

**Armed Forces Retirement Home  
(AFRH) Development Site - Phase I  
Environmental Site Assessment**



Prepared for:  
Armed Forces Retirement Home  
3700 N. Capitol St. NW  
Washington, DC 20011  
and  
U.S. General Services Administration  
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Project No.: 2028113047.300

August 14, 2015



# Sign-off Sheet and Signatures of Environmental Professionals

This document entitled Armed Forces Retirement Home (AFRH) Development Site - Phase I Environmental Site Assessment was prepared by Stantec Consulting Services Inc. (Stantec) for the account of Jones Lang LaSalle Americas, Inc. The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

All information, conclusions, and recommendations provided by Stantec in this document regarding the Phase I ESA have been prepared under the supervision of and reviewed by the professionals whose signatures appear below.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property. I have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Prepared by \_\_\_\_\_ (signature)

**Charles R. McEleney**  
**Environmental Scientist**



Reviewed by \_\_\_\_\_ (signature)

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**Environmental Scientist**



Approved by \_\_\_\_\_ (signature)

**Joan Glynn**  
**Senior Principal**

# Sign-off Sheet and Signatures of Environmental Professionals

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**ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**

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## Abbreviations

AAI	All Appropriate Inquiry
ACM	Asbestos containing material
AFRH	Armed Forces Retirement Home
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BER	Business Environmental Risk
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CREC	Controlled Recognized Environmental Conditions
CWA	Clean Water Act
DDOE	District Department of the Environment
DRO	Diesel Range Organics
ELUC	Environmental Land Use Control
EP	Environmental Professional
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
ft msl	Feet above mean sea level
GRO	Gasoline Range Organics
HREC	Historical Recognized Environmental Conditions
HWMU	Hazardous Waste Management Unit
LBP	Lead-based Paint
LUST	Leaking Underground Storage Tank
MCL	Maximum Contaminant Level
NESHAP	National Emissions Standard for Hazardous Air Pollutants
NFRAP	No Further Remedial Action Planned
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PCE	Perchloroethylene
pVEC	Potential Vapor Encroachment Condition
RBC	Risk Based Concentration
RBSL	Risk Based Screening Level
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
SWMU	Solid Waste Management Unit
TCE	Trichloroethene

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TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substance Control Act
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

# ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL SITE ASSESSMENT

## SUMMARY

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### 1.0 SUMMARY

Stantec has completed a Phase I Environmental Site Assessment (ESA) of an 80-acre property located within the 276-acre campus of the Armed Forces Retirement Home (AFRH) at 3700 North Capitol Street NW, Washington, DC 20011 (the "Property"), on behalf of Jones, Lang, LaSalle Americas, Inc. (the "Client") and the AFRH. The work was performed according to Stantec's proposal and terms and conditions dated November 12, 2014. The AFRH c/o Jones Lang LaSalle Americas, Inc. is designated as the User of this report.

The Phase I ESA was conducted in conformance with the requirements of American Society for Testing and Materials (ASTM) Designation E 1527-13, except as may have been modified by the scope of work, and terms and conditions, requested by the Client. Any exceptions to, or deletions from, the ASTM practice are described in Section 2.3.

The AFRH Development Site consists of approximately 80 acres located in the southeastern portion of the AFRH campus. The property is occupied by approximately 30 vacant buildings of various age, size and description, including: a central heating plant, substations, warehouses, shop buildings, greenhouses, office buildings, medical care and residential buildings. The buildings are arranged in two clusters which are designated as the *Service Area* in the eastern portion of the site and the *King Health Center* in the western portion of the site. The Property has been part of the campus for a retirement home that was established in 1851 for U.S. military personnel. Surrounding properties are characterized primarily by institutional land use and include school and college campuses, hospitals, cemeteries and religious sites. A Property location map is provided as Figure 1. A Property vicinity map is provided as Figure 2. Site detail diagrams are provided for the King Health Center and the Service Area as Figures 3A and 3B, respectively. Photographs taken during the site reconnaissance visit are provided in Appendix A.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 for the property identified as the AFRH Development Site, located at 3400 N. Capitol Street, Washington, DC. Any exceptions to, or deletions from, this practice are described in the Data Gaps section of this report. This assessment has revealed no evidence of recognized environmental conditions (RECs) in connection with the property except for the following:

