: PA
Zip Code: 17003-5029
Phone: (717)861-2345

For Contract ECAS

Contract Number:
Delivery Order Number:
Contracting Office:

TABLE 1-1
SUMMARY OF FINDINGS

INSTALLATION: GERMANTOWN VETERANS MEM USARC Fiscal Year: 1996
ID: PA-2104PA076

SECTION NO.	TITLE	REGULATORY 1	REGULATORY 2	REGULATORY HS	MANAGEMENT POS	MANAGEMENT 3	MANAGEMENT HS	TOTAL
A	Air Emissions	0	0	0	0	0	0	0
C	Cultural Resources	0	0	0	0	0	0	0
HM	Hazardous Materials	3	0	0	0	1	0	4
HW	Hazardous Waste	0	0	0	0	0	0	0
NR	Natural Resource	0	0	0	0	0	0	0
O1	Environmental Impacts	0	0	0	0	0	0	0
O2	Environmental Noise	0	0	0	0	0	0	0
O3	IRP	0	0	0	0	0	0	0
O4	Pollution Prevention	0	0	0	0	0	0	0
O5	Program Management	0	0	0	0	0	0	0
PM	Pesticide	0	0	0	0	0	0	0
PO	POL	0	0	0	0	0	0	0
SO	Solid Waste	0	0	0	0	0	0	0
ST	Storage Tanks	0	0	0	0	0	0	0
T1	PCB	0	0	0	0	0	0	0
T2	Asbestos	0	0	0	0	0	0	0
T3	Radon	0	0	0	0	1	0	1
T4	Lead Based Paint	0	0	0	0	0	0	0
WA	Wastewater	0	0	0	0	0	0	0
	Water Quality	0	0	0	0	0	0	0
	TOTALS	3	0	0	0	2	0	5

Data File Name Prefix: C:\ECAS\PA076
Date Summary Report Produced: 09/20/96

HM.1.2 #1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: HM-001-002 FINDING ID: PA076HM003
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: OMS AND MAIN BUILDING
IFS FACILITY NUMBER:
FACILITY TYPE: AFRC(MB) - ARMED FORCES RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: msds for each hazardous material not on file or accessible to workers

CRITERIA: Installations/CW facilities are required to have on file an MSDS for each hazardous chemical stored and used at the installation/CW facility (29 CFR 1910.1200(b)(3)(ii), 1910.1200(b)(4)(ii), 1910.1200(b)(6), 1910.1200(g)(1), and 1910.1200(g)(8)).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S):

STATUS OF CORRECTION:

INSTALLATION RESPONSE:
CORRECTIVE ACTION DESCRIPTION: _____
_____
_____
_____
_____
_____
_____

DATE CORRECTIVE ACTION COMPLETED: _____

ESTIMATED DATE CORRECTIVE ACTION TO BE COMPLETED: _____
1383 PROJECT # (IF APPLICABLE): _____

POC: _____ PHONE NUMBER: _____

HM.1.4 #1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: HM-001-004 FINDING ID: PA076HM01
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: SOUTH SIDE OF MEP
IFS FACILITY NUMBER:
FACILITY TYPE: AFRC(MB) - ARMED FORCES RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: 5 gallon pail of dry cleaning solvent is stored outdoors without rain protection, no drip pans or absorbent materials are present, another unmarked 5 gallon pail and an unmarked 55 gallon drum is present

CRITERIA: Specific housekeeping requirements must be met in areas where hazardous materials are stored (29 CFR 1910.176(c)).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): properly store dry cleaning fluid under cover with spill protection, identify contents of unknown containers and properly dispose

STATUS OF CORRECTION:

INSTALLATION RESPONSE:
CORRECTIVE ACTION DESCRIPTION: _____
_____
_____
_____
_____
_____
_____

DATE CORRECTIVE ACTION COMPLETED: _____

ESTIMATED DATE CORRECTIVE ACTION TO BE COMPLETED: _____
1383 PROJECT # (IF APPLICABLE): _____

POC: _____ PHONE NUMBER: _____

HM.10.1 #1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: HM-010-001 FINDING ID: PA076HM004
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: THROUGHOUT
IFS FACILITY NUMBER:
FACILITY TYPE: AFRC(MB) - ARMED FORCES RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: there is no evidence that a written hazard communications program has been implemented

CRITERIA: Installations/CW facilities are required to have a written hazard communication program that is designed to provide all employees with information about the hazardous chemicals to which they are exposed (29 CFR 1910.1200(b)(1) and 1910.1200(e)(1)) [February 1995].

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S):

STATUS OF CORRECTION:

INSTALLATION RESPONSE:
CORRECTIVE ACTION DESCRIPTION: _____

DATE CORRECTIVE ACTION COMPLETED: _____

ESTIMATED DATE CORRECTIVE ACTION TO BE COMPLETED: _____
1383 PROJECT # (IF APPLICABLE): _____

POC: _____ PHONE NUMBER: _____

HM.20.1 #1 III FEDERAL FINDING
MANUAL QUESTION NUMBER: HM-020-001 FINDING ID: PA076HM002
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: THROUGHOUT
IFS FACILITY NUMBER:
FACILITY TYPE: AFRC(MB) - ARMED FORCES RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: no spill kits in the center or oms

CRITERIA: Absorbent materials should be available for spill and/or release cleanup in areas where hazardous materials are used or stored (MP).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S):

STATUS OF CORRECTION:

INSTALLATION RESPONSE:
CORRECTIVE ACTION DESCRIPTION: _____

DATE CORRECTIVE ACTION COMPLETED: _____

ESTIMATED DATE CORRECTIVE ACTION TO BE COMPLETED: _____
1383 PROJECT # (IF APPLICABLE): _____

POC: _____ PHONE NUMBER: _____

T3.1.3.R #1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: T3-001-003-R FINDING ID: PA076T001
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: THROUGHOUT
IFS FACILITY NUMBER:
FACILITY TYPE: AFRC(MB) - ARMED FORCES RESERVE CENTER - MAIN BLDG

FINDING DESCRIPTION: unable to verify that radon measurement was performed

CRITERIA: All Reserve facilities are required to perform radon measurements according to a prescribed prioritized schedule in order to identify Reserve structures with radon levels above 4 pCi/L with emphasis on identifying Priority I structures with levels greater than 20 pCi/L (AR 200-1, para 11-2a(3) and 11-4).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S):

STATUS OF CORRECTION:

INSTALLATION RESPONSE:
CORRECTIVE ACTION DESCRIPTION: _____
_____
_____
_____
_____
_____
_____

DATE CORRECTIVE ACTION COMPLETED: _____

ESTIMATED DATE CORRECTIVE ACTION TO BE COMPLETED: _____
1383 PROJECT # (IF APPLICABLE): _____

POC: _____ PHONE NUMBER: _____

Germantown USAR Center
PA076

Photo 1: dry cleaning fluid and unidentified drums stored outdoors with no secondary containment

ENCLOSURE 5
ARMS VAULT FACILITY STRUCTURAL CERTIFICATION

INSPECTION
ARMS ROOM CHECK LIST

FACILITY: Germantown Veterans Memorial U.S. Army Reserve Center
5200 Wissahickon Avenue
Philadelphia, PA
19144

POINT OF CONTACT: SSG Roy

	Yes	No
A. FLOORS:		
1. 6 inch thick concrete slab on grade reinforced with wire mesh.	X	
2. 6-inch thick concrete slab reinforced with steel bars (Floor forms the ceiling of underlying room or area).	N/A	
3. 2-inch concrete topping over existing floor slab.	N/A	
4. Existing slabs removed and replaced with new 6-inches of reinforced concrete.	N/A	
B. WALLS:		
1. 8-inch concrete reinforced with No. 4 bars at 9 inches on center in each direction.	N/A	
2. 8-inch concrete masonry with No. 4 bars threaded through masonry units cavities at 8 inch centers. Cells of masonry filled with mortar or concrete.	N/A	
3. 8 inches of brick interlocked between inner and outer courses.	N/A	
4. Existing walls: New 8 inch reinforced (inner) (outer) walls constructed against existing walls.	N/A	
5. Other: 8 inch masonary block reinforced with 3/16 expanded metal	X	
C. CEILING:		
1. 8 inch concrete slab reinforced with No. 4 bars minimum, and forming a grid where the area of any opening does not exceed 96 square inches.	X	
2. Concrete Pan Joists: Thinnest portion of the joist not less than 6 inches and the clear space between joist does not exceed 20 inches	N/A	
3. _____ inch concrete topping provided over existing concrete ceiling slab. Reinforcing bars spacing form a grid where the area of any opening does not exceed 96 square inches.	N/A	

D. DOORS: (Barracks and other Full-Time occupied spaces)

1. Two doors provided to arms vault. Each door 1-3/4 inch thick solid core wood with 12 gauge metal plate securely attached to the outside face.	N/A	___
2. Two doors provided to arms vault. Each door 1-3/4 inch thick industrial type internally reinforced vertically with continuous steel stiffeners spaced 6 inches on center. Minimum thickness or skin of doors is not less than 14 gauge.	N/A	___
3. Two doors provided to arms vault. One door as described in D1 or D2 above. The second door, rod and bar grid door as required in AR 190-11.	N/A	___

E. DOORS: (Reserve Centers)

1. One Class 5 steel vault door (Fed. Spec. AA-D-600B) with a built in three position dail-type changeable combination lock used in lieu of door described above.	X	___
2. Day gate provided but not required.	X	___

F. ARMS PASS WINDOW DOORS:

Pass window provided with doors as required for entrance to Arms Vault.	N/A	___

G. DOORS AND PASS WINDOW FRAMES:

Frames are compatible with doors and frames and securely anchored.	N/A	___

H. HARDWARE FOR DOORS:

1. Locking device for the outer door to vault is high security hasp conforming to military specification MIL-P-43607.	N/A	___
2. The inner door to the arms vault has mortise cylinder deadbolt lock "ultra 700" with Medelo or Emhart high security cylinder.	N/A	___
3. Door hinges are (fixed-Pin security type) (safety-stud hinges) (with hinge pins welded) to prevent removal.	N/A	___
4. Hinge mounting screws not exposed to the outside of the arms rooms.	N/A	___

I. OPENINGS: (Walls or Ceilings)

1. No opening required in walls or ceilings.	X	___
2. All openings greater than 96 square inches protected by rod-and bar grid as required in paragraph E-5 or AR 190-11.	N/A	___

J. ARMS ROOM ANCHOR RINGS:

Anchor rings provided at arms room walls to secure arms racks.	X	___

K.	SECURITY LIGHTING:		
	Interior entrances of arms rooms illuminated a minimum of .1 foot-candle at any point with in 20 foot radius of the entrance.	X	___
L.	INTRUSION DETECTION SYSTEM: (IDS)		
	1. Intrusion alarm detection system provided for vaults as required in AR 190-11.	X	___
	2. Alarms at local law enforcement.	X	___
	3. Other: IDS has motion sensors	X	___
M.	MECHANICAL:		
	1. Electrical dehumidifier provided for vault temperature control.	___	X
	2. 3-inch floor drain provided for dehumidifier.	___	X
N.	SECURITY PATROLS:		
	Reserve center is checked by security patrol periodically.	X	___
O.	BOLTS:		
	If facility is not located on a military installation bolts of weapons shall be removed and secured separately.	X	___
P.	WAIVERS, UNUSUAL REQUIREMENTS AND ADDITIONAL FEATURES:	___	X
Q.	SUMMARY:		
	This facility meets Class II storage requirements for weapons.	X	___

CERTIFICATION OF COMPLIANCE WITH CRITERIA SET FORTH AR 190-11

Todd D. Griffith, Major CE PE
Mechanical Engineer
416th ENCOM

16 September 1996

SECURITY CONSTRUCTION STATEMENT

For use of this form, see AR 190-11; the proponent agency is ODCSPER.

INSTRUCTIONS

This form will be prepared in three copies. The original will be maintained permanently in the files of the individual signing the form. The first copy will be maintained permanently in the using unit/organizational files. The second copy will be filed permanently in the Arms/ammunition storage facility. All entries except item 5 will be typewritten.

1. THE CONSTRUCTION OF THIS FACILITY CONFORMS TO THE CRITERIA OF AR 190-11 WHICH IS IN EFFECT ON THIS DATE EXCEPT AS INDICATED HEREON

This facility meets the standards of Paragraph 4-2, Category II, AR 190-11, dated 31 Mar 86 for the Storage of Arms, Ammunition, and Explosives.

(Changed from Category III to Category II, Jan 88, due to upgrade with expanded metal.)

2. ROOM AND BUILDING NUMBER, STREET AND INSTALLATION ADDRESS

Germantown U.S. Army Reserve Center
5200 Wissahickon Avenue
Philadelphia, PA 19144-4095

3. THIS APPLIES TO

a. [X] AN EXISTING STRUCTURE
b. [ ] CONSTRUCTION OF NEW FACILITY
c. [ ] MODIFICATION OF EXISTING FACILITY *(Explain)*

4. NAME, GRADE, ORGANIZATION AND ADDRESS OF OFFICIAL SIGNING IN ITEM 5 BELOW

Larry R. Kelley
Directorate of Engineering and Housing
Fort Indiantown Gap, Annville, PA 17003-5011

5. SIGNATURE	6. DATE SIGNED
Larry R Kelley	1-12-93

DA Form 4604-R, 1 Mar 77

EA Engineering, Science, and Technology
15 Loveton Circle
Sparks, Maryland 21152
Tel: (410) 771-4950
Fax: (410) 771-4204

LETTER OF TRANSMITTAL

TO: **Compliance Project Manager**
99th RSC Customer Support Team
8543 6th Armored Cavalry Road
Fort Meade, Maryland 20755-5543

DATE: 20 March 2003	**JOB NO. 61401.67 0002**
ATTENTION: Mr. John Pontier	
RE: USARC Germantown UST Closure Report	
(Contract GS-10F-0228J, DO DABJ15-03-F-0069)	

WE ARE SENDING YOU [X] Attached [ ] Under separate cover via _____ the following items:

[ ] Shop drawings [ ] Prints [ ] Plans [ ] Samples [ ] Specifications

[ ] Copy of letter [ ] Change order [ ] _____

COPIES	DATE	NO.	DESCRIPTION
3	March 2003	1	USARC Germantown Underground Storage Tank Closure Report

THESE ARE TRANSMITTED as checked below:

[X] For approval [ ] Approved as submitted [ ] Resubmit _____ copies for approval

[ ] For your use [ ] Approved as noted [ ] Submit _____ copies for distribution

[ ] As requested [ ] Returned for corrections [ ] Return _____ corrected prints

[X] For review and comment [ ] _____

[ ] **FOR BIDS DUE** _____ 20__ [ ] PRINTS RETURNED AFTER LOAN TO US

REMARKS: EA Engineering, Science and Technology, Inc. is pleased to provide the 99th RSC with copies of the above-referenced report.

Should you have any questions or comments, please do not hesitate to contact me directly at (410) 329-5151.

COPY TO: EA file (1)
\\LOVETON_FP\Projects\Federal\GSA\projects\6140167 Germantown\Tank Removal\Vincetransmitltr.doc

SIGNED: Vincent A. Williams – Senior Project Manager

If enclosures are not as noted, kindly notify us at once.

61401.67

Underground Storage Tank Closure Report
US Army Reserve Center – Germantown
PADEP Facility ID 51-40712; USARC Facility PA076
City of Philadelphia, Pennsylvania 19144

Prepared for

United States Army Reserve
99th Regional Support Command
1605 Coraopolis Heights Road
West Pointe Corporate Center
Coraopolis, Pennsylvania

Prepared by

EA Engineering, Science, Technology, Inc.
15 Loveton Circle
Sparks, Maryland 21152

March 2003

61401.67

Underground Storage Tank Closure Report
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PADEP Facility ID 51-40712; USARC Facility PA076
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Prepared for

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Prepared by

EA Engineering, Science, Technology, Inc.
15 Loveton Circle
Sparks, Maryland 21152

Victoria M. Miller — 3/20/03

Victoria M. Miller
Project Scientist — Date

Vincent A. Williams — 3/20/03

Vincent A. Williams
Senior Project Manager — Date

March 2003

EXECUTIVE SUMMARY

EA Engineering, Science and Technology, Inc. (EA), Sparks, Maryland was contracted by the 99th Regional Support Command (RSC) under General Services Administration Contract GS-10F-0228J, Delivery Order DABJ15-03-F-0069 to remove the existing non-regulated heating oil underground storage tank (UST) at the US Army Reserve Center Germantown, 5200 Wissahickon Avenue, Philadelphia, Pennsylvania 19144. Site location and features are included as Figures 1 and 2 in Attachment A.

The Pennsylvania Department of Environmental Protection (PADEP) assigned facility ID No 51-40712 to the property. On 27 January 2003 a 2,500-gallon fiberglass underground storage tank (UST) was permanently closed by removal as per City of Philadelphia Permit No. 69593 by a State of Pennsylvania and City of Philadelphia licensed UST contractor. The UST held No. 2 fuel oil and was utilized for secondary heating of the main building.

Under current PADEP storage tank regulations, the UST is considered a non-regulated tank due to the fact it is utilized for the storage of fuel prior to on-site combustion for heating purposes. However, to ensure proper UST removal and characterization of site soils, UST closure was conducted using the Technical Document Closure Requirements for Underground Storage Tank Systems published by the PADEP, 01 April 1998 as a guide. This report uses the PADEP closure form to demonstrate that the UST closure was performed properly. EA personnel supervised removal activities and conducted soil confirmatory sampling. Photographs documenting the closure process are included as Attachment B.

The 2,500-gallon fiberglass UST was located beneath a concrete reinforced pad and was full at the time of removal. The vent riser was located behind the chiller unit, along the building perimeter. The tank had no leaks. Additionally, no interstitial fluid was observed released. No petroleum staining of soils or hydrocarbon odor was observed in the backfill soils. Groundwater was not encountered. A photo-ionization detector (PID) was utilized for soil screening, as well as visual and olfactory assessment procedures. No PID response and no visual or olfactory indications of release was observed during the removal activities.

PADEP soil sample collection and preservation procedures and methods, including chain-of-custody procedures and documentation were utilized. Four samples were collected from the bottom of the excavation; one from each of four sides surrounding the UST. Samples were not collected immediately beneath the UST due to the presence of a

concrete pad in the two feet below tank interval. Samples were collected from native soils approximately two feet below the tank bottom along each side of the encountered concrete pad, except for sample 1405012703, which was collected at 2.5 ft below the tank bottom due to a lack of natural soils at the two-foot interval. Sample locations are described on the attached Figure 2. The four collected soil samples were placed in an ice chest prior to timely delivery to GLA Laboratory in King of Prussia, Pennsylvania for analysis of PADEP prescribed constituents. Analytical results are included as Attachment C.

Soil confirmatory sample results were compared against the Unsaturated Soil Standard / Action Level set by The Land Recycling and Environmental Remediation Standards Act (Act 2), Chapter 250 of 16 August 1997, including subsequent revisions, and Medium-Specific Concentrations for Organic Regulated Substances in Soil (Direct Contact Numeric Value – Non-Residential and Soil to Groundwater Numeric Value for Used Aquifers - Residential). The laboratory results of the soil samples showed no concentrations of any of the tested analytical parameters in the volatile organic range above or at the Practical Quantitation Limits. The semi-volatile compound, phenanthrene, was detected in each of the four soil samples, but at levels well below the corresponding PADEP Act 2 standard. Additionally, fluorene and naphthalene were detected in sample 1410012703, but at levels well below the corresponding PADEP Act 2 standards. The presence of the UST does not appear to have had an adverse effect on the underlying site soils.

Disposal of the cleaned tank was performed and documented by Neuber Environmental Services, Inc. Waste management of usable product, unusable product, sludges and sediments were handled in accordance with the appropriate regulations and industry standards. Documentation of waste disposal is included in Attachment D.

This closure report should be maintained for at least three years after completion of permanent closure by the owners who took the UST out of service, or by the current owners of the property.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

UNDERGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

51 - 40712
Facility I.D.

City of Philadelphia
Municipality

Philadelphia
County

03/14/2003
Date Prepared

Vincent A. Williams
Name of Person Submitting Report
(Please Print)

EA Engineering, Science & Technology, Inc.
Company Name
(If Applicable)

Senior Project Manager
Title

Closure Method (Check all that apply):

- ☒ Removal
- ☐ Closure-In-Place
- ☐ Change-In-Service

Site Assessment Results (Check all that apply):

- ☒ No Obvious Contamination - Sample Results Meet Standards/Levels
- ☐ No Obvious Contamination - Sample Results Do Not Meet Standards/Levels
- ☐ Obvious, Localized Contamination - Sample Results Meet Standards/Levels
- ☐ Obvious, Localized Contamination - Sample Results Do Not Meet Standards/Levels
- ☐ Obvious, Extensive Contamination

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

DATE RECEIVED: _____

UNDERGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

Owners who are permanently closing underground storage tanks may use this form to demonstrate that an underground storage tank closure was performed in accordance with the "Closure Requirements for Underground Storage Tank Systems" document. PLEASE PRINT OR TYPE. COMPLETE ALL QUESTIONS.

SECTION I. Owner/Facility/Tank/Waste Management and Disposal Information

1. Facility ID Number 51 - 40712
2. Facility Name US Army Reserve Center Germantown
3. Facility County Philadelphia
4. Facility Municipality City of Philadelphia
5. Facility Address 5200 Wissahickon Avenue, Philadelphia, PA 19144
6. Facility Contact Person Nick Taylor
7. Facility Telephone Number (610) 584 - 1786
8. Owner Name Department of the Army
9. Owner Mailing Address Building 176 NSA, Willowgrove, PA 19090
10. Description of Underground Storage Tanks (Complete for each tank closed)

DATE OF TANK CLOSURE (Month/Day/Year)		01- 27 -2003	- -	- -	- -
Tank Registration Number		0			
Estimated Total Capacity (Gallons)		2,500			
Substance(s) Stored Throughout Operating Life of Tank (Check All That Apply)	**a. Petroleum** Unleaded Gasoline	☐	☐	☐	☐
	Leaded Gasoline	☐	☐	☐	☐
	Aviation Gasoline	☐	☐	☐	☐
	Kerosene	☐	☐	☐	☐
	Jet Fuel	☐	☐	☐	☐
	Diesel Fuel	☐	☐	☐	☐
	Fuel Oil No. 1	☐	☐	☐	☐
	Fuel Oil No. 2	☒	☐	☐	☐
	Fuel Oil No. 4	☐	☐	☐	☐
	Fuel Oil No. 5	☐	☐	☐	☐
	Fuel Oil No. 6	☐	☐	☐	☐
	New Motor Oil	☐	☐	☐	☐
	Used Motor Oil	☐	☐	☐	☐
	Other, Please Specify				
NOTE: If Hazardous Substance Block is Checked, Attach Material Safety Data Sheets (MSDS)	**b. Hazardous Substance** Name of Principal CERCLA Substance AND Chemical Abstract Service (CAS) No.	☐	☐	☐	☐
	c. Unknown	☐	☐	☐	☐
Closure Method (Check Only One)	**a. Removal**	☒	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-In-Service	☐	☐	☐	☐
Partial System Closure (Yes or No)		NO			

DATE OF TANK CLOSURE (Month/Day/Year)		- -	- -	- -	- -
Tank Registration Number					
Estimated Total Capacity (Gallons)					
Substance(s) Stored Throughout Operating Life of Tank (Check All That Apply)	**a. Petroleum**				
	Unleaded Gasoline	☐	☐	☐	☐
	Leaded Gasoline	☐	☐	☐	☐
	Aviation Gasoline	☐	☐	☐	☐
	Kerosene	☐	☐	☐	☐
	Jet Fuel	☐	☐	☐	☐
	Diesel Fuel	☐	☐	☐	☐
	Fuel Oil No. 1	☐	☐	☐	☐
	Fuel Oil No. 2	☐	☐	☐	☐
	Fuel Oil No. 4	☐	☐	☐	☐
	Fuel Oil No. 5	☐	☐	☐	☐
	Fuel Oil No. 6	☐	☐	☐	☐
	New Motor Oil	☐	☐	☐	☐
	Used Motor Oil	☐	☐	☐	☐
	Other, Please Specify	_____	_____	_____	_____
NOTE: If Hazardous Substance Block is Checked, Attach Material Safety Data Sheets (MSDS)	**b. Hazardous Substance**	☐	☐	☐	☐
	Name of Principal CERCLA Substance	_____	_____	_____	_____
	AND				
	Chemical Abstract Service (CAS) No.	_____	_____	_____	_____
	c. Unknown	☐	☐	☐	☐
Closure Method (Check Only One)	**a. Removal**	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-In-Service	☐	☐	☐	☐
Partial System Closure (Yes or No)					

Yes **N/A**

11. Briefly describe the storage tank facility and the nature of the operations which were conducted at the facility (both historical and present) **including use of tanks:**

UST was utilized to fuel the secondary heating system of the main building (closest to Wissahickon Avenue).

☒ 12. A site location and sampling map of the site, drawn to scale, is attached. See page 11 of 11.

☒ 13. Original, color photographs of the closure process are attached (i.e., inside of excavation/piping runs, pit water, tanks showing condition).