- Prior sampling and analysis indicates that soil is impacted with naphthalene and groundwater is impacted by chlorinated solvents and other volatile organic compounds (VOCs) in the vicinity of Building 46. The contamination is attributed to past laundry and dry cleaning operations.
- Prior sampling and analysis indicates that soil is impacted with total petroleum hydrocarbons (TPH) diesel range organics (DRO) in the vicinity of Building 76, which is a former vehicle repair garage. The contamination is attributed to abandoned hydraulic lifts.
- Visual evidence of two inactive underground storage tanks (USTs) was identified near the southwest corner of Building 46.

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- A 500-gallon diesel UST was reportedly removed from an area adjacent to the southeast corner of Building 52 since the previous ESA. However, there is no closure assessment for this former UST.
- Containers of unidentified solid and liquid wastes, including potentially hazardous wastes, are found in various areas of the Service Area. These include damaged and leaking drums of soil-like material at the exterior of Building 73.

The preceding summary is intended for informational purposes only. Reading of the full body of this report is recommended.

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## INTRODUCTION

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## 2.0 INTRODUCTION

The objective of this Phase I ESA was to perform appropriate inquiry into the past ownership and uses of the Property consistent with good commercial or customary practice as outlined by the ASTM in “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”, Designation E1527-13. The purpose of this Phase I ESA was to identify, to the extent feasible, adverse environmental conditions including recognized environmental conditions (“RECs”) of the Property.

The ASTM E1527-13 standard indicates that the purpose of the Phase I ESA is to identify RECs, including historical recognized environmental conditions (“HRECs”), and controlled recognized environmental conditions (“CRECs”) that may exist at a property. The term “recognized environmental conditions” means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property:

- (1) Due to any release to the environment;
- (2) Under conditions indicative of a release to the environment; or
- (3) Under conditions that pose a material threat of a future release to the environment.

ASTM defines a “HREC” as a REC that has occurred in connection with the property, but has been addressed to the satisfaction of the applicable regulatory authority and meets unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling a past release a HREC, the environmental professional must determine whether the past release is a REC when the current Phase I ESA is conducted (for example, if there has been a change in the regulations). If the EP considers the past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a REC.

ASTM defines a “CREC” as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), but with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

*De minimis* conditions are not RECs. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. As indicated, the term REC does not include *de minimis* conditions, which generally do not present a material risk to human health and would not likely be subject to enforcement action if brought to the attention of governmental agencies.

This ESA was conducted in accordance with our proposal to Jones, Lang, LaSalle Americas, Inc., dated November 12, 2014. The scope of work conducted during this Phase I ESA consisted of a visual reconnaissance of the Property, interviews with key individuals, and review of reasonably ascertainable documents. The scope of work did not include an assessment for environmental regulatory compliance of

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any facility ever operated at the Property (past or present), or sampling and analyzing of environmental media. Stantec was not contracted to perform any independent evaluation of the purchase or lease price of the Property and its relationship to current fair market value. The conclusions presented in this ESA Report are professional opinions based on data described herein. The opinions are subject to the limitations described in Section 2.3.

ASTM E1527-13 notes that the availability of record information varies from source to source. The User or Environmental Professional is not obligated to identify, obtain, or review every possible source that might exist with respect to a property. Instead, ASTM identifies record information that is reasonably ascertainable from standard sources. "Reasonably ascertainable" means:

- (1) Information that is publicly available;
- (2) Information that is obtainable from its source within reasonable time and cost constraints; and
- (3) Information that is practicably reviewable.

## 2.1 PROPERTY DESCRIPTION

The Property consists of approximately 80 acres of land within the Armed Forces Retirement Home – Washington campus, which is designated District of Columbia Square–PAR, Suffix-0121, Lot-0028.

The AFRH Development Site is an irregularly shaped tract that is bound by AFRH main campus to the north, Irving Street to the south, North Capitol Street to the east, and the AFRH campus golf course to the west. The topography is somewhat rolling and the site slopes moderately towards the southeast and southwest. A storm water management pond is located in the southwest portion of the property.