☐ X 14. An amended "Registration of Storage Tanks" form was submitted to the DEP, Bureau of Watershed Conservation, Division of Storage Tanks, P.O. Box 8762, Harrisburg, PA 17105-8762.

Date: _____

☐ ☒ 15. If a reportable release was confirmed, the appropriate regional office of DEP was notified by the owner or operator.

Date: ____ - - _____ Office: _____

Yes N/A

☒ ☐ 16. If tanks were cleaned on-site:

a. Briefly describe the disposition of usable product: Usable and unusable product were combined and disposed by Monarch Environmental.

b. Briefly describe the disposal of unusable product, sludges, sediments, and wastewater generated during cleaning. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):
Usable and unusable product, sludge, sediment and wastewater were combined and disposed by Monarch Environmental. Monarch Environmental (NJR000040667) transported the material to International Petroleum of Wilmington Delaware (DER000001297). See attached documentation.

c. If tank contents were determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

☐ ☒ 17. If tanks were removed from the site for cleaning:

a. Provide the name and permit number of the processing, treatment, storage or disposal facility performing the tank cleaning: _____

b. If tank contents were d determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

18. Briefly describe the disposition of tanks/piping (Attach documentation of proper disposal):
The UST and piping were removed from the site and disposed by Service Disposal of Delaware, Inc. See attached documentation.

☐ ☒ 19. If contaminated soil is excavated:

a. Briefly describe the disposition and amount _____ (tons) of contaminated soil. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):

b. If contaminated soil is determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

Yes	N/A		
☐	☐	20.	Briefly describe the disposition of and amount < 100 (tons) of uncontaminated soil (attach analyses): Excavated soils exhibited no indications of contamination. Soils were returned to the excavation.

I, _____, hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904
(Print Name)
(relating to unsworn falsification to authorities) that I am the owner of the above referenced storage tank(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

_____ _____ / / _____
Signature of Tank Owner Date

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

UNDERGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION II. Tank Handling Information

Facility ID Number 51 - 40712

Yes	N/A		
		1.	Briefly describe the excavation and initial on-site staging of uncontaminated/contaminated soil: Soils and backfill material surrounding the UST were removed by a Komatsu backhoe and staged on-site. All soils were staged as suspected not contaminated. Excavated soils were returned to the excavation and covered with stone to grade.
		2.	Briefly describe the method of piping system closure and the closure of the piping systems including the quantity and condition of the piping: All piping was removed by closure, including the vent pipe, fill, and return lines. Piping was in good condition at the time of removal.
		3.	Briefly describe the condition of the tanks and any problems encountered during tank removal: The fiberglass tank exhibited no signs of cracks or leaks during removal. No problems were necountered during removal.
		4.	Briefly describe the method used to purge the tanks of and monitor for explosive vapors: N/A
☒	☐	5.	If tanks were cleaned on-site: a. Briefly describe the tank cleaning process: Tank was entered by one authorized and trained person from Neuber Environmental while wearing the appropriate personal protective equipment required for cleaning the tank interior. Fluids were removed via a Vac-Truck. b. If subcontracted, name and address of company that performed the tank cleaning: Neuber Environmental Services, Inc. 42 Ridge Road, Phoenixville, PA 19460
☐	☒	6.	If tanks were closed-in-place, briefly describe the tank fill material:
☐	☒	7.	If contamination was suspected or observed, the "Notification of Contamination" form was submitted.

2630-FM-LRWM0159 Rev. 6/2002

SECTION II. (continued)

I, David C. Kirk (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed the tank handling activities associated with the closure of the above referenced storage tank(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

David C. Kirk
Signature of Certified Installer

03/19/2003
Date

2179
Installer Certification Number

1348
Company Certification Number

Neuber Environmental Services, Inc.
Company Name

42 Ridge Road
Street

Phoenixville, PA 19460
City/Town, State, Zip

610 - 469 - 1723
Phone

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

UNDERGROUND STORAGE TANK CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # N/A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 40712

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A: if NOT encountered).

Bedrock N/A feet below land surface Water N/A feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).
Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND

1). Was obvious contamination observed while excavating?

☒ NO ----------→ Conduct confirmatory sampling ----------→ See end of this section for options on submission and maintenance of closure records ----------→ Do not complete item C.2. below.

☐ YES----------→ Report release to DEP within 2 hours ----------→ Describe contamination observed and likely source(s) tank, piping, dispenser, spills, overfills):

_____

_____

----------→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES --------→ Remove or remediate contaminated soil --------→ Conduct confirmatory sampling-------→ See end of this section for options on submission and maintenance of closure records -------→ Call Indemnification Fund (717-787-0763).

☐ NO----------→ Continue interim remedial actions ----------→ See end of this section for options on submission and maintenance of closure records ----------→ Call Indemnification Fund (717-787-0763).

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----------→ Conduct confirmatory sampling ----------→ See end of this section for options on submission and maintenance of closure records.

☐ YES----------→ Report release to DEP within 2 hours ----------→ Describe contamination observed and likely source(s) tank, piping, dispenser, spills, overfills):

_____

_____

Continue with corrective action ----------→ See end of this section for options on submission and maintenance of closure records ----------→ Call Indemnification Fund (717-787-0763).

E. If the answer to C.1. is "no", the answer to C.2. if "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the UST system out of service;
(b) By the current owners and operators of the UST system site; or
(c) By mailing these records to the implementing agency if they cannot be maintained at the closed facility.

At least one option must be chosen. If option (c) is chosen, the closure report form should be sent to the DEP regional office responsible for the county in which the tank is located.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the CAP regulation requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Vincent J. Williams, hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating
(Print Name)
to unsworn falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment

March 17, 2003
Date

Senior Scientist / Project Manager
Title of Person Performing Site Assessment

E.A. Engineering, Science & Technology
Name of Company Performing Site Assessment

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

UNDERGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

Sample/Analysis Information (Attachment for Section III.)

Facility ID Number 51 - 40712

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
1350012703	Benzene	5035/8260B	E	Soil	ND	39 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1350012703	Ethylbenzene	5035/8260B	E	Soil	ND	78 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1350012703	Isopropylbenzene	5035/8260B	E	Soil	ND	78 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1350012703	Toluene	8270C		Soil	ND	78 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1350012703	Fluorene	8270C		Soil	ND	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1350012703	Naphthalene	8270C		Soil	ND	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1350012703	Phenanthrene	8270C		Soil	ND	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1355012703	Benzene	5035/8260B		Soil	ND	50 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1355012703	Ethylbenzene	5035/8260B		Soil	ND	100 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1355012703	Isopropylbenzene	5035/8260B	E	Soil	ND	100 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1355012703	Toluene	5035/8260B	E	Soil	ND	100 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1355012703	Fluorene	8270C		Soil	1300 (ug/kg)	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1355012703	Naphthalene	8270C		Soil	2200 (ug/kg)	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1355012703	Phenanthrene	8270C		Soil	19000 (ug/kg)	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1405012703	Benzene	5035/8260B	E	Soil	ND	50 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1405012703	Ethylbenzene	5035/8260B	E	Soil	ND	100 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1405012703	Isopropylbenzne	5035-8260B	E	Soil	ND	100 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003

Facility ID Number 51 - 40712

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
1405012703	Toluene	8270C		Soil	ND	100 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1405012703	Fluorene	8270C		Soil	ND	50 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1405012703	Naphthalene	8270C		Soil	ND	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1405012703	Phenanthrene	8270C		Soil	1100 (ug/kg)	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1410012703	Benzene	5035/8260B	E	Soil	ND	50 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1410012703	Ethylbenzene	5035/8260B	E	Soil	ND	100 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1410012703	Isopropylbenzene	5035/8260B	E	Soil	ND	100 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1410012703	Toluene	5035/8260B	E	Soil	ND	100 (ug/kg)	01 / 27 / 2003	01 / 29 / 2003
1410012703	Fluorene	8270C		Soil	ND	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1410012703	Naphthalene	8270C		Soil	ND	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
1410012703	Phenanthrene	8270C		Soil	390 (ug/kg)	100 (ug/kg)	01 / 27 / 2003	02 / 05 / 2003
							/ /	/ /
							/ /	/ /
							/ /	/ /
							/ /	/ /
							/ /	/ /
							/ /	/ /
							/ /	/ /

[1] Where EPA Method 5035 is required, indicate sample collection option in the right hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.
N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large scale map of the site where tanks were closed. Scales between 1" = 10 and 1" = 100 feet frequently work out well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tanks removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: 51 - 40712

County: Philadelphia

Township/Borough: City of Philadelphia

* SEE ATTACHMENT A *

ATTACHMENT A

SITE FIGURES

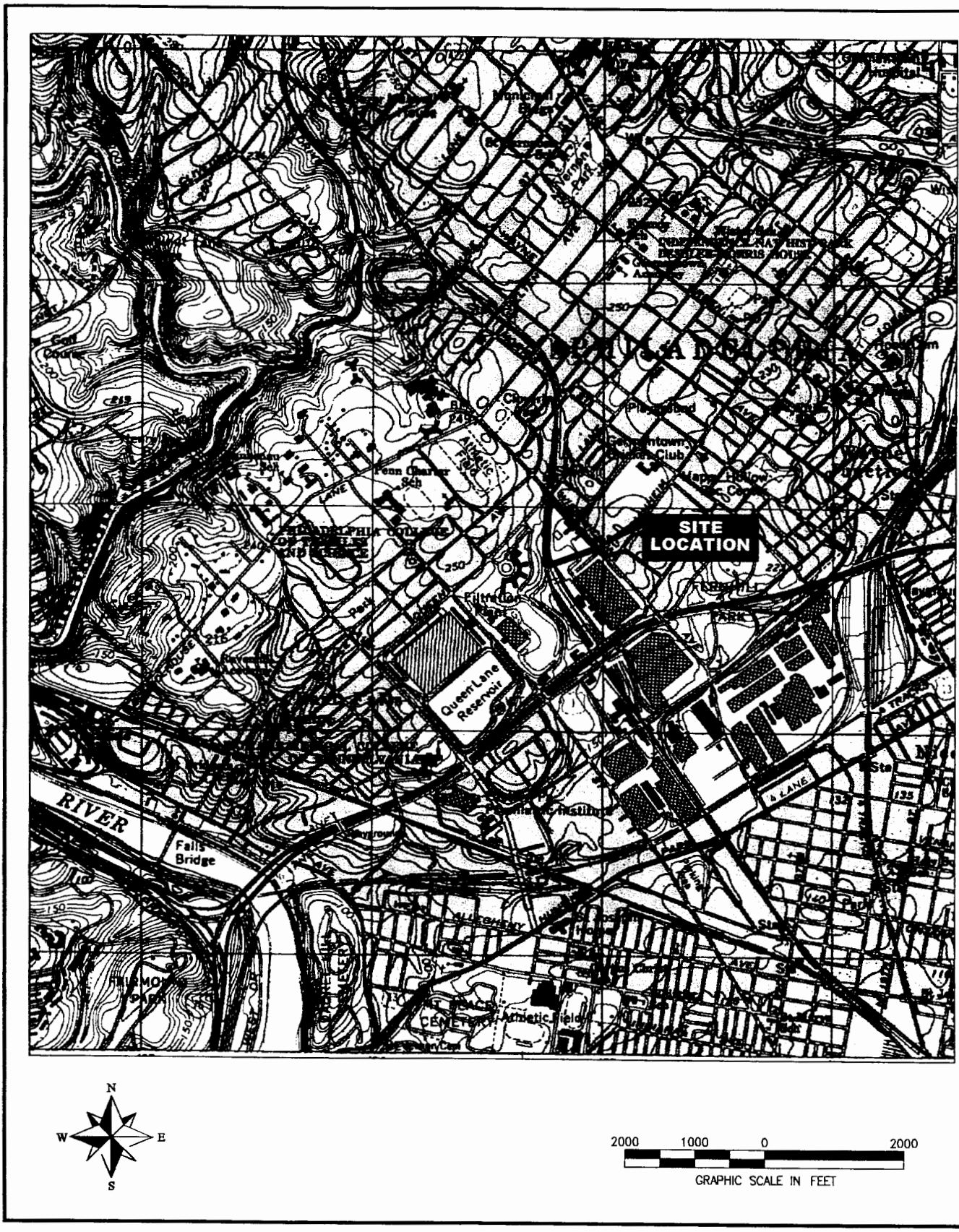


Figure 1. Site Location Map United States Army Reserve Center
Germantown Philadelphia, Pennsylvania

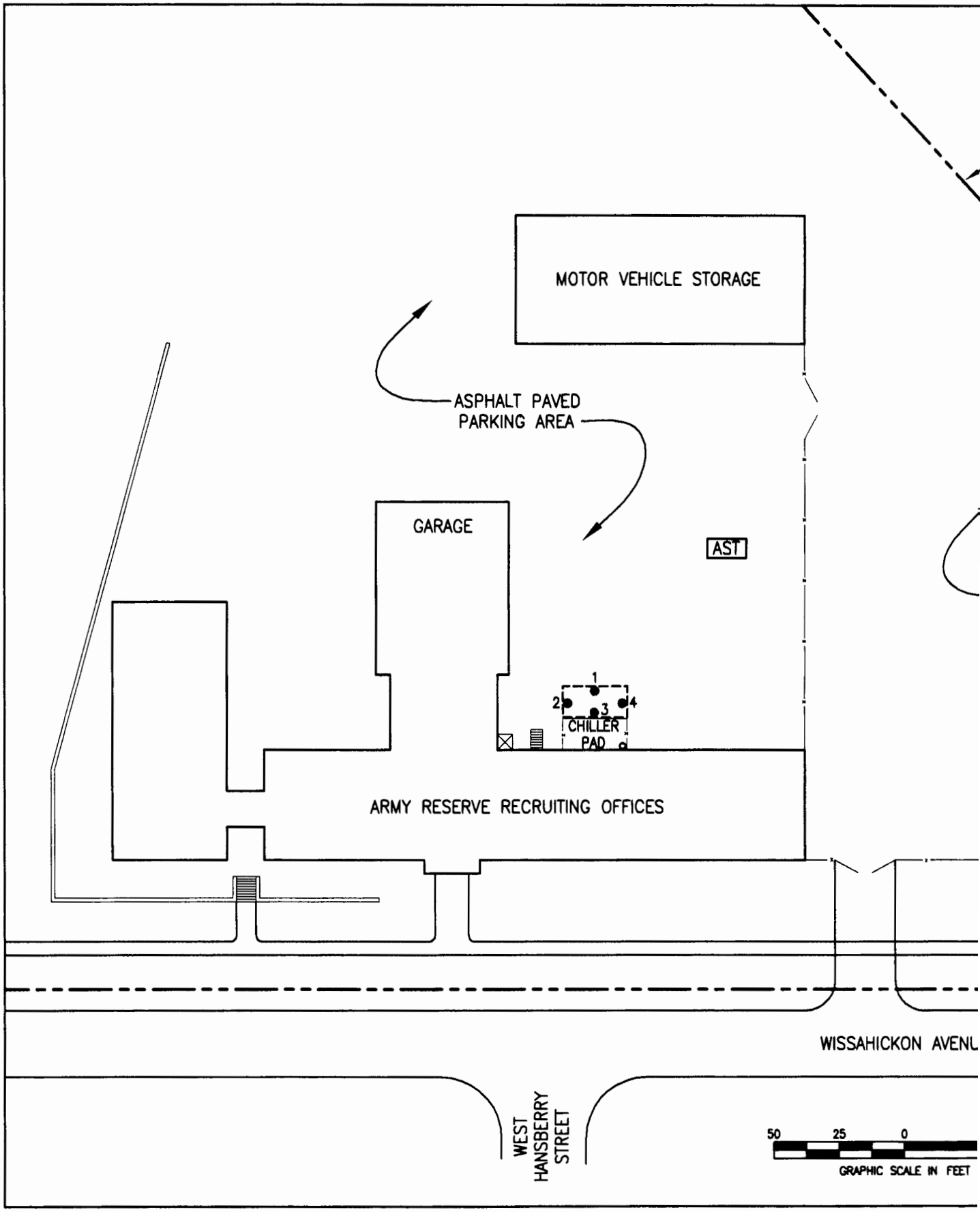
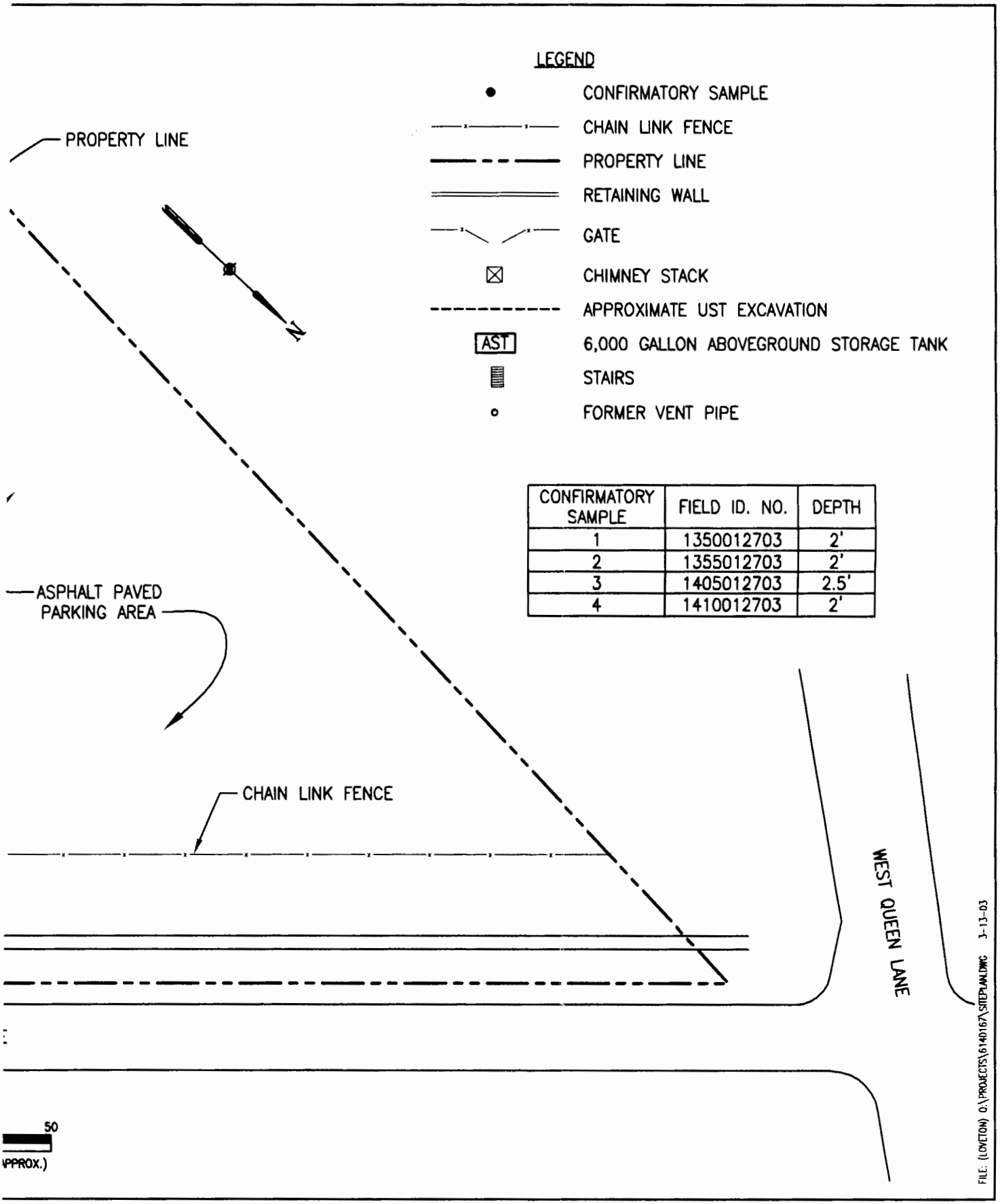


Figure 1.
UNITED STATES ARMY RESERVE CENTER
PHILADELPHIA, PEN



CONFIRMATORY SAMPLE	FIELD ID. NO.	DEPTH
1	1350012703	2'
2	1355012703	2'
3	1405012703	2.5'
4	1410012703	2'

ITE PLAN
ERMANTOWN – FACILITY ID. 51-40712
SYLVANIA 19144

ATTACHMENT B

PHOTOGRAPH LOG

PHOTOGRAPH LOG
USARC GERMANTOWN – UST CLOSURE

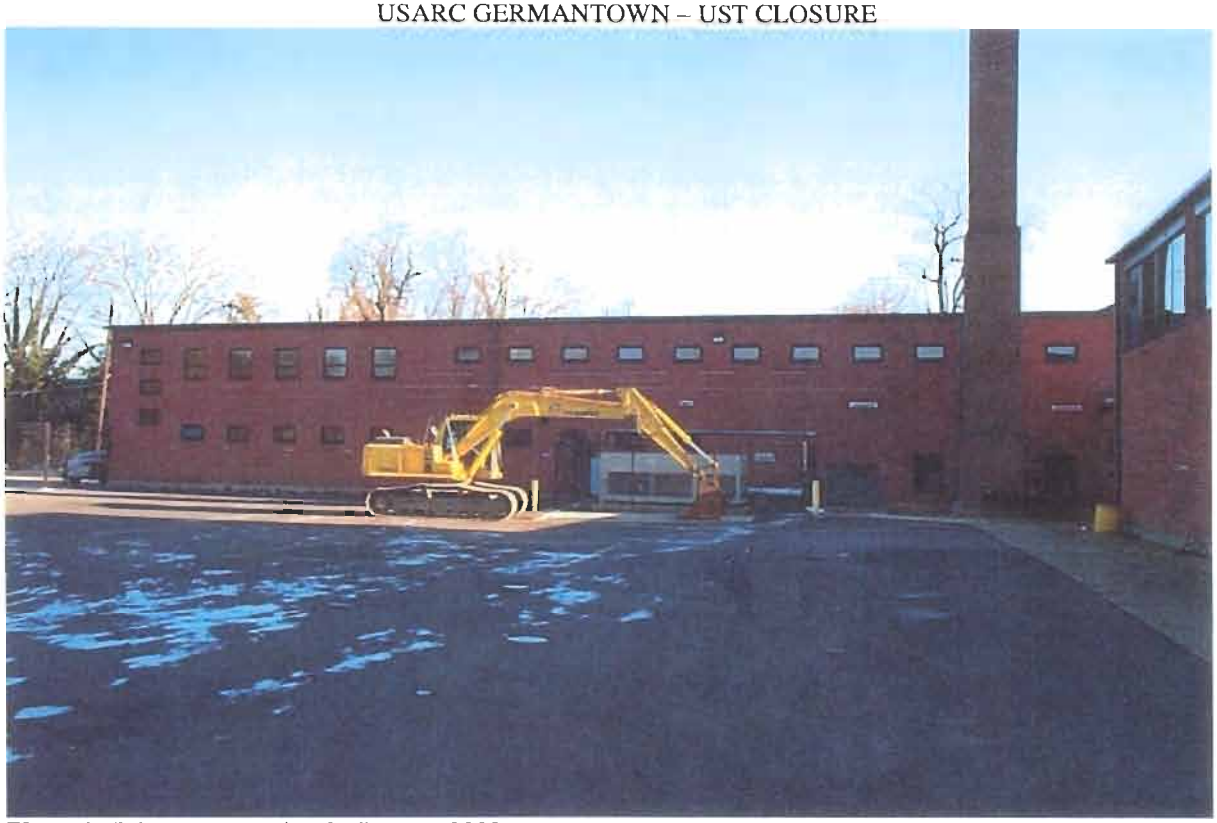


Photo 1. Prior to excavation 27 January 2003.

Photo 2. Uncovered UST and piping 27 January 2003.

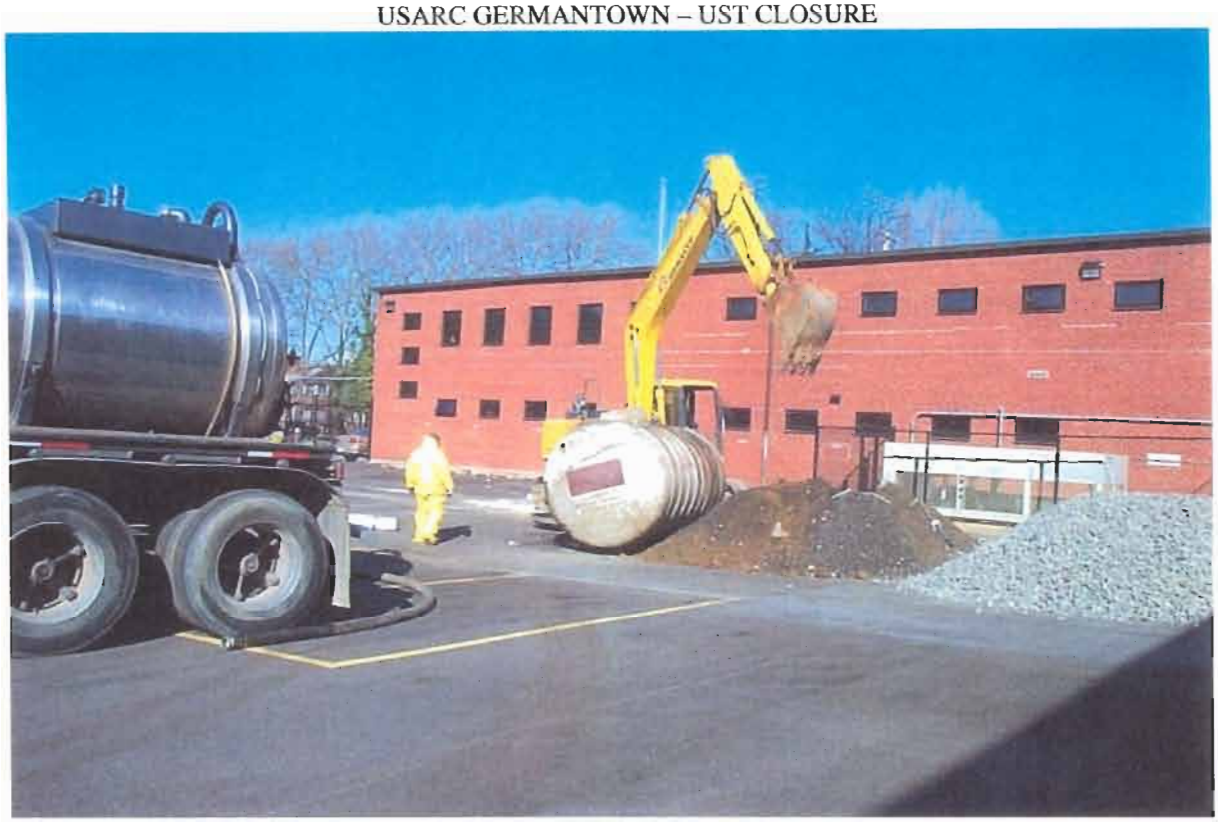


Photo 3. UST after excavation; soil staging 27 January 2003.

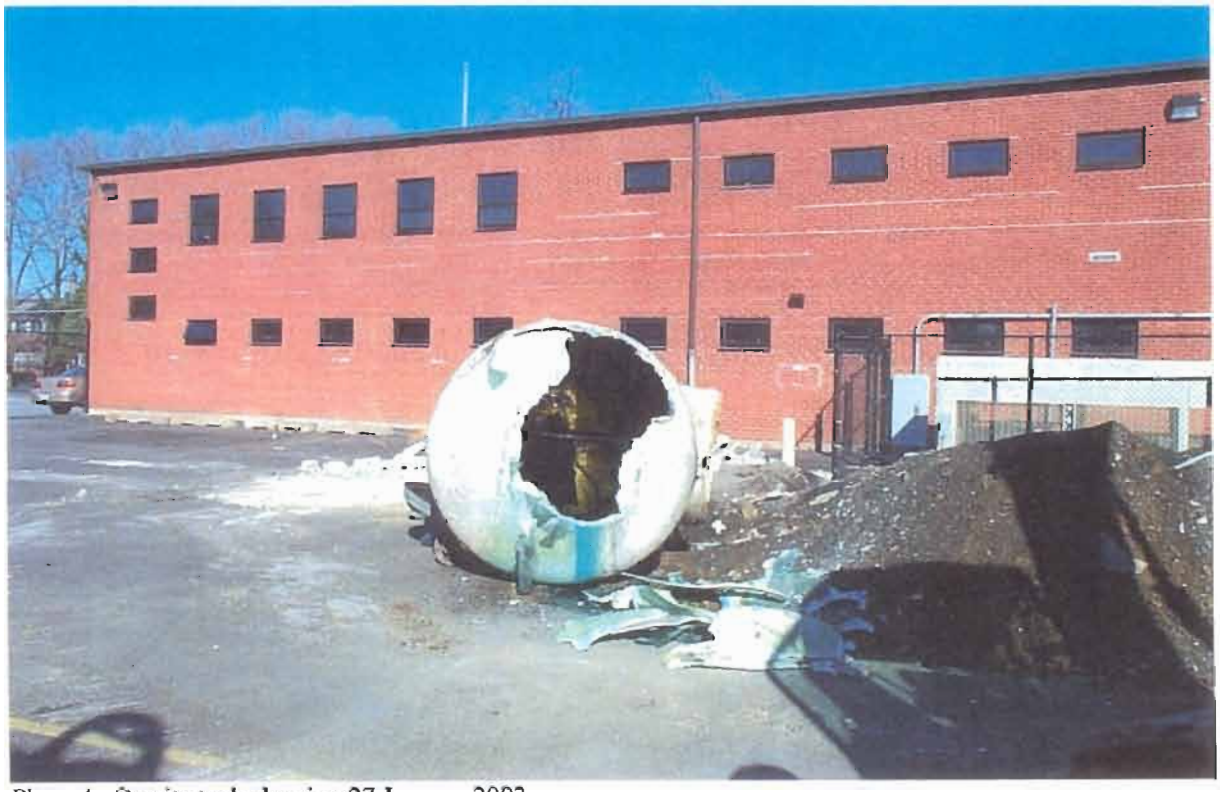


Photo 4. On-site tank cleaning 27 January 2003.

Photo 5. Tank disposal in progress 28 January 2003.

Photo 6. Site restoration 28 January 2003.

ATTACHMENT C

LABORATORY RESULTS

GLA LABORATORIES
1008 W. Ninth Avenue • King of Prussia, Pennsylvania 19406 (610) 337-9992 FAX (610) 337-9939

05 February 2003

EA Engineering, Science & Technology, Inc.

George Knight
15 Loveton Circle
Sparks, MD 21152

RE: 5200 Wissahickon

Enclosed are the results of analyses for samples received by the laboratory on 01/27/03 15:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Speck
Project Manager

GLA LABORATORIES

1008 W. Ninth Avenue • King of Prussia, Pennsylvania 19406 (610) 337-9992 FAX (610) 337-9939

EA Engineering, Science & Technology, Inc.	Project: 5200 Wissahickon	
15 Loveton Circle	Project Number: NA	**Reported:**
Sparks MD, 21152	Project Manager: George Knight	02/05/03 16:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1350012703	K301493-01	Soil	01/27/03 13:50	01/27/03 15:55
1355012703	K301493-02	Soil	01/27/03 13:55	01/27/03 15:55
1405012703	K301493-03	Soil	01/27/03 14:05	01/27/03 15:55
1410012703	K301493-04	Soil	01/27/03 14:10	01/27/03 15:55

GLA Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andrea Speck, Project Manager

GLA LABORATORIES

1008 W. Ninth Avenue • King of Prussia, Pennsylvania 19406 (610) 337-9992 FAX (610) 337-9939

EA Engineering, Science & Technology, Inc.	Project: 5200 Wissahickon	
15 Loveton Circle	Project Number: NA	**Reported:**
Sparks MD, 21152	Project Manager: George Knight	02/05/03 16:50

1350012703

K301493-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GLA Laboratories									
Volatile Organic Compounds by EPA Method 5035/8260B									
Benzene	ND	39	ug/kg dry	50	3012812	01/28/03	01/29/03	EPA 5035/8260B	
Ethylbenzene	ND	78	"	"	"	"	"	"	
Isopropylbenzene	ND	78	"	"	"	"	"	"	
Toluene	ND	78	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*	*77.2-128*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*105 %*	*60-140*		"	"	"	"	
Surrogate: Toluene-d8		*95.8 %*	*60-140*		"	"	"	"	
Semivolatile Organic Compounds by EPA Method 8270C									
Fluorene	ND	100	ug/kg dry	1	3020315	02/04/03	02/05/03	EPA 8270C	
Naphthalene	ND	100	"	"	"	"	"	"	
Phenanthrene	ND	100	"	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		*74.3 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*70.3 %*	*30-115*		"	"	"	"	
Surrogate: Terphenyl-d14		*78.7 %*	*18-137*		"	"	"	"	
Physical Parameters by APHA/ASTM/EPA Methods									
% Solids	**82.3**	0.01	% by Weight	1	3013106	01/31/03	01/31/03	EPA 160.3	

GLA Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andrea Speck, Project Manager

GLA LABORATORIES
1008 W. Ninth Avenue • King of Prussia, Pennsylvania 19406 (610) 337-9992 FAX (610) 337-9939

EA Engineering, Science & Technology, Inc.	Project: 5200 Wissahickon	
15 Loveton Circle	Project Number: NA	**Reported:**
Sparks MD, 21152	Project Manager: George Knight	02/05/03 16:50

1355012703

K301493-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GLA Laboratories									
Volatile Organic Compounds by EPA Method 5035/8260B									
Benzene	ND	50	ug/kg dry	50	3012812	01/28/03	01/29/03	EPA 5035/8260B	
Ethylbenzene	ND	100	"	"	"	"	"	"	
Isopropylbenzene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*	*77.2-128*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*60-140*		"	"	"	"	
Surrogate: Toluene-d8		*95.7 %*	*60-140*		"	"	"	"	
Semivolatile Organic Compounds by EPA Method 8270C									**DILN**
Fluorene	**1300**	1000	ug/kg dry	10	3020315	02/04/03	02/05/03	EPA 8270C	
Naphthalene	**2200**	1000	"	"	"	"	"	"	
Phenanthrene	**19000**	1000	"	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		*72.7 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*88.3 %*	*30-115*		"	"	"	"	
Surrogate: Terphenyl-d14		*78.0 %*	*18-137*		"	"	"	"	
Physical Parameters by APHA/ASTM/EPA Methods									
% Solids	**80.1**	0.01	% by Weight	1	3013106	01/31/03	01/31/03	EPA 160.3	

GLA Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety

Andrea Speck, Project Manager

GLA LABORATORIES
1008 W. Ninth Avenue • King of Prussia, Pennsylvania 19406 (610) 337-9992 FAX (610) 337-9939

EA Engineering, Science & Technology, Inc.	Project: 5200 Wissahickon	
15 Loveton Circle	Project Number: NA	**Reported:**
Sparks MD, 21152	Project Manager: George Knight	02/05/03 16:50

1405012703

K301493-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GLA Laboratories									
Volatile Organic Compounds by EPA Method 5035/8260B									
Benzene	ND	50	ug/kg dry	50	3012812	01/28/03	01/29/03	EPA 5035/8260B	
Ethylbenzene	ND	100	"	"	"	"	"	"	
Isopropylbenzene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*	*77.2-128*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*60-140*		"	"	"	"	
Surrogate: Toluene-d8		*95.0 %*	*60-140*		"	"	"	"	
Semivolatile Organic Compounds by EPA Method 8270C									
Fluorene	ND	100	ug/kg dry	1	3020315	02/04/03	02/05/03	EPA 8270C	
Naphthalene	ND	100	"	"	"	"	"	"	
Phenanthrene	**1100**	100	"	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		*73.0 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*74.5 %*	*30-115*		"	"	"	"	
Surrogate: Terphenyl-d14		*76.5 %*	*18-137*		"	"	"	"	
Physical Parameters by APHA/ASTM/EPA Methods									
% Solids	**83.8**	0.01	% by Weight	1	3013106	01/31/03	01/31/03	EPA 160.3	

Andrea Speck, Project Manager

GLA LABORATORIES

1008 W. Ninth Avenue • King of Prussia, Pennsylvania 19406 (610) 337-9992 FAX (610) 337-9939

EA Engineering, Science & Technology, Inc.	Project: 5200 Wissahickon	
15 Loveton Circle	Project Number: NA	**Reported:**
Sparks MD, 21152	Project Manager: George Knight	02/05/03 16:50

1410012703

K301493-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GLA Laboratories									
Volatile Organic Compounds by EPA Method 5035/8260B									
Benzene	ND	50	ug/kg dry	50	3012812	01/28/03	01/29/03	EPA 5035/8260B	
Ethylbenzene	ND	100	"	"	"	"	"	"	
Isopropylbenzene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*	*77.2-128*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*60-140*		"	"	"	"	
Surrogate: Toluene-d8		*95.5 %*	*60-140*		"	"	"	"	
Semivolatile Organic Compounds by EPA Method 8270C									
Fluorene	ND	100	ug/kg dry	1	3020315	02/04/03	02/05/03	EPA 8270C	
Naphthalene	ND	100	"	"	"	"	"	"	
Phenanthrene	**390**	100	"	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		*68.9 %*	*23-120*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*71.4 %*	*30-115*		"	"	"	"	
Surrogate: Terphenyl-d14		*76.0 %*	*18-137*		"	"	"	"	
Physical Parameters by APHA/ASTM/EPA Methods									
% Solids	**83.3**	0.01	% by Weight	1	3013106	01/31/03	01/31/03	EPA 160.3	

GLA Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andrea Speck, Project Manager

GLA LABORATORIES

1008 W. Ninth Avenue • King of Prussia, Pennsylvania 19406 (610) 337-9992 FAX (610) 337-9939

EA Engineering, Science & Technology, Inc.	Project: 5200 Wissahickon	
15 Loveton Circle	Project Number: NA	Reported:
Sparks MD, 21152	Project Manager: George Knight	02/05/03 16:50

Notes and Definitions

DILN	Due to matrix interference and or sample dilution the detection limits for this sample have been elevated.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

WORK ORDER

Printed: 1/28/2003 9:21:41AM

K301493

GLA Laboratories

Client: EA Engineering, Science & Technology, Inc.	**Project Manager:** Andrea Speck
Project: 5200 Wissahickon	**Project Number:** NA

Report To:
EA Engineering, Science & Technology, Inc.
George Knight
15 Loveton Circle
Sparks, MD 21152
Phone: 410-771-4950
Fax: 410-771-4204

Invoice To:
EA Engineering, Science & Technology, Inc.
George Knight
15 Loveton Circle
Sparks, MD 21152
Phone :410-771-4950
Fax: 410-771-4204

Date Due:	02/03/03 16:00 (5 day TAT)		
Received By:	Oswaldo Burgos	Date Received:	01/27/03 15:55
Logged In By:	Jake Zanck	Date Logged In:	01/28/03 09:18

Samples Received at: 0°C
Custody Seals No Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confi Yes

Encores were preserved at Log-In 1/27/03 OB.

Analysis	Due	TAT	Expires	Comments
K301493-01 1350012703 [Soil] Sampled 01/27/03 13:50 Eastern				
PADEP Fuel Oil #1,2	02/03/03 12:00	5	02/10/03 13:50	
Solids, Dry Weight	02/03/03 12:00	5	02/26/03 13:50	
K301493-02 1355012703 [Soil] Sampled 01/27/03 13:55 Eastern				
PADEP Fuel Oil #1,2	02/03/03 12:00	5	02/10/03 13:55	
Solids, Dry Weight	02/03/03 12:00	5	02/26/03 13:55	
K301493-03 1405012703 [Soil] Sampled 01/27/03 14:05 Eastern				
PADEP Fuel Oil #1,2	02/03/03 12:00	5	02/10/03 14:05	
Solids, Dry Weight	02/03/03 12:00	5	02/26/03 14:05	
K301493-04 1410012703 [Soil] Sampled 01/27/03 14:10 Eastern				
PADEP Fuel Oil #1,2	02/03/03 12:00	5	02/10/03 14:10	
Solids, Dry Weight	02/03/03 12:00	5	02/26/03 14:10	

Analysis groups included in this work order

PADEP Fuel Oil #1,2

8260 PADEP FO12MO 8270 PADEP FO12

Reviewed By

1-28-03
Date

GLA ENVIRONMENTAL

Client: EA Engineering	Bill To: George Knight	TAT: (Standard) 5 DAY 4 DAY 3 DAY 2 DAY 1 DAY 24 HRS.	
Address: 15 Loveton Circle	Address: same	DATE RESULTS NEEDED:	
Sparks, MD 21152		TEMPERATURE UPON RECEIPT: 0°	
Report to: George Knight Phone #: 410 771-4950 Fax #: 410 771-4204	State & Program: PA DEP UST Phone #: ( ) Fax #: ( )	SHIPPING #:	
Project: 5200 Wissahickon			
Sampler: V. Miller			
PO/Quote #:			

FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	# of Bottles Preservative Used: MeOH	NaHSO4	HCl	HNO3	H2SO4	NaOH	NONE	TOTAL # OF BOTTLES	PADEP No. 2 Fuel Oil parameters	SAMPLE CONTROL: CRACKED/BROKEN	IMPROPERLY SEALED	GOOD CONDITION	LABORATORY ID NUMBER
1 1350012703 west wall PID: 0	1-27-03	1350	SO							2	2	X				A 61471-1
2 1355012703 south wall PID: 0	1-27-03	1355	SO							2	2	X				-2
3 1405012703 east wall PID: 0	1-27-03	1405	SO							2	2	X				-3
4 1410012703 north wall PID: 0	1-27-03	1410	SO							2	2	X				-4
5 PID:																
6 PID:																
7 PID:																
8 PID:																
9 PID:																
10 PID:																

RELINQUISHED	RECEIVED	RELINQUISHED	RECEIVED
V. Miller 1/27/03 3:55pm	C. Burgo 1/27/03 0555		
RELINQUISHED	RECEIVED	RELINQUISHED	RECEIVED

COMMENTS: 1 jar & 1 encore for each sample.

Received at lab on Ice 1/28/03

PAGE OF

ATTACHMENT D

DISPOSAL DOCUMENTATION

01903

Service Disposal of Delaware, Inc.

Specializing in Prompt, Reliable Roll-off Services

P.O. BOX 661, NEW CASTLE, DE 19720-9996
(302) 326-9155 FAX (302) 658-9652

cct #: Nesber Environmental
ervice: 5200 Wissahickon Ave
Phila Pa

Date: 1/27/03
Req. By: Mark
Phone:

lap:
oute:
.ver:

Desc.:
Action: Del 30

Waste
Type: C/D MSW Recycle Other

.x# Out:
ox# In: 353

ISTOMER SIGNATURE: DATE/TIME

RIVER COMMENTS:
old Exit 34 / Del 30 wait to be loaded & takeaway to Dump @ Girard Point

ECIAL INSTRUCTIONS:
Fiberglass tank

MONARCH ENVIROMENTAL, INC.

108 East Lake Road
Woodstown, NJ 08098
856-769-9022

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of the Bill of Lading

at 1/27 20 03 Client:

the property described below, in apparent good order, except as noted (Contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions and hereby agree to by the shipper and accepted for himself and his assigns.

To: INTERNATIONAL PETROLEUM	Generator: GRMA Tank USArmy Oil
Address 505 South Market St	Site Address: 5200 W. Spaldon Ave
Wilmington DE 19801	Municipality: Philadelphia PA
Phone #	Phone #

QTY.	Rate Gallons	Kind of Package, Description of Articles, (If Hazardous Materials) Proper Shipping Name	*WEIGHT (Subject to Correction)
1,351	Gallon	Combustible Liq. N.O.S. (D.L.) NA 1993 PG III ERG 128	

Transporter Information: MD4533-000-02 Placards Required: Placards Supplied ☑ yes ☐ no ☑ furnished by Carrier

Truck No. VAC TRUCK 01	Generator Signature:
Transporter's Name **Monarch Environmental, Inc.**	
Address **108 East Lake Road, Woodstown NJ 08098**	Facility:
Emergency Response Phone No. **856-769-9022**	Received by:
Driver's Name George Mendoza	

SHORT FORM B/L

Legend: White-Trucking Co., Canary-Trucking Co., Pink-Land Fill, Gold-Generator

MONARCH ENVIROMENTAL, INC.

108 East Lake Road
Woodstown, NJ 08098
856-769-9022

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of the Bill of Lading

at July 27 20[illegible] Client: [illegible]

the property described below, in apparent good order, except as noted (Contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions and hereby agree to by the shipper and accepted for himself and his assigns.

To: T. P. C

Address 505 S. Main ST

Lexington DE 19501

Phone # 302 227 2511

Generator: Columbus U.S. Army Depot

Site Address: 5200 Wilson Blvd

Municipality: Philadelphia PA

Phone #

QTY.	Rate Gallons	Kind of Package, Description of Articles, (If Hazardous Materials) Proper Shipping Name	*WEIGHT (Subject to Correction)
1325	gal	Combustible liquid	
		N.O.S NA 1993 PG III ERG # 128	
		5330201	

Transporter Information: Placards Required: Placards Supplied ☐ yes ☐ no ☐ furnished by Carrier

Truck No. T130 07102

Transporter's Name **Monarch Environmental, Inc.**

Address **108 East Lake Road, Woodstown NJ 08098**

Emergency Response Phone No. **856-769-9022**

Driver's Name [illegible]

Generator Signature: X

Facility:

Received by:

SHORT FORM B/L

Legend: White-Trucking Co., Canary-Trucking Co., Pink-Land Fill, Gold-Generator

Hanson

Hanson Aggregates Pennsylvania, Inc.
P.O. Box 231
Easton, PA 18044-0231

2

TICKET NO. 212218

GROSS WEIGHT ACKNOWLEDGED — SEE PRODUCT IDENTIFICATION REVERSE
TRUCKERS SIGNATURE

BUYER AGREES TO PAY ALL COSTS OF COLLECTIONS FOR THIS TICKET, INCLUDING ANY REASONABLE ATTORNEYS' FEES.

HANSON AGGREGATES 302
P O BOX 75
FORGE ROAD
GLEN MILLS, PA 19342
610-358-3136
6:30AM - 2:45 PM

RECEIVERS INITIALS

*CURB DELIVERY ONLY. NOT RESPONSIBLE FOR ANY DAMAGE BEYOND CURB.

CUSTOMER NUMBER	SALES ORDER NUMBER	PRODUCT NO. DESCRIPTION
00359806	00040259	4358
DATE 01/28/03	TIME 11:16	#3 JOB/ITEM #

SOLD TO : D & J CAPPELLI INC
S.O. DESC : PHILA AS 18 ST PP
S.O. INFO :
JOB LOC. : 5200 WISSAHICKON — LOAD # 001

WEIGHTS

	LBS	KILO
GROSS	43400 *	
TARE	23400	
NET	20000	
TONS	10.00	

TONS TODAY 10.00
TONS TO DATE 10.00
TONNES TODAY
TONNES TO DATE

✓ CASH SALE ONLY ✓

MATERIAL
TAX
HAUL — PER TONS
TOTAL — PER TONS

TRUCKING INFO.
✓ HAUL / TRUCK NUMBER ✓
00431011/76
HAULER NAME : L AMOS
TRUCK NAME : AMOS, LEW
MGW : 058400

WEIGHTMASTER LICENSE NUMBER
TICKET NO. 212218
WEIGHTMASTER SIGNATURE ▶ TOM LOCKE

A 1 OPP ✓ EME M/P

Hanson

Hanson Aggregates Pennsylvania, Inc.
P.O. Box 231
Easton, PA 18044-0231

2

TICKET NO. 212141

GROSS WEIGHT ACKNOWLEDGED — SEE PRODUCT WARNING ON REVERSE
TRUCKERS SIGNATURE

BUYER AGREES TO PAY ALL COSTS OF COLLECTIONS FOR THIS TICKET, INCLUDING ANY REASONABLE ATTORNEYS' FEES.

HANSON AGGREGATES 302
P O BOX 75
FORGE ROAD
GLEN MILLS, PA 19342
610-358-3136
6:30AM - 2:45 PM

RECEIVERS INITIALS

*CURB DELIVERY ONLY. NOT RESPONSIBLE FOR ANY DAMAGE BEYOND CURB.

CUSTOMER NUMBER	SALES ORDER NUMBER	PRODUCT NO. DESCRIPTION
00359806	00040254	4358
DATE 01/27/03	TIME 11:26	#3 JOB/ITEM #

SOLD TO :
S.O. DESC : D & J CAPPELLI INC
S.O. INFO : PHILA ST PP
JOB LOC. : 5200 WISSAHICKON AVE — LOAD # 001

WEIGHTS

	LBS	KILO
GROSS	57200 *	
TARE	23400	
NET	33800	
TONS	16.90	

TONS TODAY 16.90
TONS TO DATE 16.90
TONNES TODAY
TONNES TO DATE

✓ CASH SALE ONLY ✓

MATERIAL
TAX
HAUL — PER TONS
TOTAL — PER TONS

TRUCKING INFO.
✓ HAUL / TRUCK NUMBER ✓
00431011/76
HAULER NAME : L AMOS
TRUCK NAME : AMOS, LEW
MGW : 058400

WEIGHTMASTER LICENSE NUMBER
TICKET NO. 212141
WEIGHTMASTER SIGNATURE : TOM LOCKE

AN EQ PORTU LOYE

OPERATION PERMIT

CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
FIRE UNIT

PERMIT NUMBER 69593

LOCATION OF TEST
5200 WISSAHICKON AVE

DESCRIPTION OF INSTALLATION
REMOVE ONE (1) 5,000 GAL. HEATING OIL UST

OWNER'S NAME AND ADDRESS
U.S. ARMY
5200 WISSAHICKON AVE
PHILA. PA.

TEST DATE	INSTALLER'S LICENSE NUMBER
	000019
ZONING APPROVAL NUMBER	COMPANY BUSINESS PRIVILEGE LICENSE NUMBER
	125906
PLAN NUMBER	TYPE OCCUPANCY
	ARMY COMPOUND
DATE PERMIT ISSUED	CODE OFFICIAL
1-13-03	QPC

TYPE OF PERMIT	FUND	DEPT./DIV.	SOURCE	FEE
FIREWORKS DISPLAY	01	260020	3308	$
AIR POLLUTION CONTROL	01	260020	3201	$
SPRINKLER SYSTEM TEST	01	260020	3627	$
TANK & DISPENSING SYSTEM TEST	01	260020	3628	$
TANK INSTALLATION	01	260020	3363	$
WELDING OR CUTTING	01	260020	3333	$
REMOVAL/INERT	01	260020	3393	$ 75.00
ALTERATION	01	260020	3392	$
USE OF EXPLOSIVES	01	260020	3321	$
TRANSPORTATION OF EXPLOSIVES (LESS THAN 1,000 LBS.)	01	260020	3323	$
OIL BURNER	01	260020	3365	$
TENTS	01	260020	3385	$

INSTALLER'S NAME & BUSINESS ADDRESS
JACK ANDERSON
NEUBER ENVIRONMENTAL
42 RIDGE AVE.
PHOENIXVILLE PA. 19460

ADDITIONAL PERMITS NEEDED:

CERTIFICATION NUMBER

TELEPHONE NUMBER
(610) 933-4332

81-237 (Rev. 3/97)

THIS PERMIT NOT VALID UNLESS RECEIPTED BELOW BY DEPARTMENT OF REVENUE

APPLICANT'S SIGNATURE

OFFICIAL BUSINESS

X

* * * * * ATTENTION - STORAGE TANK OWNER * * * * *
CONVERSION INVOICE

PLEASE REFER TO THE JULY 1992 LETTER WITH ENCLOSED CHECKLISTS AND CHARTS DESCRIBING THE CONVERSION INVOICE.

TO REGISTER:

1. RETURN CHECK FOR ONLY THE AMOUNT INVOICED. FACILITIES WITH NUMEROUS TANKS WILL RECEIVE SEVERAL PAGES MAILED SEPERATELY. BE SURE TO PAY THE AMOUNT INDICATED ON THE FINAL PAGE.
2. TO INSURE PROPER CREDIT, SUBMIT ONE CHECK AND THE INVOICE STUB FROM THE FINAL PAGE OF THE INVOICE FOR EACH FACILITY *** THIS ALSO APPLIES TO OWNERS OF MULTIPLE FACILITIES.
3. IF YOU HAVE ANY QUESTIONS, PLEASE CALL THE CENTRAL OFFICE AT 1-800-428-2657 OR 1-800-42-TANKS.

* * * * PLEASE PAY BY DUE DATE TO ALLOW PROCESSING TIME * * * *

PA DER
DIVISION OF STORAGE TANKS
PO BOX 8762
HARRISBURG PA 17105-8762

INVOICE ID: 0000000757 INVOICE DATE: 07-30-92 CODE:
PAGE: 01 DUE DATE: 08-30-92 CONV92-93

FACILITY ID: 51-40712 Germantown

TANK	INSTALLED	CAPACITY	PRODUCT	EXEMPT/CLOSED
001	01-01-75	12,000	HEATING OIL	

DUE THIS INVOICE - FINAL PAGE $ 10.01

Appendix E

Regulatory Database Search Reports

"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Mary Beth Jacques
CH2M Hill
1569 Stampmill Way
Lawrenceville, GA 30043

Order Date: 7/12/2006 **Completion Date:** 7/13/2006
Inquiry #: 1714247.225S
P.O. #: NA
Site Name: Germantown Veterans Memorial
Address: 5200 WISSAHICKON AVE
City/State: PHILADELPHIA, PA 19144
Cross Streets:

Customer Project: NA
1592163BAS 770-338-1589

Based on client-supplied information, fire insurance maps for the following years were identified

1923 - 1 Map
1950 - 1 Map
1976 - 1 Map
1978 - 1 Map
1989 - 1 Map

Limited Permission to Photocopy Total Maps: 5

USER'S GUIDE

This User's Guide provides guidelines for accessing Sanborn Map® images and for transferring them to your Word Processor.

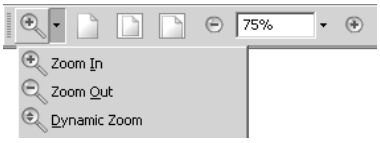
Reading Sanborn Maps

- Sanborn Maps document historical property use by displaying property information through words, abbreviations, and map symbols. The Sanborn Map Key provides information to help interpret the symbols and abbreviations used on Sanborn Maps. The Key is available from EDR's Web Site at: http://www.edrnet.com/reports/samples/key.pdf

Organization of Electronic Sanborn Image File

- Sanborn Map Report, listing years of coverage
- User's Guide
- Oldest Sanborn Map Image
- Most recent Sanborn Map Image

Navigating the Electronic Sanborn Image File

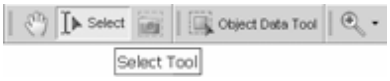


1. Open file on screen.
2. Identify TP (Target Property) on the most recent map.
3. Find TP on older printed images.
4. Using Acrobat® Reader®, zoom to 250% in order to view more clearly. (200-250% is the approximate equivalent scale of hardcopy Sanborn Maps.)
   A. On the menu bar, click "View" and then "Zoom to..."
   B. Or, use the magnifying tool and drag a box around the TP

Printing a Sanborn Map From the Electonic File

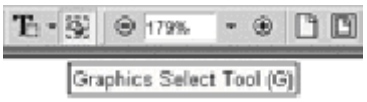
- EDR recommends printing images at 300 dpi (300 dpi prints faster than 600 dpi)
- To print only the TP area, cut and paste from Acrobat to your word processor application.

<u>Acrobat Versions 6 and 7</u>



1. Go to the menu bar
2. Click the "Select Tool"
3. Draw a box around the area selected
4. "Right click" on your mouse
5. Select "Copy Image to Clipboard"
6. Go to Word Processor such as Microsoft Word, paste and print.

<u>Acrobat Version 5</u>



1. Go to the menu bar
2. Click the "Graphics Select Tool"
3. Draw a box around the area selected
4. Go to "Menu"
5. Highlight "Edit"
6. Highlight "Copy"
7. Go to Word Processor such as Microsoft Word, paste and print.

Important Information about Email Delivery of Electronic Sanborn Map Images

- Images are grouped intro one file, up to 2MB.
- In cases where in excess of 6-7 map years are available, the file size typically exceeds 2MB. In these cases, you will receive multiple files, labeled as "1 of 3", "2 of 3", etc. including all available map years.
- Due to file size limitations, certain ISPs, including AOL, may occasionally delay or decline to deliver files. Please contact your ISP to identify their specific file size limitations.

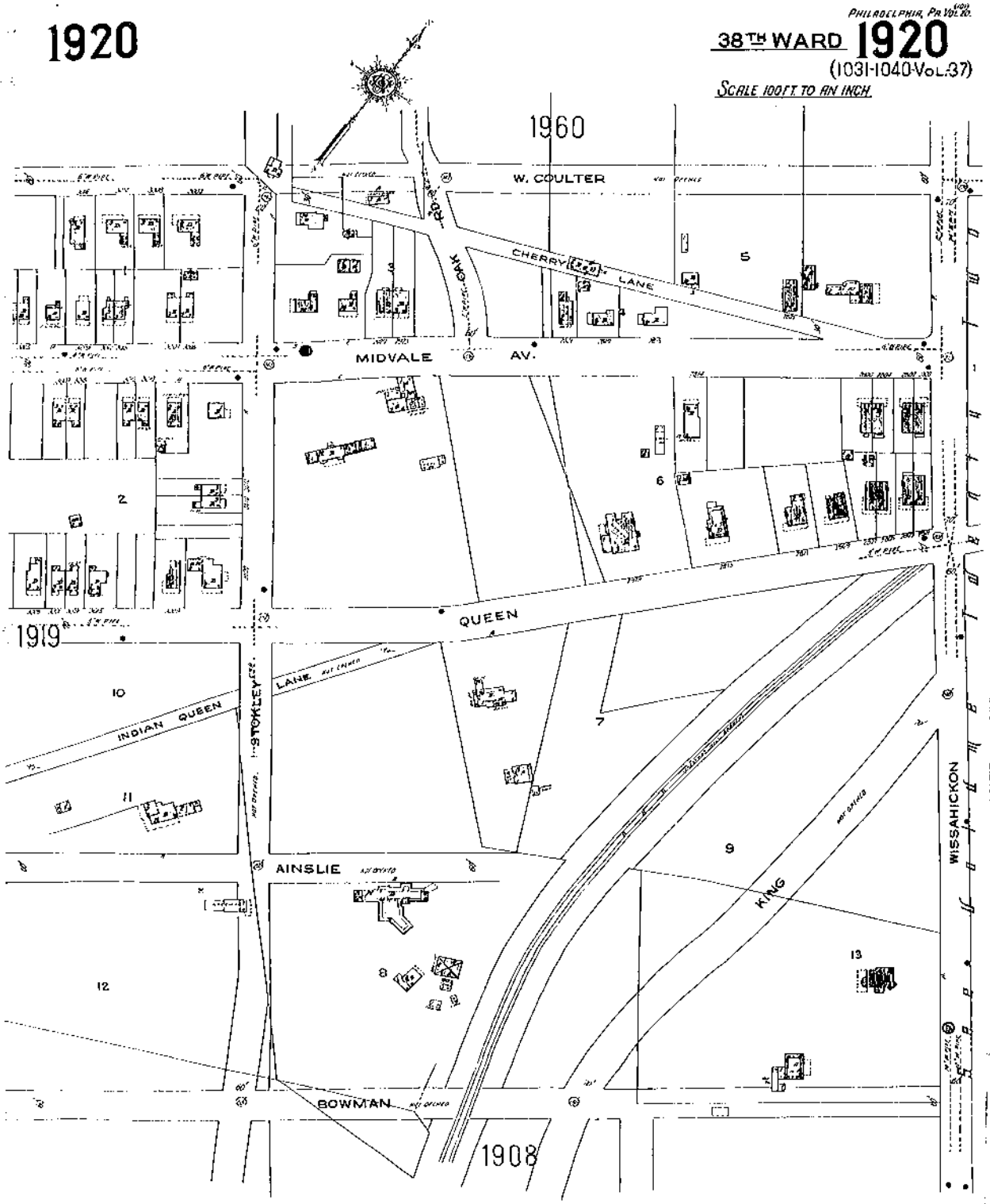
1920

PHILADELPHIA, PA VOL 20.

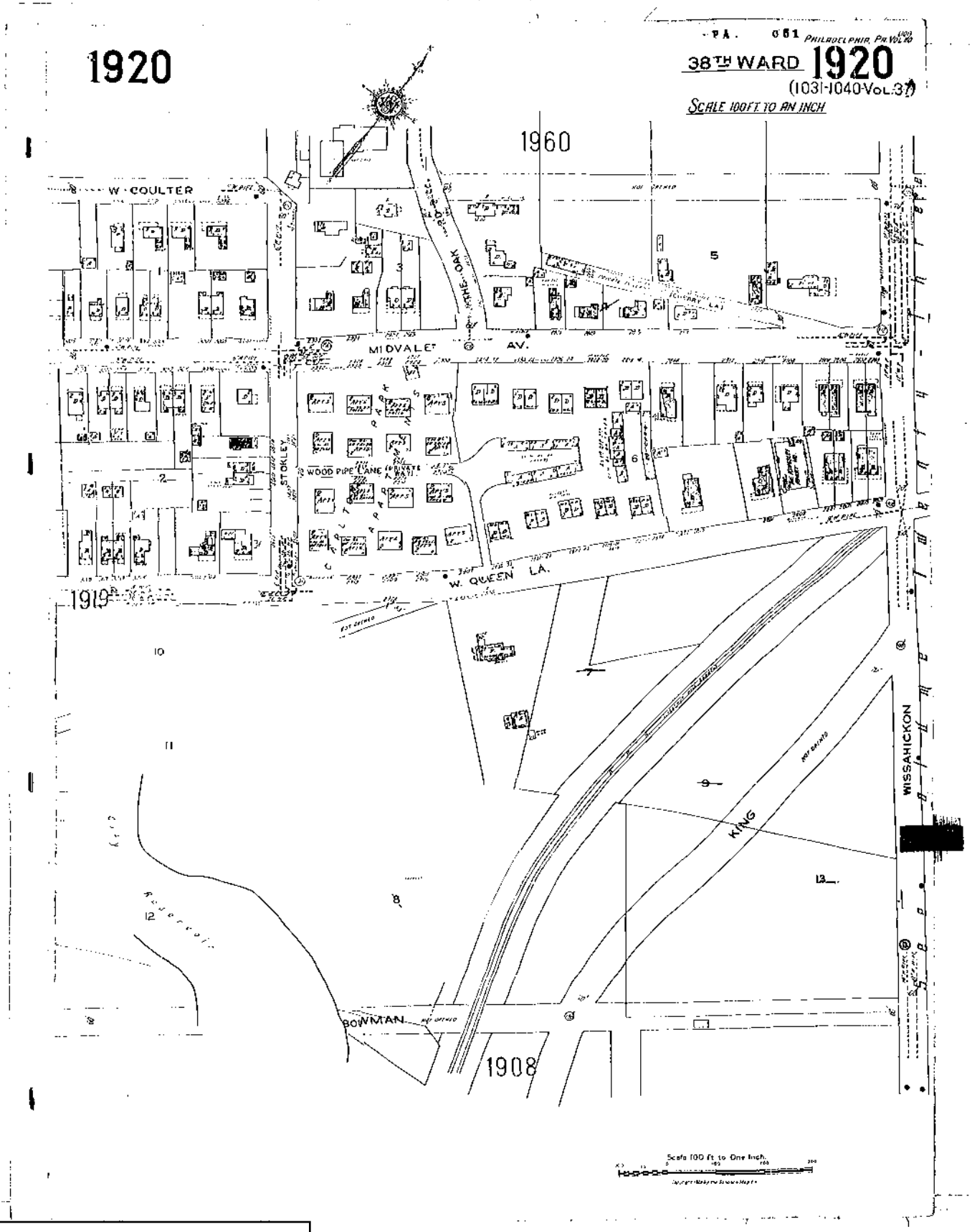
38TH WARD 1920

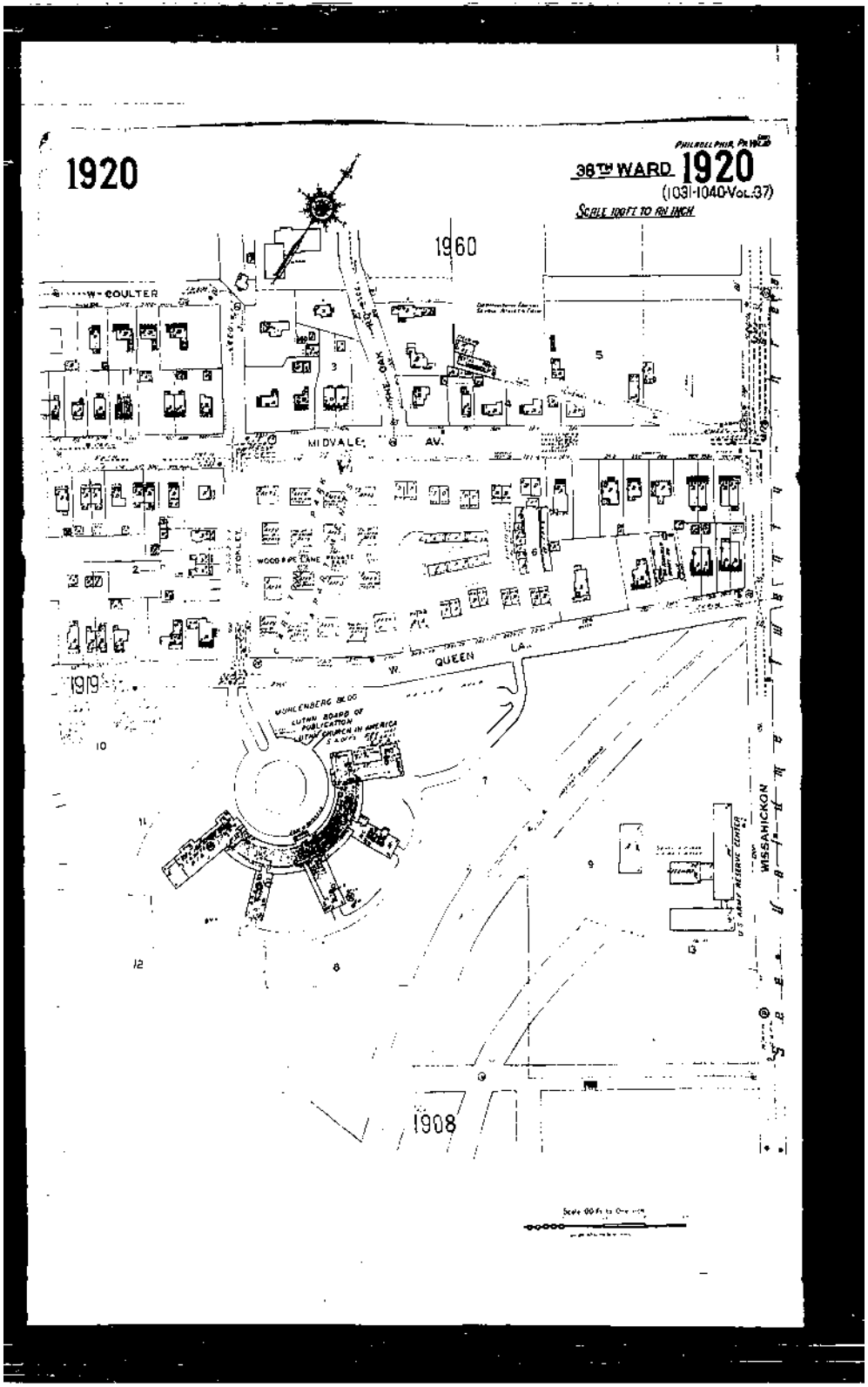
(1031-1040-VOL 37)

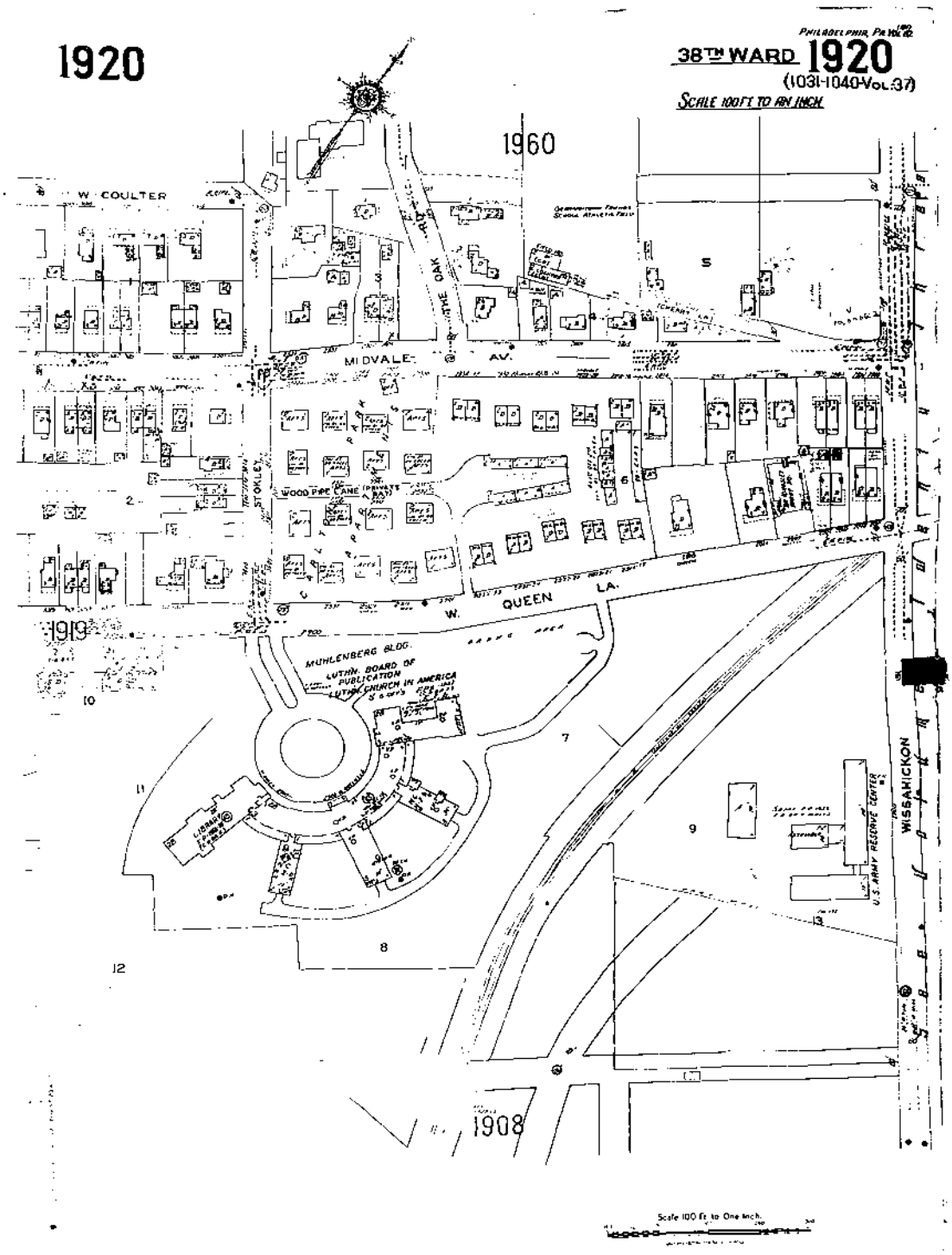
SCALE 100 FT TO AN INCH

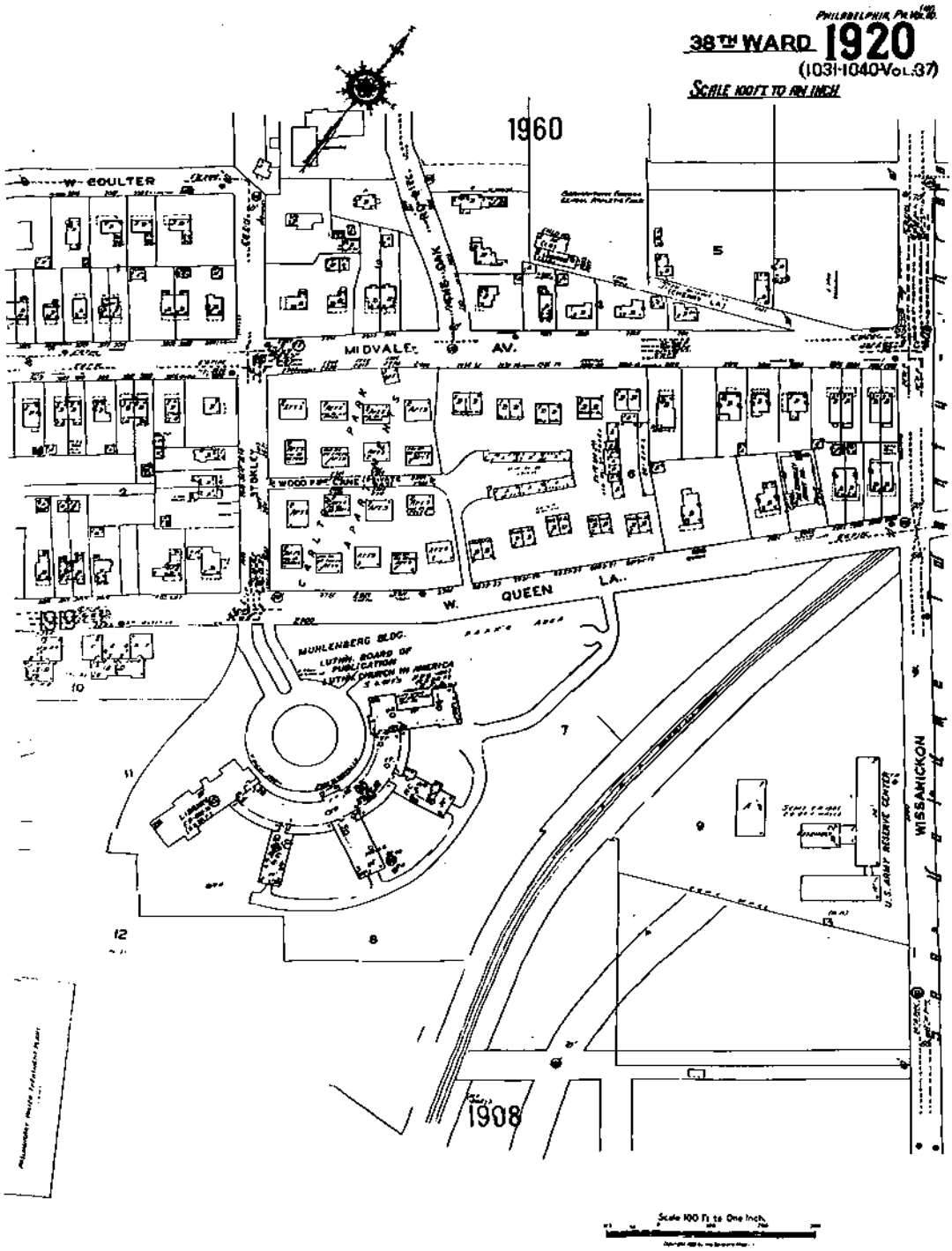


Scale 100 Ft to One Inch.









The EDR Radius Map
with GeoCheck®

Germantown Veterans Memorial USARC
5200 WISSAHICKON AVE
PHILADELPHIA, PA 19144

Inquiry Number: 01714247.224r

July 12, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

5200 WISSAHICKON AVE
PHILADELPHIA, PA 19144

COORDINATES

Latitude (North):	40.021500 - 40° 1' 17.4''
Longitude (West):	75.176900 - 75° 10' 36.8''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	484904.2
UTM Y (Meters):	4429948.5
Elevation:	208 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	40075-A2 GERMANTOWN, PA
Most Recent Revision:	1997

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following government records. For more information on this property see page 6 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
USARMY RESERVE GERMANTOWN 5200 WISSAHICKON AVE PHILADELPHIA, PA	LUST Facility Status: Cleanup Completed UNREG LTANKS Closed: 10/4/1993	N/A
GERMANTOWN USARC 5200 WISSAHICKON AVE PHILADELPHIA, PA 19144	RCRA-SQG FINDS	PA8210421568

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL ---------- National Priority List

EXECUTIVE SUMMARY

Proposed NPL Proposed National Priority List Sites
Delisted NPL National Priority List Deletions
NPL RECOVERY Federal Superfund Liens
CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP CERCLIS No Further Remedial Action Planned
CORRACTS Corrective Action Report
RCRA-TSDF Resource Conservation and Recovery Act Information
ERNS Emergency Response Notification System
HMIRS Hazardous Materials Information Reporting System
US ENG CONTROLS Engineering Controls Sites List
US INST CONTROL Sites with Institutional Controls
DOD Department of Defense Sites
FUDS Formerly Used Defense Sites
US BROWNFIELDS A Listing of Brownfields Sites
CONSENT Superfund (CERCLA) Consent Decrees
ROD Records Of Decision
UMTRA Uranium Mill Tailings Sites
ODI Open Dump Inventory
TRIS Toxic Chemical Release Inventory System
TSCA Toxic Substances Control Act
FTTS FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS Section 7 Tracking Systems
ICIS Integrated Compliance Information System
PADS PCB Activity Database System
MLTS Material Licensing Tracking System
MINES Mines Master Index File
RAATS RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

SHWS Hazardous Sites Cleanup Act Site List
HSCA HSCA Remedial Sites Listing
SWF/LF Operating Facilities
HIST LF Abandoned Landfill Inventory
ARCHIVE UST Archived Underground Storage Tank Sites
LAST Storage Tank Release Sites
ARCHIVE AST Archived Aboveground Storage Tank Sites
MANIFEST Manifest Information
ACT 2-DEED Act 2-Deed Acknowledgment Sites
ENG CONTROLS Engineering Controls Site Listing
INST CONTROL Institutional Controls Site Listing
DRYCLEANERS Drycleaner Facility Locations
BROWNFIELDS Brownfields Sites
AIRS Permit and Emissions Inventory Data

TRIBAL RECORDS

INDIAN RESERV Indian Reservations

EDR PROPRIETARY RECORDS

Manufactured Gas Plants EDR Proprietary Manufactured Gas Plants
EDR Historical Auto Stations EDR Proprietary Historic Gas Stations

EXECUTIVE SUMMARY

EDR Historical Cleaners..... EDR Proprietary Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-LQG list, as provided by EDR, and dated 03/09/2006 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
DREXEL UNIV COLL OF MEDICINE Q	2900 QUEEN LN	0 - 1/8 NW	B3	7

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/09/2006 has revealed that there are 2 RCRA-SQG sites within approximately 0.25 miles of the target property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
WISSAHICKON ONE HOUR CLEANERS	***5047 WISSAHICKON AVE***	***1/8 - 1/4 SE***	***C7***	***15***

Lower Elevation	Address	Dist / Dir	Map ID	Page
MEDICAL CLG OF PA- QUEEN LN	***2900 QUEEN LN***	***0 - 1/8 NW***	***B4***	***12***

STATE AND LOCAL RECORDS

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Resources' List of Confirmed Releases.

A review of the LUST list, as provided by EDR, and dated 03/09/2006 has revealed that there are 3 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
MNB SUNOCO	***5051 WISSAHICKON AVE***	***1/8 - 1/4 SE***	***C6***	***13***
Facility Status: Interim Remedial Actions Initiated or Completed				
MARCHWOOD APT	5515 WISSAHICKON AVE	1/4 - 1/2 NW	D9	15
Facility Status: Inactive				

Lower Elevation	Address	Dist / Dir	Map ID	Page
AMOCO STA	***2901 ABBOTTSFORD AVE***	***1/4 - 1/2 S***	***11***	***16***
Facility Status: Cleanup Completed				

UNREG LTANKS: Leaking storage tank cases from unregulated storage tanks.

A review of the UNREG LTANKS list, as provided by EDR, and dated 04/12/2002 has revealed that there are 2 UNREG LTANKS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
ALDEN PARK APT COMPLEX	5500 WISSAHICKON AVE	1/4 - 1/2 NW	D8	15
BOWMAN RES	5041 PULASKI AVE	1/4 - 1/2 ENE	10	16

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Resources' Regulated Underground Storage Tank Listing.

A review of the UST list, as provided by EDR, and dated 06/01/2006 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
MNB SUNOCO	***5051 WISSAHICKON AVE***	***1/8 - 1/4 SE***	***C6***	***13***

EXECUTIVE SUMMARY

AST: The Aboveground Storage Tank database contains registered ASTs from the Department of Environmental Protection's Listing of Pennsylvania Regulated Aboveground Storage Tanks.

A review of the AST list, as provided by EDR, and dated 06/01/2006 has revealed that there is 1 AST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
DREXEL UNIV QUEEN LN CAMPUS	2900 QUEEN LN	0 - 1/8 NW	B5	13

VCP: Voluntary Cleanup Program Sites List.

A review of the VCP list, as provided by EDR, and dated 06/20/2006 has revealed that there is 1 VCP site within approximately 0.5 miles of the target property.

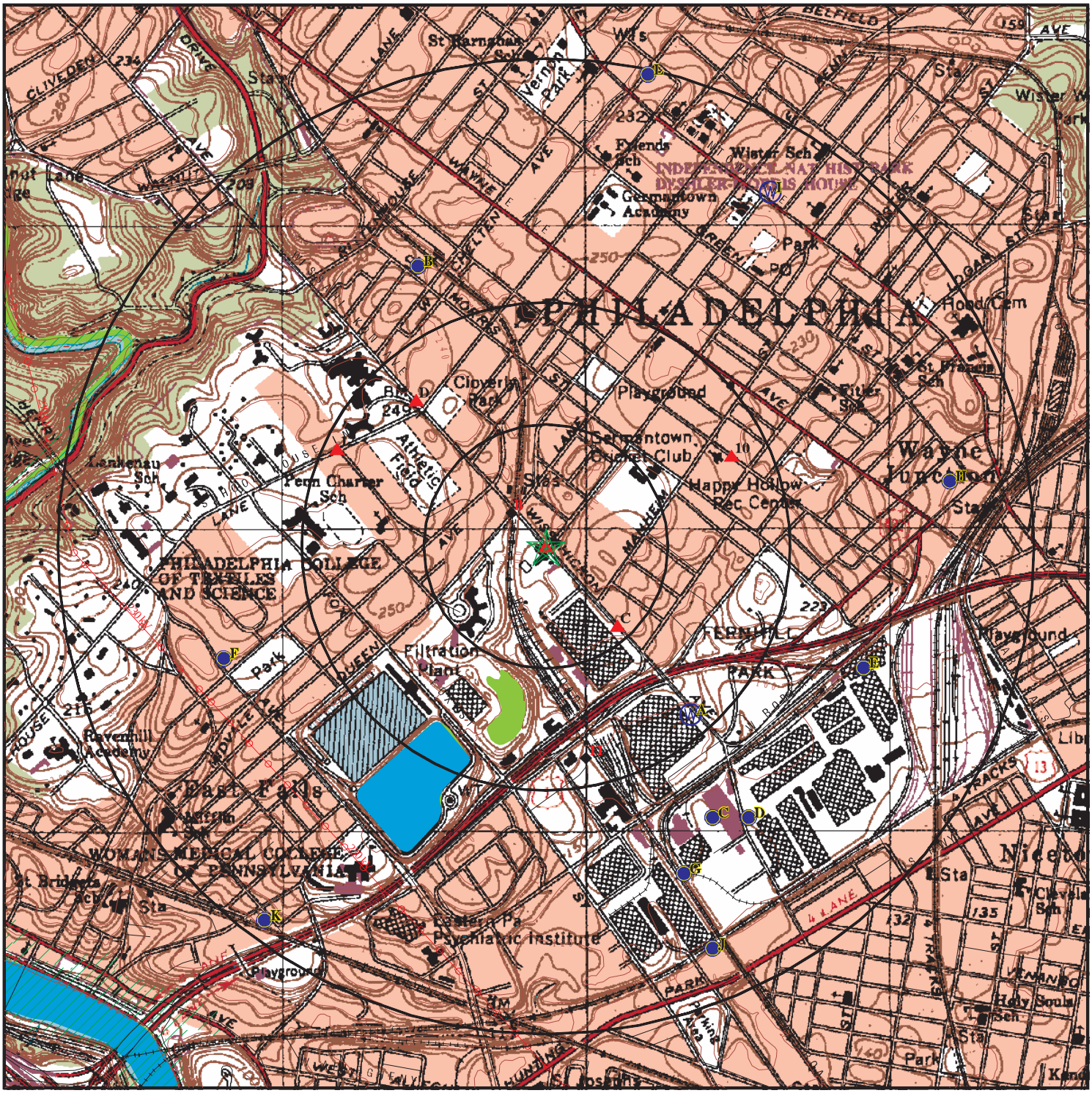
Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
WM PENN CHARTER SCH	3000 SCHOOL HOUSE LN	1/4 - 1/2 WNW	12	17

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
CHRISTIAN & SWANSON ST	VCP
PHILA DESIGN & DIST CTR SITE	VCP, ACT 2-DEED
WISTER 1967	UNREG LTANKS
FLEET MGMT SITE 4 175	UNREG LTANKS
PHILA WATER DEPT TORRESDALE PUMP ST	UNREG LTANKS
DUPONT	UNREG LTANKS
ATLANTIC SERVICE STATION	RCRA-SQG, FINDS
SHALOM MEMORIAL PARK	ERNS
8100 SHAWNEE ST. & GERMANTOWN AVE.	ERNS
4926 WAKEFIELD ST. 1 BLK EAST OF GERMANTOWN AVENUE	ERNS
4926 WAKEFIELD ST. 1 BLK EAST OF GERMANTOWN AVENUE	ERNS
6614, 6616, 6620, 6622 GERMANTOWN AVE	FINDS
GERMANTOWN SETTLEMENT CS	FINDS
GERMANTOWN HS	FINDS
6614, 6616, 6620, 6622 GERMANTOWN AVE	US BROWNFIELDS
GENERAL SERVICES ADMINISTRATION	NY MANIFEST
SEPTA -SOUTHERN PA TRANSP AUTHORITY	NY MANIFEST

OVERVIEW MAP - 01714247.224r



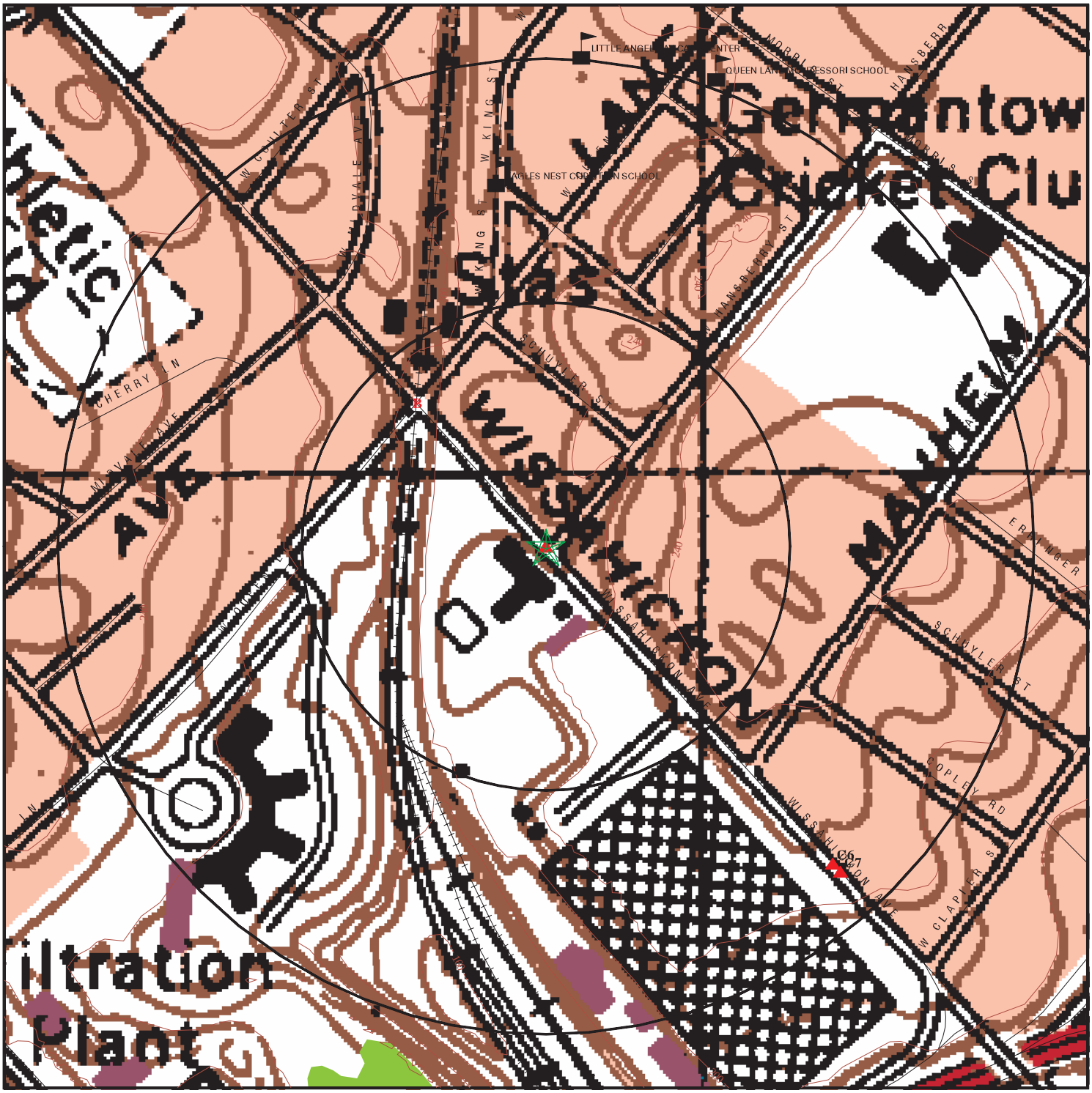
0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Germantown Veterans Memorial USARC	CLIENT:	CH2M Hill
ADDRESS:	5200 WISSAHICKON AVE PHILADELPHIA PA 19144	CONTACT:	Mary Beth Jacques
LAT/LONG:	40.0215 / 75.1769	INQUIRY #:	01714247.224r
		DATE:	July 12, 2006

DETAIL MAP - 01714247.224r



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Germantown Veterans Memorial USARC	CLIENT:	CH2M Hill
ADDRESS:	5200 WISSAHICKON AVE PHILADELPHIA PA 19144	CONTACT:	Mary Beth Jacques
LAT/LONG:	40.0215 / 75.1769	INQUIRY #:	01714247.224r
		DATE:	July 12, 2006

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL RECOVERY		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	1	0	NR	NR	NR	1
RCRA Sm. Quan. Gen.	X	0.250	1	1	NR	NR	NR	2
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS	X	TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
State Haz. Waste		1.000	0	0	0	0	NR	0
HSCA		1.000	0	0	0	0	NR	0
SWF/LF		0.500	0	0	0	NR	NR	0
HIST LF		0.500	0	0	0	NR	NR	0
LUST	X	0.500	0	1	2	NR	NR	3
UNREG LTANKS	X	0.500	0	0	2	NR	NR	2
UST		0.250	0	1	NR	NR	NR	1
ARCHIVE UST		0.250	0	0	NR	NR	NR	0
LAST		0.500	0	0	0	NR	NR	0
AST		0.250	1	0	NR	NR	NR	1
ARCHIVE AST		TP	NR	NR	NR	NR	NR	0
MANIFEST		0.250	0	0	NR	NR	NR	0
ACT 2-DEED		0.500	0	0	0	NR	NR	0
ENG CONTROLS		0.500	0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INST CONTROL		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	1	NR	NR	1
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
BROWNFIELDS		0.500	0	0	0	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0
EDR Historical Auto Stations		0.250	0	0	NR	NR	NR	0
EDR Historical Cleaners		0.250	0	0	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **USARMY RESERVE GERMANTOWN** **LUST** **S104417223**
Target **5200 WISSAHICKON AVE** **UNREG LTANKS** **N/A**
Property **PHILADELPHIA, PA**

Actual: **209 ft.**

Site 1 of 2 in cluster A

LUST:
Facility Id: 51-40712
Facility Type: Undergroung Storage Tank Containing Petroleum
Facility Status: Cleanup Completed
Status Date: 2002-08-01 00:00:00
Release Date: 1995-12-15 00:00:00
Region: South East
Description: USARMY GERMANTOWN

UNREG LTANKS:
Region : South East
Class : Cleanup of Tanks using authorities other than Act 32
Closed : 10/4/1993
Contaminant : FUEL OIL #2

A2 **GERMANTOWN USARC** **RCRA-SQG** **1004585861**
Target **5200 WISSAHICKON AVE** **FINDS** **PA8210421568**
Property **PHILADELPHIA, PA 19144**

Actual: **209 ft.**

Site 2 of 2 in cluster A

RCRAInfo:
Owner: 99TH REGIONAL SUPPORT COMMAND
(724) 693-2332
EPA ID: PA8210421568

Contact: KENDRA BORKA
(215) 443-1643

Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
PA-EFACTS (Pennsylvania - Environmental Facility Application Compliance Tracking System) is a Department-wide database that provides a holistic view of clients and sites (including facilities) that DEP regulates.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

B3
NW
< 1/8
519 ft.

Relative:
Lower

Actual:
197 ft.

DREXEL UNIV COLL OF MEDICINE QUEEN LANE
2900 QUEEN LN
PHILADELPHIA, PA 19129

RCRA-LQG
NJ MANIFEST
WI MANIFEST

1004778234
PAR000044107

Site 1 of 3 in cluster B

RCRAInfo:

Owner: PHILA HEALTH & EDUCATION CORP
(215) 762-7550
EPA ID: PAR000044107

Contact: JONATHAN CHASE
(215) 762-6506

Classification: Large Quantity Generator
TSDF Activities: Not reported

BIENNIAL REPORTS:
Last Biennial Reporting Year: 2003

Waste	Quantity (Lbs)	Waste	Quantity (Lbs)
D002	400.00	D003	55.00
D005	55.00	D006	55.00
D009	72.00	D011	55.00
LABP	1048.00	P030	55.00
P087	55.00	P098	55.00
P105	55.00		

Violation Status: No violations found

NJ MANIFEST:

Manifest Code: NJA5074538
EPA ID: PAR000044107
Date Shipped: 20040121
TSDF EPA ID: NJD980536593
TSDF Received Date: 040126
Transporter EPA ID: NJD080631369
Transporer Received Date: 040121
Waste Code: D002
Quantity Shipped: 400.00000
Unit of Measure: P
Method Code: S01

Manifest Code: NJA5023781
EPA ID: PAR000044107
Date Shipped: 20040618
TSDF EPA ID: NJD980536593
TSDF Received Date: 040623
Transporter EPA ID: NJD080631369
Transporer Received Date: 040618
Waste Code: F003
Quantity Shipped: 30.00000
Unit of Measure: P
Method Code: S01

Manifest Code: NJA5023781
EPA ID: PAR000044107
Date Shipped: 20040618
TSDF EPA ID: NJD980536593

DREXEL UNIV COLL OF MEDICINE QUEEN LANE (Continued) **1004778234**

TSDF Received Date: 040623
Transporter EPA ID: NJD080631369
Transporer Received Date: 040618
Waste Code: D011
Quantity Shipped: 20.00000
Unit of Measure: P
Method Code: S01

Manifest Code: NJA5023781
EPA ID: PAR000044107
Date Shipped: 20040618
TSDF EPA ID: NJD980536593
TSDF Received Date: 040623
Transporter EPA ID: NJD080631369
Transporer Received Date: 040618
Waste Code: U122
Quantity Shipped: 10.00000
Unit of Measure: P
Method Code: S01

Manifest Code: NJA5023781
EPA ID: PAR000044107
Date Shipped: 20040618
TSDF EPA ID: NJD980536593
TSDF Received Date: 040623
Transporter EPA ID: NJD080631369
Transporer Received Date: 040618
Waste Code: D001
Quantity Shipped: 10.00000
Unit of Measure: P
Method Code: S01

Manifest Code: NJA5023781
EPA ID: PAR000044107
Date Shipped: 20040618
TSDF EPA ID: NJD980536593
TSDF Received Date: 040623
Transporter EPA ID: NJD080631369
Transporer Received Date: 040618
Waste Code: F003
Quantity Shipped: 30.00000
Unit of Measure: P
Method Code: S01

Manifest Code: NJA5023781
EPA ID: PAR000044107
Date Shipped: 20040618
TSDF EPA ID: NJD980536593
TSDF Received Date: 040623
Transporter EPA ID: NJD080631369
Transporer Received Date: 040618
Waste Code: F005
Quantity Shipped: 10.00000

DREXEL UNIV COLL OF MEDICINE QUEEN LANE (Continued) **1004778234**

Unit of Measure: P
Method Code: S01

Manifest Code: NJA5023781
EPA ID: PAR000044107
Date Shipped: 20040618
TSDF EPA ID: NJD980536593
TSDF Received Date: 040623
Transporter EPA ID: NJD080631369
Transporer Received Date: 040618
Waste Code: D003
Quantity Shipped: 10.00000
Unit of Measure: P
Method Code: S01

Manifest Code: NJA5023781
EPA ID: PAR000044107
Date Shipped: 20040618
TSDF EPA ID: NJD980536593
TSDF Received Date: 040623
Transporter EPA ID: NJD080631369
Transporer Received Date: 040618
Waste Code: D003
Quantity Shipped: 10.00000
Unit of Measure: P
Method Code: S01

Manifest Code: NJA5023781
EPA ID: PAR000044107
Date Shipped: 20040618
TSDF EPA ID: NJD980536593
TSDF Received Date: 040623
Transporter EPA ID: NJD080631369
Transporer Received Date: 040618
Waste Code: D001
Quantity Shipped: 10.00000
Unit of Measure: P
Method Code: S01

WI MANIFEST:
Year: 04
EPA ID: PAR000044107
FID: 0
ACT Code: 202
ACT Status: A
ACT Code 1: 202
ACT Name: HW Generator - Small
Contact First Name: Not reported
Contact Last Name: Not reported
Contact Title: Not reported
Contact Address: Not reported
Contact State: Not reported
Contact City: Not reported

DREXEL UNIV COLL OF MEDICINE QUEEN LANE (Continued) **1004778234**

Contact Zip: Not reported
Contact Telephone: Not reported
Contact Extention: Not reported
Contact Email Address: Not reported
WI MANIFEST SHIP: -
Year: 04
Manifest DOC ID: 0
Copy Type: 3
Gen EPA ID: PAR000044107
Gen Date: 06/18/2004
TSD Date: 07/16/2004
TSD EPA ID: WID988566543
GEN Copy Revd Date: 8/2/2004
TSG Copy Revd Date: 07/28/2004
Year: Not reported
Manifest DOC ID: Not reported
Waste Page No: Not reported
Waste Line No: Not reported
Waste Code: Not reported
Waste Amount: Not reported
Unit of Measure: Not reported
Waste LBS: Not reported

Year: 05
Manifest DOC ID: 0
Copy Type: 3
Gen EPA ID: PAR000044107
Gen Date: 08/10/2005
TSD Date: 08/31/2005
TSD EPA ID: WID988566543
GEN Copy Revd Date: 09/08/2005
TSG Copy Revd Date: 09/22/2005
Year: Not reported
Manifest DOC ID: Not reported
Waste Page No: Not reported
Waste Line No: Not reported
Waste Code: Not reported
Waste Amount: Not reported
Unit of Measure: Not reported
Waste LBS: Not reported

WI MANIFEST TRANS: -
Year: Not reported
Mifest DOC ID: Not reported
TRAN EPA ID: Not reported
TRAN ORDER NO: Not reported
TRAN Date: Not reported

Year: Not reported
Manifest DOC ID: Not reported
Waste Page No: Not reported
Waste Line No: Not reported
Waste Code: Not reported
Waste Amount: Not reported
Unit of Measure: Not reported
Waste LBS: Not reported

DREXEL UNIV COLL OF MEDICINE QUEEN LANE (Continued) **1004778234**

Year:	05
EPA ID:	PAR000044107
FID:	0
ACT Code:	202
ACT Status:	A
ACT Code 1:	202
ACT Name:	HW Generator - Small
Contact First Name:	Not reported
Contact Last Name:	Not reported
Contact Title:	Not reported
Contact Address:	Not reported
Contact State:	Not reported
Contact City:	Not reported
Contact Zip:	0
Contact Telephone:	0
Contact Extention:	Not reported
Contact Email Address:	Not reported
WI MANIFEST SHIP:	-
Year:	04
Manifest DOC ID:	0
Copy Type:	3
Gen EPA ID:	PAR000044107
Gen Date:	06/18/2004
TSD Date:	07/16/2004
TSD EPA ID:	WID988566543
GEN Copy Revd Date:	8/2/2004
TSG Copy Revd Date:	07/28/2004
Year:	Not reported
Manifest DOC ID:	Not reported
Waste Page No:	Not reported
Waste Line No:	Not reported
Waste Code:	Not reported
Waste Amount:	Not reported
Unit of Measure:	Not reported
Waste LBS:	Not reported

Year:	05
Manifest DOC ID:	0
Copy Type:	3
Gen EPA ID:	PAR000044107
Gen Date:	08/10/2005
TSD Date:	08/31/2005
TSD EPA ID:	WID988566543
GEN Copy Revd Date:	09/08/2005
TSG Copy Revd Date:	09/22/2005
Year:	Not reported
Manifest DOC ID:	Not reported
Waste Page No:	Not reported
Waste Line No:	Not reported
Waste Code:	Not reported
Waste Amount:	Not reported
Unit of Measure:	Not reported
Waste LBS:	Not reported

WI MANIFEST TRANS:	-
Year:	Not reported
Mifest DOC ID:	Not reported

DREXEL UNIV COLL OF MEDICINE QUEEN LANE (Continued) **1004778234**

TRAN EPA ID: Not reported
TRAN ORDER NO: Not reported
TRAN Date: Not reported

Year: Not reported
Manifest DOC ID: Not reported
Waste Page No: Not reported
Waste Line No: Not reported
Waste Code: Not reported
Waste Amount: Not reported
Unit of Measure: Not reported
Waste LBS: Not reported

B4 **MEDICAL CLG OF PA- QUEEN LN** **RCRA-SQG** **1004774802**
NW **2900 QUEEN LN** **FINDS** **PAD987352853**
< 1/8 **PHILADELPHIA, PA 19129**
519 ft.

Site 2 of 3 in cluster B

Relative:
Lower

Actual:
197 ft.

RCRAInfo:
Owner: OPERNAME
(215) 555-1212
EPA ID: PAD987352853

Contact: JOANN MAGNATTO
(215) 762-8918

Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

B5
NW
< 1/8
519 ft.

Relative:
Lower

Actual:
197 ft.

DREXEL UNIV QUEEN LN CAMPUS **AST** **A100269034**
2900 QUEEN LN **N/A**
PHILADELPHIA, PA 19129

Site 3 of 3 in cluster B

AST:

Site ID:	587240
Tank Status:	Currently in Use
Tank Sequence Number:	001A
Date Installed:	1992-07-01
Substance:	Diesel Fuel
Tank Capacity:	2400
Municipality Name :	Philadelphia
Client Id Number :	82737
Mailing Name :	DREXEL UNIV
Mailing Address:	245 N 15TH ST
	PHILADELPHIA, PA 19102
Other Id :	51-41688
Secondary Facility Address	Not reported
Region Code Name :	EP SE Rgnl Off
Regulated Expiration Dt:	2007-02-04 00:00:00
Tank Code :	AST
Inspection Code :	Not reported
Tank Last Dt Inspected :	Not reported
Region Code :	4100

C6
SE
1/8-1/4
1157 ft.

Relative:
Higher

Actual:
226 ft.

MNB SUNOCO **LUST** **U000449404**
5051 WISSAHICKON AVE **UST** **N/A**
PHILADELPHIA, PA 19144

Site 1 of 2 in cluster C

LUST:

Facility Id:	51-43084
Facility Type:	Undergroung Storage Tank Containing Petroleum
Facility Status:	**Interim Remedial Actions Initiated or Completed**
Status Date:	2005-10-18 00:00:00
Release Date:	1999-12-03 00:00:00
Region:	South East
Description:	MMB SUNOCO

UST:

Site ID:	587436
Capacity:	5000
Date Installed:	2000-02-01
Tank Seq No:	010
Substance:	Gasoline
Tank Status:	Currently in Use
Municipality Name :	Philadelphia
Client Id Number :	169126
Mailing Name :	MNB ENTERPRISES
Mailing Address:	5051 WISSAHICKON AVE
	PHILADELPHIA, PA 19144
Other Id :	51-43084
Secondary Facility Address	Not reported
Region Code Name :	EP SE Rgnl Off
Regulated Expiration Dt:	2007-02-04 00:00:00
Tank Code :	UST
Inspection Code :	Facility Operation Inspection

MNB SUNOCO (Continued) **U000449404**

Tank Last Dt Inspected : 2001-10-05 00:00:00
Region Code : 4100

Site ID: 587436
Capacity: 16000
Date Installed: 2000-02-01
Tank Seq No: 008
Substance: Gasoline
Tank Status: Currently in Use
Municipality Name : Philadelphia
Client Id Number : 169126
Mailing Name : MNB ENTERPRISES
Mailing Address: 5051 WISSAHICKON AVE
PHILADELPHIA, PA 19144
Other Id : 51-43084
Secondary Facility Address Not reported
Region Code Name : EP SE Rgnl Off
Regulated Expiration Dt: 2007-02-04 00:00:00
Tank Code : UST
Inspection Code : Facility Operation Inspection
Tank Last Dt Inspected : 2001-10-05 00:00:00
Region Code : 4100

Site ID: 587436
Capacity: 10000
Date Installed: 2000-02-01
Tank Seq No: 011
Substance: Diesel Fuel
Tank Status: Currently in Use
Municipality Name : Philadelphia
Client Id Number : 169126
Mailing Name : MNB ENTERPRISES
Mailing Address: 5051 WISSAHICKON AVE
PHILADELPHIA, PA 19144
Other Id : 51-43084
Secondary Facility Address Not reported
Region Code Name : EP SE Rgnl Off
Regulated Expiration Dt: 2007-02-04 00:00:00
Tank Code : UST
Inspection Code : Facility Operation Inspection
Tank Last Dt Inspected : 2001-10-05 00:00:00
Region Code : 4100

Site ID: 587436
Capacity: 10000
Date Installed: 2000-02-01
Tank Seq No: 009
Substance: Gasoline
Tank Status: Currently in Use
Municipality Name : Philadelphia
Client Id Number : 169126
Mailing Name : MNB ENTERPRISES
Mailing Address: 5051 WISSAHICKON AVE
PHILADELPHIA, PA 19144
Other Id : 51-43084
Secondary Facility Address Not reported
Region Code Name : EP SE Rgnl Off
Regulated Expiration Dt: 2007-02-04 00:00:00
Tank Code : UST

MNB SUNOCO (Continued) **U000449404**

Inspection Code : Facility Operation Inspection
Tank Last Dt Inspected : 2001-10-05 00:00:00
Region Code : 4100

C7 **WISSAHICKON ONE HOUR CLEANERS** **RCRA-SQG** **1004773455**
SE **5047 WISSAHICKON AVE** **FINDS** **PAD014852925**
1/8-1/4 **PHILADELPHIA, PA 19144**
1188 ft.

Site 2 of 2 in cluster C

Relative: Higher

Actual: 224 ft.

RCRAInfo:
Owner: REE SOUNG
(215) 555-1212
EPA ID: PAD014852925
Contact: SOUNG GIL RHEE
(215) 843-2188
Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

D8 **ALDEN PARK APT COMPLEX** **UNREG LTANKS** **S105919455**
NW **5500 WISSAHICKON AVE** **N/A**
1/4-1/2 **PHILADELPHIA, PA**
2007 ft.

Site 1 of 2 in cluster D

Relative: Higher

Actual: 248 ft.

UNREG LTANKS:
Region : South East
Class : Cleanup of Tanks using authorities other than Act 32
Closed : Not reported
Contaminant : Not reported

D9 **MARCHWOOD APT** **LUST** **S102869515**
NW **5515 WISSAHICKON AVE** **N/A**
1/4-1/2 **PHILADELPHIA, PA**
2114 ft.

Site 2 of 2 in cluster D

Relative: Higher

Actual: 247 ft.

LUST:
Facility Id: 51-44767
Facility Type: Undergroung Storage Tank Containing Haz Substances
Facility Status: Inactive
Status Date: 1999-12-31 00:00:00
Release Date: 1991-01-14 00:00:00
Region: South East
Description: MARCHWOOD APTS

10
ENE
1/4-1/2
2238 ft.

BOWMAN RES
5041 PULASKI AVE
PHILADELPHIA, PA

UNREG LTANKS **S105919480**
N/A

Relative:
Higher

Actual:
223 ft.

UNREG LTANKS:
Region : South East
Class : Cleanup of Tanks using authorities other than Act 32
Closed : Not reported
Contaminant : FUEL OIL NO. 2

11
South
1/4-1/2
2331 ft.

AMOCO STA
2901 ABBOTTSFORD AVE
PHILADELPHIA, PA 19129

LUST **U003165659**
UST **N/A**

Relative:
Lower

Actual:
150 ft.

LUST:
Facility Id: 51-46337
Facility Type: Undergroung Storage Tank Containing Petroleum
Facility Status: Cleanup Completed
Status Date: 2004-12-16 00:00:00
Release Date: 2002-10-31 00:00:00
Region: South East
Description: NOC USTIF

UST:
Site ID: 588059
Capacity: 10000
Date Installed: 1996-02-28
Tank Seq No: 001
Substance: Gasoline
Tank Status: Currently in Use
Municipality Name : Philadelphia
Client Id Number : 210827
Mailing Name : ARFA REAL ESTATE HOLDINGS LLC
Mailing Address: 4350 HADDONFIELD RD STE 200
PENNSAUKEN, NJ 08109
Other Id : 51-46337
Secondary Facility Address Not reported
Region Code Name : EP SE Rgnl Off
Regulated Expiration Dt: 2007-02-04 00:00:00
Tank Code : UST
Inspection Code : Facility Operation Inspection
Tank Last Dt Inspected : Not reported
Region Code : 4100

Site ID: 588059
Capacity: 10000
Date Installed: 1996-02-28
Tank Seq No: 002
Substance: Gasoline
Tank Status: Currently in Use
Municipality Name : Philadelphia
Client Id Number : 210827
Mailing Name : ARFA REAL ESTATE HOLDINGS LLC
Mailing Address: 4350 HADDONFIELD RD STE 200
PENNSAUKEN, NJ 08109
Other Id : 51-46337
Secondary Facility Address Not reported
Region Code Name : EP SE Rgnl Off
Regulated Expiration Dt: 2007-02-04 00:00:00

AMOCO STA (Continued) **U003165659**

Tank Code :	UST
Inspection Code :	Facility Operation Inspection
Tank Last Dt Inspected :	Not reported
Region Code :	4100
Site ID:	588059
Capacity:	10000
Date Installed:	1996-02-28
Tank Seq No:	003
Substance:	Gasoline
Tank Status:	Currently in Use
Municipality Name :	Philadelphia
Client Id Number :	210827
Mailing Name :	ARFA REAL ESTATE HOLDINGS LLC
Mailing Address:	4350 HADDONFIELD RD STE 200 PENNSAUKEN, NJ 08109
Other Id :	51-46337
Secondary Facility Address	Not reported
Region Code Name :	EP SE Rgnl Off
Regulated Expiration Dt:	2007-02-04 00:00:00
Tank Code :	UST
Inspection Code :	Facility Operation Inspection
Tank Last Dt Inspected :	Not reported
Region Code :	4100

12
WNW
1/4-1/2
2491 ft.

WM PENN CHARTER SCH **VCP** **S107417972**
3000 SCHOOL HOUSE LN **N/A**
PHILADELPHIA, PA

Relative:
Higher

Actual:
251 ft.

VCP:

Rec ID:	Not reported
Activity ID:	5755
Municipality:	Philadelphia
Region:	Southeast
Cleanup:	Not reported
Response Date :	Not reported
Site Size :	Not reported
Cleanup Indicator :	Not reported
Land Designation :	Not reported
Category Desc :	Not reported
Rec ID:	Not reported
Activity ID:	5756
Municipality:	Philadelphia
Region:	Southeast
Cleanup:	Not reported
Response Date :	Not reported
Site Size :	Not reported
Cleanup Indicator :	Not reported
Land Designation :	Not reported
Category Desc :	Not reported

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
PHILADELPHIA	1007266327	6614, 6616, 6620, 6622 GERMANTOWN AVE	6614, 6616, 6620, 6622 GERMANTOWN AVE		US BROWNFIELDS
PHILADELPHIA	1007213168	6614, 6616, 6620, 6622 GERMANTOWN AVE	6614, 6616, 6620, 6622 GERMANTOWN AVE		FINDS
PHILADELPHIA	S105919809	WISTER 1967	67-107 BRINGHURST / WAKEFIELD		UNREG LTANKS
PHILADELPHIA	1008332820	GERMANTOWN SETTLEMENT CS	M	19144	FINDS
PHILADELPHIA	1008328142	GERMANTOWN HS	M	19144	FINDS
PHILADELPHIA	1004774151	ATLANTIC SERVICE STATION	QUEEN & GREEN	19144	RCRA-SQG, FINDS
PHILADELPHIA	S106662346	CHRISTIAN & SWANSON ST	QUEEN / INTERSTATE 95		VCP
PHILADELPHIA	90164614	SHALOM MEMORIAL PARK	SHALOM MEMORIAL PARK		ERNS
PHILADELPHIA	91241528	8100 SHAWNEE ST. & GERMANTOWN AVE.	8100 SHAWNEE ST. & GERMANTOWN AVE.		ERNS
PHILADELPHIA	S105919558	FLEET MGMT SITE 4 175	8501 STATE RD / ASHBURNER ST		UNREG LTANKS
PHILADELPHIA	S105919716	PHILA WATER DEPT TORRESDALE PUMP ST	8601 STATE RD AKA 5201 PENNY PACK S		UNREG LTANKS
PHILADELPHIA	S105919526	DUPONT	5803 TACONY ST / STATE RD		UNREG LTANKS
PHILADELPHIA	96481291	4926 WAKEFIELD ST. 1 BLK EAST OF GERMANTOWN AVENUE	4926 WAKEFIELD ST. 1 BLK EAST OF GERMANTOWN AVENUE	19144	ERNS
PHILADELPHIA	96479616	4926 WAKEFIELD ST. 1 BLK EAST OF GERMANTOWN AVENUE	4926 WAKEFIELD ST. 1 BLK EAST OF GERMANTOWN AVENUE	19144	ERNS
PHILADELPHIA	1009246572	GENERAL SERVICES ADMINISTRATION	5000 WISSAHICKON AVE	19144	NY MANIFEST
PHILADELPHIA	1009246691	SEPTA -SOUTHERN PA TRANSP AUTHORITY	4301 WISSAHICKON AVENUE	19144	NY MANIFEST
PHILADELPHIA	S106032050	PHILA DESIGN & DIST CTR SITE	WISSAHICKON AVE / ABBOTTS FORD AVE		VCP, ACT 2-DEED

EPA Waste Codes Addendum

Code	Description
D002	A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
D003	A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.
D005	BARIUM
D006	CADMIUM
D009	MERCURY
D011	SILVER
LABP	LAB PACK
P030	CYANIDES (SOLUBLE CYANIDE SALTS), NOT OTHERWISE SPECIFIED
P087	OSMIUM OXIDE OSO4, (T-4)-
P087	OSMIUM TETROXIDE
P098	POTASSIUM CYANIDE
P098	POTASSIUM CYANIDE K(CN)
P105	SODIUM AZIDE

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/19/2006
Date Data Arrived at EDR: 05/05/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 17

Source: EPA
Telephone: N/A
Last EDR Contact: 05/05/2006
Next Scheduled EDR Contact: 07/31/2006
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 04/19/2006
Date Data Arrived at EDR: 05/05/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 17

Source: EPA
Telephone: N/A
Last EDR Contact: 05/05/2006
Next Scheduled EDR Contact: 07/31/2006
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/19/2006
Date Data Arrived at EDR: 05/05/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 17

Source: EPA
Telephone: N/A
Last EDR Contact: 05/05/2006
Next Scheduled EDR Contact: 07/31/2006
Data Release Frequency: Quarterly

NPL RECOVERY: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 05/23/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 03/21/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 23

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 06/22/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 03/21/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 23

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 06/23/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/15/2006
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/21/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/09/2006
Date Data Arrived at EDR: 04/27/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 33

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/28/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 01/12/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 40

Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Last EDR Contact: 04/26/2006
Next Scheduled EDR Contact: 07/24/2006
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 04/14/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/21/2006
Date Data Arrived at EDR: 03/27/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/21/2006
Date Data Arrived at EDR: 03/27/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Varies

DOD: Department of Defense Sites
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/08/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 177

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 05/12/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 01/19/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 33

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 04/26/2006
Date Data Arrived at EDR: 04/27/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/12/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/2004
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 04/25/2005
Number of Days to Update: 69

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/13/2006
Next Scheduled EDR Contact: 07/24/2006
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/13/2006
Date Data Arrived at EDR: 04/28/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 32

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 07/06/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 11/04/2005
Date Data Arrived at EDR: 11/28/2005
Date Made Active in Reports: 01/30/2006
Number of Days to Update: 63

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 06/21/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 07/13/2005
Date Made Active in Reports: 08/17/2005
Number of Days to Update: 35

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 06/22/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 04/12/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/29/2006
Date Data Arrived at EDR: 04/26/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 34

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Date of Government Version: 03/31/2006
Date Data Arrived at EDR: 04/26/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 34

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 05/11/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 11

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 03/06/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 02/13/2006
Date Data Arrived at EDR: 04/21/2006
Date Made Active in Reports: 05/11/2006
Number of Days to Update: 20

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/11/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/27/2005
Date Data Arrived at EDR: 02/08/2006
Date Made Active in Reports: 02/27/2006
Number of Days to Update: 19

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 06/28/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/12/2006
Date Data Arrived at EDR: 04/26/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 34

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/09/2006
Date Data Arrived at EDR: 03/29/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 62

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/28/2006
Next Scheduled EDR Contact: 09/25/2006
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/27/2006
Date Data Arrived at EDR: 05/02/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 28

Source: EPA
Telephone: N/A
Last EDR Contact: 04/03/2006
Next Scheduled EDR Contact: 07/03/2006
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/05/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 06/17/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/30/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

SHWS: Hazardous Sites Cleanup Act Site List

The Hazardous Sites Cleanup Act Site List includes sites listed on PA Priority List, sites delisted from PA Priority List, Interim Response Completed sites, and Sites Being Studied or Response Being Planned.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 02/17/2006
Date Made Active in Reports: 03/15/2006
Number of Days to Update: 26

Source: Department Environmental Protection
Telephone: 717-783-7816
Last EDR Contact: 06/16/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Semi-Annually

HSCA: HSCA Remedial Sites Listing

A list of remedial sites on the PA Priority List. This is the PA state equivalent of the federal NPL superfund list.

Date of Government Version: 05/05/2004
Date Data Arrived at EDR: 05/26/2004
Date Made Active in Reports: 06/24/2004
Number of Days to Update: 29

Source: Department of Environmental Protection
Telephone: 717-783-7816
Last EDR Contact: 02/17/2006
Next Scheduled EDR Contact: 05/15/2006
Data Release Frequency: Varies

SWF/LF: Operating Facilities

Date of Government Version: 03/15/2006
Date Data Arrived at EDR: 03/31/2006
Date Made Active in Reports: 05/04/2006
Number of Days to Update: 34

Source: Department of Environmental Protection
Telephone: 717-787-7564
Last EDR Contact: 06/22/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Semi-Annually

HIST LF: Abandoned Landfill Inventory

The report provides facility information recorded in the Pennsylvania Department of Environmental Protection ALI database. Some of this information has been abstracted from old records and may not accurately reflect the current conditions and status at these facilities

Date of Government Version: 01/04/2005
Date Data Arrived at EDR: 01/04/2005
Date Made Active in Reports: 02/04/2005
Number of Days to Update: 31

Source: Department of Environmental Protection
Telephone: 717-787-7564
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Varies

HIST LF INACTIVE: Inactive Facilities List

A listing of inactive non-hazardous facilities (10000 & 300000 series). This listing is no longer updated or maintained by the Department of Environmental Protection. At the time the listing was available, the DEP?s name was the Department of Environmental Resources.

Date of Government Version: 12/20/1994
Date Data Arrived at EDR: 07/12/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: 717-787-7381
Last EDR Contact: 06/21/2005
Next Scheduled EDR Contact: 12/19/2005
Data Release Frequency: No Update Planned

HIST LF INVENTORY: Facility Inventory

A listing of solid waste facilities. This listing is no longer updated or maintained by the Department of Environmental Protection. At the time the listing was available, the DEP?s name was the Department of Environmental Resources.

Date of Government Version: 06/02/1999
Date Data Arrived at EDR: 07/12/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: 717-787-7381
Last EDR Contact: 09/19/2005
Next Scheduled EDR Contact: 12/19/2005
Data Release Frequency: No Update Planned

LUST: Storage Tank Release Sites

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 03/09/2006
Date Data Arrived at EDR: 04/11/2006
Date Made Active in Reports: 05/04/2006
Number of Days to Update: 23

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 07/12/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Semi-Annually

UNREG LTANKS: Unregulated Tank Cases

Leaking storage tank cases from unregulated storage tanks.

Date of Government Version: 04/12/2002
Date Data Arrived at EDR: 08/14/2003
Date Made Active in Reports: 08/29/2003
Number of Days to Update: 15

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 08/14/2003
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST: Listing of Pennsylvania Regulated Underground Storage Tanks

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 06/01/2006
Date Data Arrived at EDR: 06/07/2006
Date Made Active in Reports: 06/30/2006
Number of Days to Update: 23

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 07/11/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Varies

ARCHIVE UST: Archived Underground Storage Tank Sites

The list includes tanks storing highly hazardous substances that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

Date of Government Version: 06/01/2006
Date Data Arrived at EDR: 06/07/2006
Date Made Active in Reports: 07/12/2006
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 07/11/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Varies

LAST: Storage Tank Release Sites

Leaking Aboveground Storage Tank Incident Reports.

Date of Government Version: 03/09/2006
Date Data Arrived at EDR: 04/11/2006
Date Made Active in Reports: 05/04/2006
Number of Days to Update: 23

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 07/12/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Semi-Annually

AST: Listing of Pennsylvania Regulated Aboveground Storage Tanks

Registered Aboveground Storage Tanks.

Date of Government Version: 06/01/2006
Date Data Arrived at EDR: 06/07/2006
Date Made Active in Reports: 06/30/2006
Number of Days to Update: 23

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 07/11/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Varies

ARCHIVE AST: Archived Aboveground Storage Tank Sites

The list includes aboveground tanks with a capacity greater than 21,000 gallons that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

Date of Government Version: 06/01/2006
Date Data Arrived at EDR: 06/07/2006
Date Made Active in Reports: 07/12/2006
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 07/11/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Varies

MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 05/04/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/12/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Annually

ACT 2-DEED: Act 2-Deed Acknowledgment Sites

This listing pertains to sites where the Department has approved a cleanup requiring a deed acknowledgment under Act 2. This list includes sites remediated to a non-residential Statewide health standard (Section 303(g)); all sites demonstrating attainment of a Site-specific standard (Section 304(m)); and sites being remediated as a special industrial area (Section 305(g)). Persons who remediated a site to a standard that requires a deed acknowledgment shall comply with the requirements of the Solid Waste Management Act or the Hazardous Sites Cleanup Act, as referenced in Act 2. These statutes require a property description section in the deed concerning the hazardous substance disposal on the site. The location of disposed hazardous substances and a description of the type of hazardous substances disposed on the site shall be included in the deed acknowledgment. A deed acknowledgment is required at the time of conveyance of the property.

Date of Government Version: 06/20/2006
Date Data Arrived at EDR: 06/21/2006
Date Made Active in Reports: 07/12/2006
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 717-783-9470
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Varies

ENG CONTROLS: Engineering Controls Site Listing

Under the Land Recycling Act (Act 2) persons who perform a site cleanup using the site-specific standard or the special industrial area standard may use engineering or institutional controls as part of the response action. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/08/2006
Date Data Arrived at EDR: 05/16/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 717-783-9470
Last EDR Contact: 05/16/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Varies

INST CONTROL: Institutional Controls Site Listing

Under the Land Recycling Act (Act 2) persons who perform a site cleanup using the site-specific standard or the special industrial area standard may use engineering or institutional controls as part of the response action. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/08/2006
Date Data Arrived at EDR: 05/16/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 717-783-9470
Last EDR Contact: 05/16/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Sites
Sites involved in the Voluntary Cleanup Program

Date of Government Version: 06/20/2006
Date Data Arrived at EDR: 06/21/2006
Date Made Active in Reports: 07/12/2006
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 717-783-2388
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Semi-Annually

DRYCLEANERS: Drycleaner Facility Locations
A listing of drycleaner facility locations.

Date of Government Version: 05/01/2006
Date Data Arrived at EDR: 05/01/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: 717-787-9702
Last EDR Contact: 04/12/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Varies

BROWNFIELDS: Brownfields Sites

Date of Government Version: 06/20/2006
Date Data Arrived at EDR: 06/21/2006
Date Made Active in Reports: 07/12/2006
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Varies

AIRS: Permit and Emissions Inventory Data
Permit and emissions inventory data.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 05/03/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 34

Source: Department of Environmental Protection
Telephone: 717-787-9702
Last EDR Contact: 04/07/2006
Next Scheduled EDR Contact: 07/24/2006
Data Release Frequency: Annually

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/08/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 177

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 05/12/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Semi-Annually

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/17/2006
Date Made Active in Reports: 04/07/2006
Number of Days to Update: 49

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 06/14/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 04/24/2006
Date Made Active in Reports: 05/02/2006
Number of Days to Update: 8

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/05/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/02/2006
Date Data Arrived at EDR: 05/31/2006
Date Made Active in Reports: 06/27/2006
Number of Days to Update: 27

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/31/2006
Next Scheduled EDR Contact: 08/28/2006
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 09/30/2005
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 15

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data

Hazardous waste manifest information.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 05/17/2006
Number of Days to Update: 61

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 05/15/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 05/02/2006
Number of Days to Update: 46

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 07/11/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Child Care Facility List
Source: Department of Public Welfare
Telephone: 717-783-3856

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

GERMANTOWN VETERANS MEMORIAL USARC
5200 WISSAHICKON AVE
PHILADELPHIA, PA 19144

TARGET PROPERTY COORDINATES

Latitude (North):	40.02150 - 40° 1' 17.4''
Longitude (West):	75.1769 - 75° 10' 36.8''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	484904.2
UTM Y (Meters):	4429948.5
Elevation:	208 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	40075-A2 GERMANTOWN, PA
Most Recent Revision:	1997

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

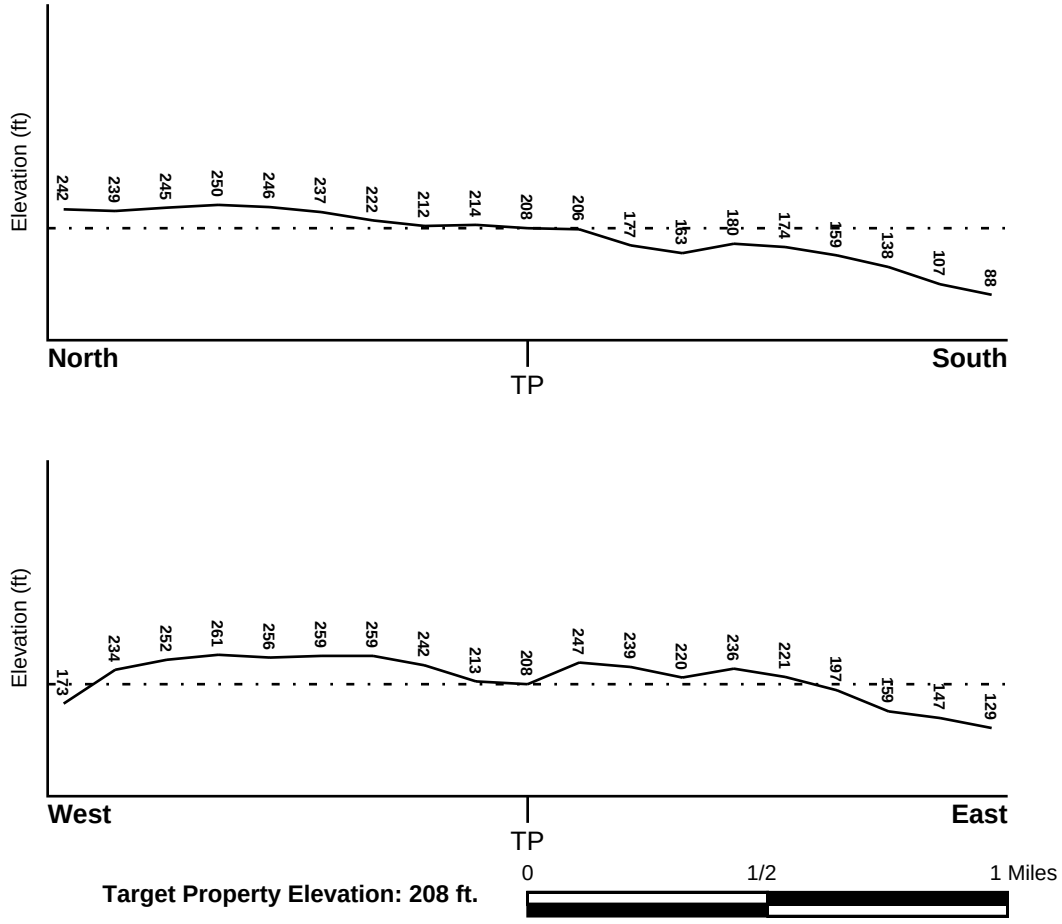
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
PHILADELPHIA, PA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 4207570095F

Additional Panels in search area: 4207570087F
4207570089F

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
GERMANTOWN	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Paleozoic
System:	Ordovian
Series:	Lower Paleozoic granitic rocks
Code:	Pzg1 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	CHESTER
Soil Surface Texture:	silt loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: LOW

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	8 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 2.00 Min: 0.60	Max: 5.50 Min: 4.50
2	8 inches	42 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 4.50
3	42 inches	62 inches	silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 4.50

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: extremely stony - silt loam
loam
channery - loam
very stony - loam

Surficial Soil Types: extremely stony - silt loam
loam
channery - loam
very stony - loam

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: loam
channery - fine sandy loam
clay loam
weathered bedrock
stratified

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
B4	USGS2168476	1/2 - 1 Mile NNW
C5	USGS2168915	1/2 - 1 Mile SSE
D7	USGS2168914	1/2 - 1 Mile SE
E10	USGS2168815	1/2 - 1 Mile ESE
F12	USGS2168819	1/2 - 1 Mile WSW
G14	USGS2168881	1/2 - 1 Mile SSE
H16	USGS2168735	1/2 - 1 Mile East
J19	USGS2168992	1/2 - 1 Mile SSE
K21	USGS2168835	1/2 - 1 Mile SW
K24	USGS2168846	1/2 - 1 Mile SW
K25	USGS2169001	1/2 - 1 Mile SW
L27	USGS2168404	1/2 - 1 Mile NNE
L29	USGS2168409	1/2 - 1 Mile North

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

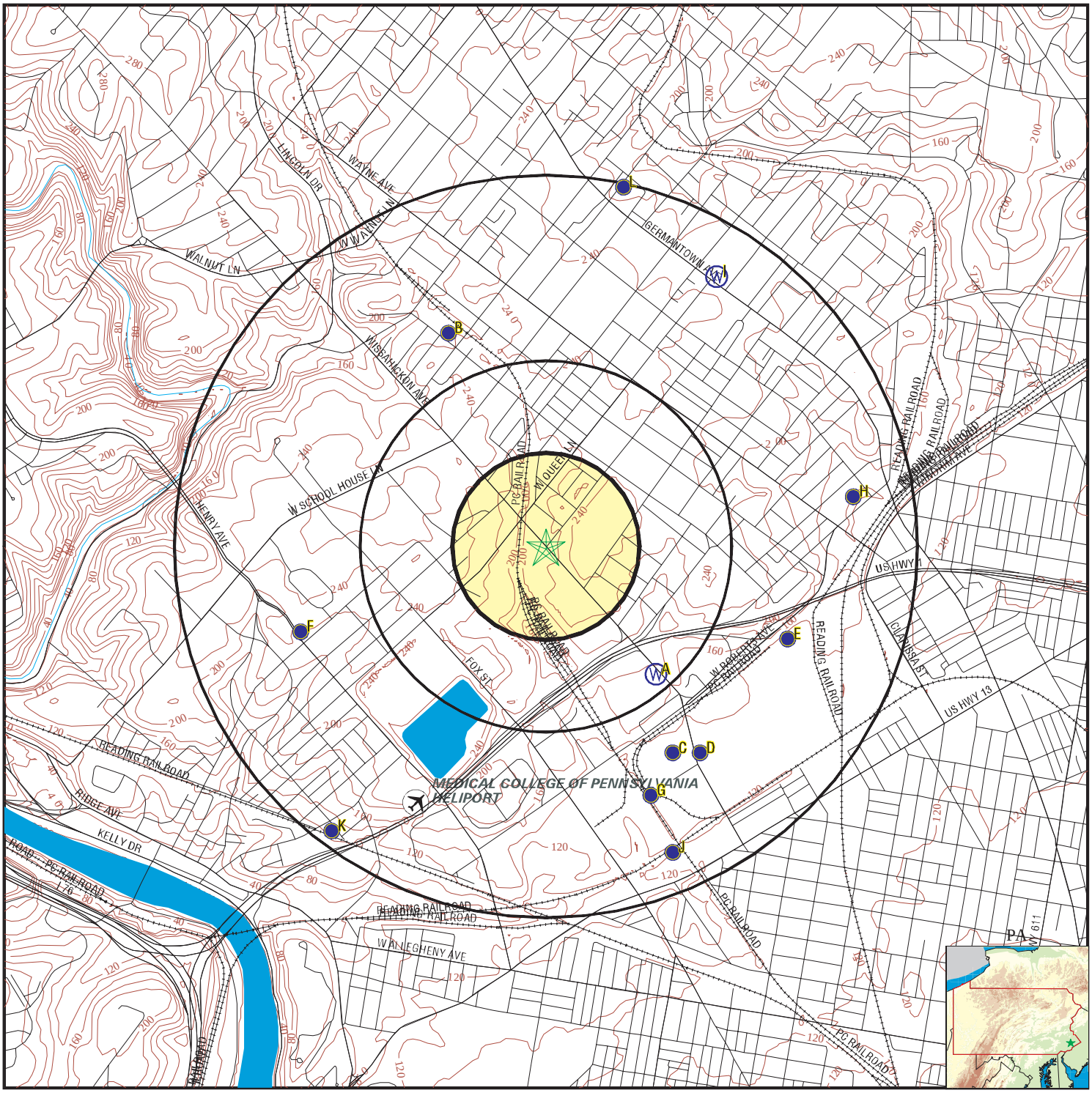
MAP ID	WELL ID	LOCATION FROM TP
A1	SPAW0161430	1/4 - 1/2 Mile SE
A2	PA1000000032524	1/4 - 1/2 Mile SE
B3	PA1000000034210	1/2 - 1 Mile NNW
C6	PA1000000032187	1/2 - 1 Mile SSE
D8	PA1000000032186	1/2 - 1 Mile SE
E9	PA1000000032712	1/2 - 1 Mile ESE
F11	PA1000000032749	1/2 - 1 Mile WSW
G13	PA1000000031990	1/2 - 1 Mile SSE
H15	PA1000000033461	1/2 - 1 Mile East
I17	SPAW0161399	1/2 - 1 Mile NNE
I18	PA1000000034409	1/2 - 1 Mile NNE
J20	PA1000000031712	1/2 - 1 Mile SSE
K22	PA1000000031817	1/2 - 1 Mile SW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
K23	PA1000000031854	1/2 - 1 Mile SW
K26	PA1000000031780	1/2 - 1 Mile SW
L28	PA1000000034768	1/2 - 1 Mile NNE
L30	PA1000000034806	1/2 - 1 Mile North

PHYSICAL SETTING SOURCE MAP - 01714247.224r



- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location

N

SITE NAME:	Germantown Veterans Memorial USARC	CLIENT:	CH2M Hill
ADDRESS:	5200 WISSAHICKON AVE PHILADELPHIA PA 19144	CONTACT:	Mary Beth Jacques
LAT/LONG:	40.0215 / 75.1769	INQUIRY #:	01714247.224r
		DATE:	July 12, 2006

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database | EDR ID Number

A1
SE
1/4 - 1/2 Mile
Lower

PA WELLS **SPAW0161430**

Well ID:	6920N		
Owner's Name:	GARRIS	County	MONROE
Latitude:	400059	Longitude:	751018
Quadrangle:	EAST STROUDSBURG	Lat/Long Accuracy:	ACCURATE TO +1 MINUTE
Hydrologic Unit:	02040104	Topographic Setting:	HILLSIDE
Water Usage:	DOMESTIC	Site Usage:	WITHDRAWAL
Well Depth:	195	Finish:	OPEN HOLE
Casing 1:	20	Casing1 Diameter(inches):	6
Casing2:	Not Reported	Casing2 Diameter(inches):	Not Reported
Grouted:	Not Reported	Date Drilled:	12-00-84
Static Water Level:	Not Reported	Production WL:	Not Reported
Yield (gpm):	6	Yield Measurement Method:	V
Drawdown:	Not Reported	Test Time:	Not Reported
Bedrock:	2	Driller:	1521
Water Bearing Zone 1:	104	Water Bearing Zone 2:	178
Water Bearing Zone 3:	Not Reported	Lithology:	SLATE
Municipality:	SMITHFIELD	Remark:	Not Reported
Aquifer:	BUTTERMILK FALLS FORMATION		

A2
SE
1/4 - 1/2 Mile
Lower

PA WELLS **PA1000000032524**

WELLID:	Not Reported	LOCALWELLN:	6920N
COUNTY:	MONROE		
AAPG:	344BMKF		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	195		
ELEVATION:	0		
ELEVMETHOD:	Not Reported		
ACCURACYOF:	Not Reported		
HYDROLOGIC:	02040104		
LATLONGACCURACY:	ACCURATE TO +1 MINUTE		
QUAD:	EAST STROUDSBURG		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	LOCATION MAY NOT BE ACCURATE (WWI paper)		
SOURCE DEPTH DATA:	DRILLER'S RECORD		
MUNICIPALITY:	SMITHFIELD TWP.		
LATITUDEDD:	40.01639		
LONGITUDED:	-75.17167		
DEPTHTOBED:	2		
DATEDRILLE:	Not Reported		
PAGWIS ID:	205948		

Construction Information:

Construction Date:	12/01/1984 00:00:00
Driller:	1521
Source Cons Data:	DRILLER'S RECORD
Method Cons:	Not Reported
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	20	Casing Diameter:	6
Casing:	Not Reported		

Geohydrologic Information:

A A P G:	344BMKF		
Lithology:	SL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	WITHDRAWAL
Water Use:	DOMESTIC

Owner Information:

Owner:	GARRIS
Date Ownership:	Not Reported

B3
NNW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000034210**

WELLID:	400147075105601	LOCALWELLN:	PH 581
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	204		
ELEVATION:	220		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040203		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.02972		
LONGITUDED:	-75.18222		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30306		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1908 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	26.7000007629395	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	DELMAR-MORRIS APTS
Date Ownership:	01/01/1908 00:00:00

B4
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS2168476**

Agency cd:	USGS	Site no:	400147075105601
Site name:	PH 581		
Latitude:	400147		
Longitude:	0751056	Dec lat:	40.02983413
Dec lon:	-75.18184451	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	220.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Schuylkill. Pennsylvania. Area = 1900 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19080101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	204	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1908-01-01	Ground water data end date:	1908-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1908-01-01	17.00	

C5
SSE **FED USGS** **USGS2168915**
1/2 - 1 Mile
Lower

Agency cd:	USGS	Site no:	400048075101502
Site name:	PH 577		
Latitude:	400048		
Longitude:	0751015	Dec lat:	40.01344557
Dec lon:	-75.1704555	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	140.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Schuylkill. Pennsylvania. Area = 1900 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19100101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	350	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1910-01-01	Ground water data end date:	1910-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1910-01-01	22.00	

C6
SSE **PA WELLS** **PA1000000032187**
1/2 - 1 Mile
Lower

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

WELLID:	400048075101502	LOCALWELLN:	PH 577
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	350		
ELEVATION:	140		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040203		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.01333		
LONGITUDED:	-75.17083		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30272		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1910 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	23	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	AMERICAN PULLEY CO
Date Ownership:	01/01/1916 00:00:00

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D7
SE
1/2 - 1 Mile
Lower

FED USGS **USGS2168914**

Agency cd:	USGS	Site no:	400048075101001
Site name:	PH 575		
Latitude:	400048		
Longitude:	0751010	Dec lat:	40.01344557
Dec lon:	-75.16906655	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	140.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Schuylkill. Pennsylvania. Area = 1900 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19090101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	301	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1909-01-01	Ground water data end date:	1909-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1909-01-01	25.00	

D8
SE
1/2 - 1 Mile
Lower

PA WELLS **PA1000000032186**

WELLID:	400048075101001	LOCALWELLN:	PH 575
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	301		
ELEVATION:	140		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040203		

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: GERMANTOWN
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 40.01333
LONGITUDED: -75.16944
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30271

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1909 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: 46 Casing Diameter: 8
Casing: UNKNOWN

Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: Not Reported Casing Diameter: 10
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0 Hole Diameter: 8

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: MIDVALE STEEL CO
Date Ownership: 01/01/1909 00:00:00

E9
ESE **PA WELLS** **PA1000000032712**
1/2 - 1 Mile
Lower

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

WELLID:	400104075095401	LOCALWELLN:	PH 574
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLTOP		
WELLDEPTH:	916		
ELEVATION:	140		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.01778		
LONGITUDED:	-75.165		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30288		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	02/01/1899 00:00:00
Driller:	-392
Source Cons Data:	OTHER/UNKNOWN/UNSPECIFIED
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	6
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	916	Hole Diameter:	6

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	MIDVALE STEEL CO
Date Ownership:	02/01/1899 00:00:00

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

E10
ESE
1/2 - 1 Mile
Lower | **FED USGS** | **USGS2168815**

Agency cd:	USGS	Site no:	400104075095401
Site name:	PH 574		
Latitude:	400104		
Longitude:	0750954	Dec lat:	40.01788991
Dec lon:	-75.16462182	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	140.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Hilltop		
Site type:	Ground-water other than Spring	Date construction:	18990201
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	916	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

F11
WSW
1/2 - 1 Mile
Higher | **PA WELLS** | **PA1000000032749**

WELLID:	400105075112301	LOCALWELLN:	PH 582
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLTOP		
WELLDEPTH:	185		
ELEVATION:	220		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040203		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.01806		
LONGITUDED:	-75.18972		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30289

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 07/01/1943 00:00:00
Driller: -387
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Bottom Of Casing: 27
Casing: UNKNOWN
Casing Wall Thickness: Not Reported
Casing Diameter: 6

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 27
Hole Diameter: 6

Top Of Hole: 27
Bottom Of Hole: 185
Hole Diameter: 8

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: KELLY JOHN
Date Ownership: 07/01/1943 00:00:00

F12
WSW
1/2 - 1 Mile
Higher

FED USGS **USGS2168819**

Agency cd: USGS
Site no: 400105075112301
Site name: PH 582
Latitude: 400105
Longitude: 0751123
Dec lat: 40.01816772
Dec lon: -75.18934511
Coor meth: M
Coor accr: S
Latlong datum: NAD27
Dec latlong datum: NAD83
District: 42
State: 42
County: 101
Country: US
Land net: Not Reported
Location map: GERMANTOWN
Map scale: 24000

Altitude:	220.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Schuylkill. Pennsylvania. Area = 1900 sq.mi.		
Topographic:	Hilltop		
Site type:	Ground-water other than Spring	Date construction:	19430701
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	185	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

G13
SSE **PA WELLS** **PA1000000031990**
1/2 - 1 Mile
Lower

WELLID:	400042075101901	LOCALWELLN:	PH 576
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	172		
ELEVATION:	140		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040203		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.01167		
LONGITUDED:	-75.17194		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30265		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1906 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	22.7999992370605	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	187	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	AMERICAN PULLEY CO
Date Ownership:	01/01/1906 00:00:00

G14
SSE **FED USGS** **USGS2168881**
1/2 - 1 Mile
Lower

Agency cd:	USGS	Site no:	400042075101901
Site name:	PH 576		
Latitude:	400042		
Longitude:	0751019	Dec lat:	40.01177894
Dec lon:	-75.1715667	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	140.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Schuylkill. Pennsylvania. Area = 1900 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19060101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	172	Hole depth:	187
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1954-12-01	Ground water data end date:	1954-12-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1954-12-01	21.78	

H15
East
1/2 - 1 Mile
Lower

PA WELLS **PA1000000033461**

WELLID:	400124075094201	LOCALWELLN:	PH 567
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	275		
ELEVATION:	140		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	5		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.02333		
LONGITUDED:	-75.16167		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30545		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1912 00:00:00
Driller:	1
Source Cons Data:	OTHER/UNKNOWN/UNSPECIFIED
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	36	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	275	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	UNUSED
Water Use:	UNUSED

Owner Information:

Owner:	MOORE PUSH PIN CO
Date Ownership:	01/01/1912 00:00:00
Owner:	STAPLES JOHN
Date Ownership:	01/10/1979 00:00:00

H16
East
1/2 - 1 Mile
Lower

FED USGS **USGS2168735**

Agency cd:	USGS	Site no:	400124075094201
Site name:	PH 567		
Latitude:	400124		
Longitude:	0750942	Dec lat:	40.02344534
Dec lon:	-75.16128822	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	140.00	Altitude method:	M
Altitude accuracy:	5	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19120101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	275	Hole depth:	300
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-11-29
Water quality data end date:	1980-07-07	Water quality data count:	2
Ground water data begin date:	1979-01-10	Ground water data end date:	1979-01-10
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1979-01-10	10.96	

I17
NNE
1/2 - 1 Mile
Higher

PA WELLS **SPAW0161399**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Well ID:	3513N		
Owner's Name:	DIMARCO A	County	MONROE
Latitude:	400155	Longitude:	751007
Quadrangle:	EAST STROUDSBURG	Lat/Long Accuracy:	ACCURATE TO +1 MINUTE
Hydrologic Unit:	02040104	Topographic Setting:	HILLSIDE
Water Usage:	DOMESTIC	Site Usage:	WITHDRAWAL
Well Depth:	400	Finish:	OPEN HOLE
Casing 1:	39	Casing1 Diameter(inches):	6
Casing2:	Not Reported	Casing2 Diameter(inches):	Not Reported
Grouted:	Not Reported	Date Drilled:	11-22-77
Static Water Level:	170	Production WL:	340
Yield (gpm):	10	Yield Measurement Method:	Not Reported
Drawdown:	340	Test Time:	1.5
Bedrock:	34	Driller:	264
Water Bearing Zone 1:	376	Water Bearing Zone 2:	394
Water Bearing Zone 3:	Not Reported	Lithology:	LIMESTONE
Municipality:	SMITHFIELD	Remark:	LAKE VALHALLA LOT 214
Aquifer:	MAHANTANGO FORMATION		

I18
NNE **PA WELLS** **PA1000000034409**
1/2 - 1 Mile
Higher

WELLID:	Not Reported	LOCALWELLN:	3513N
COUNTY:	MONROE		
AAPG:	344MNNG		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	400		
ELEVATION:	0		
ELEVMETHOD:	Not Reported		
ACCURACYOF:	Not Reported		
HYDROLOGIC:	02040104		
LATLONGACCURACY:	ACCURATE TO +1 MINUTE		
QUAD:	EAST STROUDSBURG		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	LOCATION MAY NOT BE ACCURATE (WWI paper)		
SOURCE DEPTH DATA:	DRILLER'S RECORD		
MUNICIPALITY:	SMITHFIELD TWP.		
LATITUDEDD:	40.03194		
LONGITUDED:	-75.16861		
DEPTHTOBED:	34		
DATEDRILLE:	Not Reported		
PAGWIS ID:	205917		

Construction Information:

Construction Date:	11/22/1977 00:00:00
Driller:	264
Source Cons Data:	DRILLER'S RECORD
Method Cons:	Not Reported
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	39	Casing Diameter:	6
Casing:	Not Reported		

Geohydrologic Information:

A A P G:	344MNNG		
Lithology:	LS		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	WITHDRAWAL
Water Use:	DOMESTIC

Owner Information:

Owner:	DIMARCO A
Date Ownership:	Not Reported

Remarks Information:

Remark:	LAKE VALHALLA LOT 214
Remark Date:	Not Reported

J19
SSE **FED USGS** **USGS2168992**
1/2 - 1 Mile
Lower

Agency cd:	USGS	Site no:	400034075101501
Site name:	PH 586		
Latitude:	400034		
Longitude:	0751015	Dec lat:	40.00955676
Dec lon:	-75.17045559	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	120.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Schuylkill. Pennsylvania. Area = 1900 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19140101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	419	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1914-00-00	Ground water data end date:	1979-01-16
Ground water data count:	3		

Ground-water levels, Number of Measurements: 3

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1979-01-16	17.48		1955-01-10	14.05	
1914	18				

J20
SSE **PA WELLS** **PA1000000031712**
1/2 - 1 Mile
Lower

WELLID:	400034075101501	LOCALWELLN:	PH	586
COUNTY:	PHILADELPHIA			
AAPG:	300WSCKO			
TOPOGRAPHY:	HILLSIDE			
WELLDEPTH:	419			
ELEVATION:	120			
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP			
ACCURACYOF:	10			
HYDROLOGIC:	02040203			
LATLONGACCURACY:	ACCURATE TO +1 SECOND			
QUAD:	GERMANTOWN			
TYPEOFSITE:	WELL			
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported	
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)			
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED			
MUNICIPALITY:	PHILADELPHIA			
LATITUDEDD:	40.00944			
LONGITUDED:	-75.17083			
DEPTHTOBED:	0			
DATEDRILLE:	Not Reported			
PAGWIS ID:	30247			

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1914 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	1	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	22	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	UNUSED
Water Use:	UNUSED

Owner Information:

Owner:	THE BUDD CO
Date Ownership:	01/10/1955 00:00:00

K21
SW
1/2 - 1 Mile
Lower

FED USGS **USGS2168835**

Agency cd:	USGS	Site no:	400037075111701
Site name:	PH 579		
Latitude:	400037		
Longitude:	0751117	Dec lat:	40.01039011
Dec lon:	-75.18767855	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	130.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Schuylkill. Pennsylvania. Area = 1900 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19150101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	302	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

K22
SW
1/2 - 1 Mile
Lower

PA WELLS **PA1000000031817**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

WELLID:	400037075111701	LOCALWELLN:	PH 579
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	302		
ELEVATION:	130		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040203		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.01028		
LONGITUDED:	-75.18806		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30256		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1915 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	21	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	UNUSED
Water Use:	UNUSED

Owner Information:

Owner:	HOHENADEL BREWERY IN
Date Ownership:	01/01/1915 00:00:00

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

K23
SW
1/2 - 1 Mile
Lower

PA WELLS **PA1000000031854**

WELLID:	400038075111901	LOCALWELLN:	PH 580
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	200		
ELEVATION:	130		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040203		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.01056		
LONGITUDED:	-75.18861		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30260		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1915 00:00:00		
Driller:	-204		
Source Cons Data:	DRILLER'S RECORD		
Method Cons:	CABLE TOOL		
Finish:	OPEN HOLE		

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	30	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	HOHENADEL BREWERY IN
Date Ownership:	01/01/1915 00:00:00

K24
SW
1/2 - 1 Mile
Lower

FED USGS **USGS2168846**

Agency cd:	USGS	Site no:	400038075111901
Site name:	PH 580		
Latitude:	400038		
Longitude:	0751119	Dec lat:	40.01066788
Dec lon:	-75.18823413	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	130.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Schuylkill. Pennsylvania. Area = 1900 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19150101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	200	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

K25
SW
1/2 - 1 Mile
Lower

FED USGS **USGS2169001**

Agency cd:	USGS	Site no:	400036075111601
Site name:	PH 578		
Latitude:	400036		
Longitude:	0751116	Dec lat:	40.01011234
Dec lon:	-75.18740077	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	130.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Schuylkill. Pennsylvania. Area = 1900 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19100101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	252	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1910-01-01	Ground water data end date:	1910-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1910-01-01	65.00	

K26
SW
1/2 - 1 Mile
Lower

PA WELLS **PA1000000031780**

WELLID:	400036075111601	LOCALWELLN:	PH 578
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	252		
ELEVATION:	130		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040203		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.01		
LONGITUDED:	-75.18778		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30250

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1910 00:00:00
Driller: -204
Source Cons Data: OTHER/UNKNOWN/UNSPECIFIED
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	40	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: HOHENADEL BREWERY IN
Date Ownership: 01/01/1910 00:00:00

L27
NNE **FED USGS** **USGS2168404**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	400207075102201
Site name:	PH 561		
Latitude:	400207		
Longitude:	0751022	Dec lat:	40.03538955
Dec lon:	-75.17239954	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	220.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19150101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	330	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1915-01-01	Ground water data end date:	1915-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1915-01-01	24.00	

L28
NNE **PA WELLS** **PA1000000034768**
1/2 - 1 Mile
Higher

WELLID:	400207075102201	LOCALWELLN:	PH 561
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	330		
ELEVATION:	220		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.03528		
LONGITUDED:	-75.17278		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30315		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1915 00:00:00
Driller:	-204
Source Cons Data:	OTHER/UNKNOWN/UNSPECIFIED
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	8	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	CHELTEN ICE CO
Date Ownership:	01/01/1915 00:00:00

L29
North
1/2 - 1 Mile
Higher

FED USGS **USGS2168409**

Agency cd:	USGS	Site no:	400208075102601
Site name:	PH 801		
Latitude:	400208		
Longitude:	0751026	Dec lat:	40.03566732
Dec lon:	-75.17351069	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	GERMANTOWN	Map scale:	24000
Altitude:	222.00	Altitude method:	M
Altitude accuracy:	5	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19190101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	125	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	444209600
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1980-11-05	Ground water data end date:	1980-11-05
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1980-11-05	15.79	

L30
North
1/2 - 1 Mile
Higher

PA WELLS **PA1000000034806**

WELLID:	400208075102601	LOCALWELLN:	PH 801
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	HILLSIDE		
WELLDEPTH:	125		
ELEVATION:	220		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	5		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	GERMANTOWN		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	40.03556		
LONGITUDED:	-75.17389		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30316		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1919 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	6	Casing Diameter:	8
Casing:	STEEL		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Water Use Information:

Site Use:	UNUSED
Water Use:	UNUSED

Owner Information:

Owner:	ASHER CHESTER
Date Ownership:	01/01/1919 00:00:00

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: PA Radon

Test Result Statistics

Zip	Total Sites	Min pCi/L	Max pCi/L	Avg pCi/L
19144	419	.1	248.4	4.1

EPA Region 3 Statistical Summary Readings for Zip Code: 19144

Number of sites tested: 570.

Maximum Radon Level: 2076.0 pCi/L.
Minimum Radon Level: 0.3 pCi/L.

pCi/L <4	pCi/L 4-10	pCi/L 10-20	pCi/L 20-50	pCi/L 50-100	pCi/L >100
491 (86.14%)	48 (8.42%)	22 (3.86%)	6 (1.05%)	2 (0.35%)	1 (0.18%)

Federal EPA Radon Zone for PHILADELPHIA County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Pennsylvania Public Water Supply Wells
Source: Pennsylvania Department of Environmental Resources Bureau of Water Supply
Telephone: 717-787-5017

Pennsylvania Groundwater Information System
Source: Department of Conservation and Natural Resources
Telephone: 717-783-7258

OTHER STATE DATABASE INFORMATION

RADON

State Database: PA Radon
Source: Department of Environmental Protection
Telephone: 717-783-3594
Radon Test Results Statistics by Zip Code

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

EPA Region 3 Statistical Summary Readings
Source: Region 3 EPA
Telephone: 215-814-2082
Radon readings for Delaware, D.C., Maryland, Pennsylvania, Virginia and West Virginia.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

STREET AND ADDRESS INFORMATION

Fax To: CH2M Hill
Contact: Mary Beth Jacques
Fax : 404-229-9152
Date: 07/12/2006

Fax From: Bart Sobieralski
EDR
Phone: 1-800-352-0050

EDR PUR-IQ® Report

"the intelligent way to conduct historical research"

for
Germantown Veterans Memorial USARC
5200 WISSAHICKON AVE
PHILADELPHIA, PA 19144
Lat./Long. 40.02150 / 75.17690
EDR Inquiry # 01714247.224r

The EDR PUR-IQ report facilitates historical research planning required to complete the Phase I ESA process. The report identifies the *likelihood* of prior use coverage by searching proprietary EDR-Prior Use Reports® comprising nationwide information on: city directories, fire insurance maps, aerial photographs, historical topographic maps, flood maps and National Wetland Inventory maps.

Potential for EDR Historical (Prior Use) Coverage - Coverage in the following historical information sources may be used as a guide to develop your historical research strategy:

1. City Directory:	Coverage exists for the TP address for 1967, 1972, 1993, 2001
2. Fire Insurance Map:	When you order online any EDR Package or the EDR Radius Map with EDR Sanborn Map Search/Print, you receive site specific Sanborn Map coverage information at no charge.
3. Aerial Photograph:	Coverage exists for portions of Philadelphia County for 1942, 1973, 1986, 1995 Shipping time 3-5 business days.
4. Topographic Map:	The USGS 7.5 min. quad topo sheet(s) associated with this site:

Historical: Coverage exists for Philadelphia County

Current: Target Property: TP | 1997 | 40075-A2 Germantown, PA

EDR's network of professional researchers, located throughout the United States, accesses the most extensive national collections of city directory, fire insurance maps, aerial photographs and historical topographic map resources available for PHILADELPHIA, PA. These collections may be located in multiple libraries throughout the country. To ensure maximum coverage, EDR will often assign researchers at these multiple locations on your behalf. Please call or fax your EDR representative to authorize a search.

EDR - HISTORICAL SOURCE(S) ORDER FORM

CH2M Hill
Mary Beth Jacques
Account # 1592163

Germantown Veterans Memorial USARC
5200 WISSAHICKON AVE
PHILADELPHIA, PA 19144
Philadelphia County
Lat./Long. 40.02150 / 75.17690
EDR Inquiry # 01714247.224r

Should you wish to change or add to your order, fax this form to your EDR account executive:

Bart Sobieralski
Ph: 1-800-352-0050 Fax: 1-800-231-6802

Reports

___ EDR Sanborn Map® Search/Print

___ EDR Fire Insurance Map Abstract

___ EDR Multi-Tenant Retail Facility® Report

___ EDR City Directory Abstract

___ EDR Aerial Photo Decade Package

___ USGS Aerial 5 Package

___ USGS Aerial 3 Package

___ EDR Historical Topographic Maps

___ Paper Current USGS Topo (7.5 min.)

___ Environmental Lien Search

___ Chain of Title Search

___ NJ MacRaes Industrial Directory Report

___ EDR Telephone Interview

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Thank you

The EDR-City Directory
Abstract

Germantown Veterans Memorial USARC
5200 WISSAHICKON AVE
PHILADELPHIA, PA 19144

Inquiry Number: 1714247.228

Wednesday, July 12, 2006

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1920 through 2001. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

This report compiles information by geocoding the subject properties (that is, plotting the latitude and longitude for such subject properties and obtaining data concerning properties within 1/16th of a mile of the subject properties). There is no warranty or guarantee that geocoding will report or list all properties within the specified radius of the subject properties and any such warranty or guarantee is expressly disclaimed. Accordingly, some properties within the aforementioned radius and the information concerning those properties may not be referenced in this report.

Date EDR Searched Historical Sources: July 12, 2006

Target Property:
5200 WISSAHICKON AVE
PHILADELPHIA, PA 19144

Year	*Uses*	*Source*
1920	Address Not Listed in Research Source	THE BELL TELEPHONE COMPANY OF PENNSYLVANIA
1925	Address Not Listed in Research Source	R. L. Polk & Company of Philadelphia
1930	Address Not Listed in Research Source	R. L. Polk & Co. of Philadelphia
1936	Address Not Listed in Research Source	City Directory Inc., of Philadelphia
1946	Address Not Listed in Research Source	The Bell Telephone Company of Pennsylvania
1950	Address Not Listed in Research Source	The Bell Telephone Company of Pennsylvania
1954	Address Not Listed in Research Source	The Bell Telephone Company of Pennsylvania
1967	****WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	U S GOVERNMENT OF (5200)	
	U S GOVERNMENT OF (5200)	
	U S GOVERNMENT OF (5200)	
	U S GOVERNMENT OF (5200)	
	U S GOVERNMENT OF (5200)	
	U S GOVERNMENT OF (5200)	
	U S GOVERNMENT OF (5200)	
	U S GOVERNMENT OF (5200)	
1972	****WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	U S GOVERNMENT OF (CONRTD DEFENSE DEPT OF (CONT WD ARMY (COA (5200)	
	U S GOVERNMENT OF (CONRTD DEFENSE DEPT OF (CONT WD ARMY (COA (5200)	
	US ARMY ADV (5200)	
	USAR CTR COMDR (5200)	

Year	Uses	Source
1972 (continued)		
	USAR CTR COMDR (5200)	
	USAR CTR COMDR (5200)	
	USAR CTR COMDR (5200)	
	USAR CTR COMDR (5200)	
1977	Address Not Listed in Research Source	The Bell Telephone Company of Pennsylvania
1982	Address Not Listed in Research Source	THE BELL TELEPHONE COMPANY OF PENNSYLVANIA
1993	Address Not Listed in Research Source	The Bell Telephone Company of Pennsylvania
2001	****WISSAHICKON AVE****	Cole Information Services
	ARMY DEPT RESERVE (5200)	

Adjoining Properties

SURROUNDING

Multiple Addresses
PHILADELPHIA, PA 19144

Year	Uses	Source
1920	****HANSBERRY ST****	THE BELL TELEPHONE COMPANY OF PENNSYLVANIA
	TILDEN WIN T2D H (519)	
	BARNES CONSTANCE H (521)	
	BILISAORE MARY AID SANFORD H (525)	
	REAPS THEA B MGR NIAGARA LITHOGRAPH CE (525)	
	WEST MORTIMER 3D H (527)	
	RICLIIONDL WARREN II (529)	
	****WISSAHICKON AVE****	THE BELL TELEPHONE COMPANY OF PENNSYLVANIA
	PARLEY HENRTY IT1 LAWYER (5237)	
1925	Address Not Listed in Research Source	R. L. Polk & Company of Philadelphia
1930	****WISSAHICKON AVE NW****	R. L. Polk & Co. of Philadelphia
	VACANT (5215)	
	POOLE J MORTON 3D (5215)	
	VACANT (5217)	
	VACANT (5219)	
	SNOWDEN MARY MRS (5219)	
	VACANT (5221)	

Year	Uses	Source
1930 (continued)	QUICK GEO M (5221)	
	KNIGHT B HOFF (5223)	
	FINN WM W (5223)	
	VACANT (5225)	
	VACANT (5225)	
	BROWNING THOS M (5227)	
	VACANT (5227)	
	METZGER LEWIS W (5229)	
	VACANT (5229)	
	VACANT (5231)	
	PEARSON CHAS A JR (5231)	
	PORTER G ELLIS (5233)	
	VACANT (5233)	
	TWEED JEAN (5235)	
	VACANT (5235)	
	VACANT (5237)	
	COLKET E BURTON (5237)	
	CRAWLEY ETHEL MRS (5239)	
	EDMONDS JOHN MRS (5239)	
	VACANT (5247)	
	KIRKPATRICK CHAS G (5249)	
	KIRKPATRICK LILY L CIGARS (5249)	
1936	****HANSBERRY ST****	City Directory Inc., of Philadelphia
	HEY M(ELIZ)H (519)	
	HEY RELINER (519)	
	TILO WE T JRR (519)	
	STRICKLAND AISOS (CLARA) TRAINASTRH (521)	
	TITLE HARRIET BR (521)	
	H (523)	
	H S L R (523)	
	LOBER IT LILLIAS YR SOCIAL WKRR (523)	
	LOBER MABEL L STUDENTR (523)	
	R (523)	
	TILO WA T 3DR (525)	
	R (531)	
	****WISSAHLCKON AVE****	City Directory Inc., of Philadelphia

Year	Uses	Source
1936 (continued)	HOCKE WA 0R (5233)	
	****WISSAHICKON AVE****	City Directory Inc., of Philadelphia
	R (5217)	
	N EDS F JR R (5221)	
	R (5223)	
	BROWNING THOS MR (5227)	
	WILSON M (MARY) ALA NORTH PHILE TICKET OFFICE PEONA RAILROAD (5229)	
	SHALMIRE T DOROTHY EASST TO SUPT OF ADMISSION & DISCHARGE GE (5229)	
1946	****W HANSBERRY ST****	The Bell Telephone Company of Pennsylvania
	FILLINAN ISABEL (535)	
	****HANSBERRY ST****	The Bell Telephone Company of Pennsylvania
	BA ILEY WALTER I- (519)	
	LOBER WIN H MRS (523)	
	MACKINTOSH CT (525)	
	PALMER J H LT (525)	
	COX RICLIDS (527)	
	SPRINTIG GARDENA SOUP SOCIETY (529)	
	ILLEN B M (533)	
	****WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	BEARD WINL K M (5215)	
	KNIGHT ANNA F H (5217)	
	YEA MARIE HEORY MRS (5217)	
	ELLIOLT W CLARE MRS (5221)	
	METZGEF LEWIS W (5221)	
	AUTISTIN JAS IV MRIS (5223)	
	COLL JAS J (5225)	
	BROWNILUNG THOS M (5227)	
	BLAIR J EDGAR MRS (5229)	
	FAWCETT SARA F MRS (5229)	
	FLEMMING D W MRS (5229)	
	GREENFIELD GOLDYE (5233)	
	BLACK MVARY F (5235)	
	HERBST CHAS E (5235)	
	COLKET E BARTON MRS (5237)	

Year	Uses	Source
1946 (continued)		
	****WISSAHICKON PL****	The Bell Telephone Company of Pennsylvania
	GILMORE LAS (5227)	
1950	****W HANSBERRY ST****	The Bell Telephone Company of Pennsylvania
	SCHMITT URBAN C (519)	
	CREEDEN CORNELIUS S (521)	
	MARTIN EDW JAS (521)	
	GREGORY HENRY (531)	
	FILLMAN ISABEL (535)	
	****WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	TUCKER JOS W (5215)	
	COLBORN FLORENCE S (5217)	
	INGRAM ERIC S (5217)	
	CLARK RICHD J (5219)	
	HELPERIN LEW (5221)	
	AUSTIN JAS MMRS (5223)	
	HOOKER BERNADINE M MRS (5223)	
	BROWNING THOS M (5227)	
	WARE M (5231)	
	ZAISER MARIE (5231)	
	CULLEN JAS P (5233)	
	HERBST CHAS E (5235)	
	TWEED JEAN M (5235)	
1954	****W HANSBERRY ST****	The Bell Telephone Company of Pennsylvania
	SCHMITT URBAN C (519)	
	CREEDEN CORNELIUS S (521)	
	HOLDEN RUTH G (521)	
	LOSCAIZO EUGENIE M (523)	
	JOSEPHS JEAN MRS (531)	
	DUDEK JOS R (533)	
	FLLLMAN ISABEL (535)	
	****HANSBERRY ST****	The Bell Telephone Company of Pennsylvania
	GERMAN JAS P (521)	
	MARQUISSEE VICTOR G (525)	
	WI IG HT MI ITON R (531)	
	RODRIGUEZ LARRY (535)	

Year	Uses	Source
1954 (continued)		
	****WISSAHCKN AVE****	The Bell Telephone Company of Pennsylvania
	1CASE CHAS F (5223)	
	MASSEY ILLINGWORTH MRS (5243)	
	****W WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	SMITH LESTER (5215)	
	WIENER MARVIN (5215)	
	KEITH RICHD C (5217)	
	CLARK RICHD J (5219)	
	PARSONS AL ICE (5225)	
	HUGHES ANNE M (5231)	
	FRDE NORMAN A (5235)	
	WEST FRANCIS D (5237)	
	CRYER STANLEY N (5239)	
	****WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	VERBIT HENRV P (5219)	
	HELPERIN LEW (5221)	
	MARKS LOUIS (5221)	
	CASE ELIZABETH B (5223)	
	HERBSTER CARL A (5223)	
	COLL JAS J (5225)	
	HERBST CHAS E (5227)	
	ST LOWART TIIOS D W (5227)	
	JOHNSON CHAS B (5229)	
	WALKER FRANK L (5229)	
	WARE M (5231)	
	ZALSER MAI TE (5231)	
	CULLEN JAS P (5233)	
	TWEED JEAN M (5235)	
	****WISSAHICKON DR****	The Bell Telephone Company of Pennsylvania
	WALKER EL IZABETLI H (5217)	
	METZGER MAE A (5237)	
1967	****W HANSBERRY ST****	The Bell Telephone Company of Pennsylvania
	SCHMITT JOHN BRUCE (519)	
	SIMPSON DOROTHY A (521)	
	LOSCALZO DAVID A JR (523)	

Year	Uses	Source
1967 (continued)		
	BURNAM LUVENIA MRS (529)	
	FILLMAN ISABEL (535)	
	****HANSBERRY ST****	The Bell Telephone Company of Pennsylvania
	WAKELEY FRANCIS A (519)	
	WESTON JOHN G (525)	
	WESTON JOS T (525)	
	****WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	DONAHUE PHILIP P (5215)	
	STURKEY MARJORIE T (5215)	
	WOOD FRANCIS J (5215)	
	RANKIN LOUISE C (5217)	
	WALKER ELIZABETH H (5217)	
	FAMULARO JOHN D (5219)	
	SANSOM GARY L (5221)	
	CASE ELIZABETH B (5223)	
	HERBSTER CARL A (5223)	
	MOBERG BARBARA I (5223)	
	ANGLE M P (5225)	
	COLL JAS J (5225)	
	HERBST CHAS E (5227)	
	STEWART ANNE L MRS (5227)	
	JOHNSON CHAS B (5229)	
	WALKER FRANK L (5229)	
	COLBECK HAROLD (5231)	
	HANCE HAZEL A (5231)	
	KELLY J RAY (5233)	
	KELLY JOHN R (5233)	
	MCBETH WM B (5233)	
	HINDMAN ANN M (5235)	
	VELMERS VILHELMINE (5235)	
	SLADEK CHAS (5237)	
	ANDERSON EDNA E (5239)	
	NINO RICHD (5245)	
1972	****W HANSBERRY ST****	The Bell Telephone Company of Pennsylvania
	SMITH ROBT L (519)	

Year	Uses	Source
1972 (continued)	LOSCAIZO E M (523)	
	****HANSBERRY ST****	The Bell Telephone Company of Pennsylvania
	ALEXANDER BEATRICE (519)	
	BYRAM C A (521)	
	DODSON CLARK (521)	
	WESTON JOHN G (525)	
	BOWMAN RICHD (531)	
	****S WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	HSIAO JU-YING (5233)	
	****WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	DONAHUE PHILIP P (5215)	
	DESSERT EDW (5217)	
	KELLY NANCY (5217)	
	FAMULARO JOHN D (5219)	
	DOUGHERTY GERALD P (5221)	
	REID ARCHIE (5221)	
	WOODS OLIVER JR (5223)	
	HERBST CHAS E (5227)	
	STEWART ANNE L MRS (5227)	
	JOHNSON CHAS B (5229)	
	COLBECK HAROLD (5231)	
	HANCE BROS & WHITE GO (5231)	
	KELLY JOHN R (5233)	
	HINDMAN ANN M (5235)	
	VELMERS VILHELMINE (5235)	
	BELL MARK (5237)	
	CHINTELLA KEN (5237)	
	JORALEMON HOWARD (5237)	
	PRICE DONALD (5237)	
	WILKS DONALD (5243)	
	NINA RICHD (5245)	
	****WISSAHICKON DR****	The Bell Telephone Company of Pennsylvania
	ROBBING LAURENCE T (5235)	
1977	****WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	BOLDEN GEORGETTE (5215)	

Year	Uses	Source
1977 (continued)		
	COHEN D (5215)	
	DOVERBEOL LEEJR (5219)	
	BROWN A (5223)	
	COLBECK HAROLD (5231)	
1982	****W HANSBERRY ST****	THE BELL TELEPHONE COMPANY OF PENNSYLVANIA
	SMITH ROBT L (519)	
	DEBRADY EDW (529)	
	STANFORD H AHADA (529)	
	JESTER Y (533)	
	TOOMER RENEE (533)	
	****WISSAHICKON AVE****	THE BELL TELEPHONE COMPANY OF PENNSYLVANIA
	BOLDEN GEORGETTE (5215)	
	FEGGANS H (5217)	
	KEARNEY MATTIE (5217)	
	FENDRICK ROSA R (5221)	
	BROWN A (5223)	
	WOODS OLIVER JR (5223)	
	COIL JAS J (5225)	
	HANCE H A (5231)	
	KEELER ROBT JACKSON (5231)	
	KELLY JOHN R (5233)	
	MCLLVANE JOHN (5235)	
	SAUTER JERRY (5235)	
	VELMERS VILHELMINE (5235)	
	COTTEN CRYSTAL (5237)	
	DAVIS GEORGIA A (5237)	
	URBAN JOHN (5237)	
	SIMMONS ELLA L (5239)	
	GROSSMAN GARY MICHAEL (5243)	
1993	****WISSAHICKON AVE****	The Bell Telephone Company of Pennsylvania
	DECK WM W (5217)	
	JOHNSON R (5217)	
	HALL SOLEBO KAREN (5221)	
	IKLY JOHN R (5233)	
	SPANN CAROLE (5233)	

Year	Uses	Source
1993 (continued)	REGUSTERS MICHAEL E (5243)	
	TAYLOR RANDOLPH (5245)	
	****WISSAHICKON DR****	The Bell Telephone Company of Pennsylvania
	DECK LOUISE (5217)	
2001	****W HANSBERRY ST****	Cole Information Services
	JAKKI BROWNER (523)	
	JOHN G WESTON (525)	
	N R WESTON (525)	
	BLUMMER CURRY 33 U (527)	
	RENEE TOOMER (533)	
	Y JESTER80 (533)	
	****WISSAHICKON AVE****	Cole Information Services
	W GRANT (5215)	
	LOUISE S DECK (5217)	
	WILLIAM W DECK (5217)	
	B L SCHOFIELD (5221)	
	5225 NP (5223)	
	2EARL E SANDERLIN (5227)	
	APARTMENTS ANNLOUISE BRNWN (5227)	
	N V WILLIAMS (5229)	
	TONY M BAYLOR (5229)	
	5233 NP (5231)	
	GEORGE CAVINESS JR (5235)	
	V C GWYNN (5235)	
	MARY L WHITE (5237)	
	U U ARIAY (5237)	
	CHARLES H PENNICK (5243)	
	CHARLES PENNICK (5243)	
	5250 NP (5245)	