A cluster of buildings in the eastern portion of the property, known as the Service Area, includes a central heating plant (Building 46) at the north end which predates other structures in the Service Area. Located south of the heating plant are several former shop, utility and storage buildings. These buildings are utilitarian, one-story brick structures, constructed circa 1960. A green house complex formerly used by the Smithsonian Institute is located at the southern end of the Service Area.

A second cluster, located in the western portion of the property, is known as the King Health Center. This area is occupied by former residential, medical, food service, and support buildings including some 19<sup>th</sup> century structures which appear to have historical and/or architectural significance.

There are no structures located in the southern portion of the Property. One of the holes of the AFRH campus golf course is within the AFRH Development Site boundaries at the southwest tip of the Property. Other areas in the southern portion of the subject property are used by a local high school for athletic fields. Surrounding off-site properties are a mix of institutional properties, including school and college campuses, hospitals, cemeteries and religious sites. A Property location map is provided as Figure 1. A Property vicinity map is provided as Figure 2. Property detail diagrams for the Service Area and the King Health Center area are provided as Figures 3A and 3B, respectively. Photographs taken during site reconnaissance are provided in Appendix A.

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### 2.2 SPECIAL TERMS, CONDITIONS, AND SIGNIFICANT ASSUMPTIONS

It is assumed that the purpose of this Phase I ESA is to qualify the User, in part, for landowner protection to CERCLA liability and to facilitate the purchase of the Property. The possible contaminants of concern considered in this assessment include those hazardous compounds listed under CERCLA and petroleum products.

There were no special terms, conditions, or significant assumptions associated with the Phase I ESA.

### 2.3 EXCEPTIONS AND LIMITING CONDITIONS

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided and given the schedule and budget constraints established by the client. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential and actual liabilities and conditions associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Stantec in regards to it.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition.

The client did not provide or contract Stantec to provide recorded title records or search results for environmental liens or activity and use limitations encumbering the property or in connection with the property. These data failures represent data gaps; however, these data gaps are not considered significant. Based on the information obtained during the course of this ESA and general knowledge of development at and near the Property, the absence of this information did not affect the ability of the Environmental Professionals to identify RECs, HRECs, CRECs, or de minimis conditions.

This report relates solely to the specific project for which Stantec was retained and the stated purpose for which this report was prepared and shall not be used or relied upon by the client identified herein for any variation or extension of this project, any other project or any other purpose.

This report has been prepared for the exclusive use of the client identified herein and any use of or reliance on this report by any third party is prohibited, except as may be consented to in writing by Stantec or as required by law. The provision of any such consent is at Stantec's sole and unfettered

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discretion and will only be authorized pursuant to the conditions of Stantec's standard form reliance letter. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

Project Specific limiting conditions are provided in Section 2.2.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures must be confirmed by the client and Stantec assumes no liability resulting from damage to such utilities and structures.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed. Accordingly, additional studies and actions may be required. As the purpose of this report is to identify selected site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment. The findings, observations, and conclusions expressed by Stantec in this report are not an opinion concerning the compliance of any past or present owner or operator of the site which is the subject of this report with any Federal, state, provincial or local law or regulation.

This report presents professional opinions and findings of a scientific and technical nature. It does not and shall not be construed to offer a legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of Federal, state, provincial or local governmental agencies. Issues raised by the report should be reviewed by client legal counsel.

Stantec specifically disclaims any responsibility to update the conclusions in this report if new or different information later becomes available or if the conditions or activities on the property subsequently change.

## 2.4 PERSONNEL QUALIFICATIONS

This Phase I ESA was conducted by, or under the supervision of, an individual that meets the ASTM definition of an Environmental Professional (EP).

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USER-PROVIDED INFORMATION

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## 3.0 USER-PROVIDED INFORMATION

ASTM E1527-13 describes responsibilities of the User to complete certain tasks in connection with the performance of “All Appropriate Inquiries” into the Property. The ASTM standard requires that the Environmental Professional request information from the User on the results of those tasks because that information can assist in the identification of RECs, CRECs, HRECs, or de minimis conditions in connection with the Property. Towards that end, Stantec requested that the User provide the following documents and information:

<b>Description of Information</b>	<b>Provided (Yes / No)</b>	<b>Description and/or Key Findings</b>
User Questionnaire	Yes	The User has indicated general knowledge pertaining to some of the previously identified RECs and potential environmental concerns associated with the subject property.
Environmental Liens or Activity Use Limitations	No	No information pertaining to environmental liens or activity use limitations was provided.
Previous Environmental Permits or Reports Provided by User	Yes	The following relevant reports were provided:  1) Phase I Environmental Site Assessment Report prepared by Greenhorne & O'Mara, Inc. (2004) 2) Phase II Environmental Site Assessment Report prepared by MACTEC, Inc. (2007) 3) Underground Storage Tank Closure Report prepared by Tidewater, Inc. (2008)
Purpose of the Phase I ESA	Yes	The purpose of the Phase I ESA is environmental due diligence associated with potential redevelopment of the property.

Stantec forwarded the ASTM User Questionnaire to Mr. Justin Seffens, Corporate Facilities Manager, representing the AFRH. The completed User Questionnaire is included in Appendix D.

The 2004 Phase I ESA report by Greenhorne & O'Mara, Inc. (G&O) identified several RECs and issues of potential environmental concern. The majority of these issues were related to conditions within the AFRH Development Site and included:

- Visual evidence of dry cleaning equipment was observed remaining in the western portion of Building 46. Review of User-provided prior environmental assessment information also referenced the potential for historical laundry and dry cleaning operations at Building 46.
- Inactive USTs were identified at the southwest corner of Building 46. Two (2) vent pipes and two (2) fill ports were observed in this area. No further information concerning the inactive USTs was available.

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## USER-PROVIDED INFORMATION

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- Three (3) USTs were suspected at the former Refueling Station (Building 75) based on visual observations of vent pipes and three (3) fuel dispensers as well as a review of records. At the time of the assessment the refueling station had been out of service for less than one year and the USTs were pending permanent closure. *Subsequent assessment and research determined that one compartmentalized 8,000-gallon UST was present and not three separate USTs.*
- Several abandoned hydraulic vehicle lifts were identified in the floor slab of Building 76, which was used as a vehicle maintenance garage. *Abandoned hydraulic lifts were also suspected in Building 77, although subsequent assessment did not confirm this.*
- Abandoned and/or improperly stored hazardous wastes (including paint and solvent waste, unidentified solid and liquid waste in drums, waste oil, asbestos waste, PCB light ballasts, lead-containing waste, surplus pesticides, and incinerator ash) were identified in the Service Area.

The 2007 Phase II ESA by MACTEC, Inc. (MACTEC) was completed to evaluate the presence or absence of contaminants of concern and related RECs (previously identified by G&O) for the AFRH main campus as well as to recommend remedial alternatives, where applicable. The Phase II sampling activities included UST, dry cleaning solvent, pesticide, hydraulic lift and incineration ash assessments as well as performing dye tracer studies, geophysical surveys and regulatory file reviews. Relevant findings from the Phase II ESA include:

- Floor drain dye tracer tests indicate that floor drains in Buildings 46, 72, 76 and 77, discharge to the sanitary sewer or an oil water separator.
- Elevated concentrations of naphthalene in soil and the presence of perchloroethylene (PCE), trichloroethylene (TCE) and other VOCs detected in groundwater were attributed to past dry cleaning activities in Building 46, although no actual "source area" was identified. Additional assessment was recommended to delineate the lateral and vertical extent of contamination and to establish the actual source area.
- Elevated TPH-DRO concentrations were detected in soil at Building 76. The levels were above applicable DC reporting and cleanup guidelines. The soil borings were located adjacent to hydraulic lifts and apparently represent hydraulic oil releases from hydraulic lifts and/or hydraulic lines.
- Based on geophysical surveys and a review of DDOE UST Division file information a summary of petroleum USTs was compiled. Active USTs were present at Buildings 52, 56 and 64. Inactive USTs were determined to be present at Buildings 46 and 74/74A.
- A review of EPA regulatory documents related to a CERCLA "No Further Remedial Action Planned (NFRAP)" listing for the ARFH was completed. Based on the documents reviewed, AFRH procured several thousand war surplus cans of paint in 1947 to be used in maintenance activities at the facility. When the paint was determined not to be suitable for use, the paint cans were buried in a storage cell several feet deep in the area northwest of Building 72, where a current paved road exists. During utilities installation activities in 1990 these paint cans and

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approximately 1,000 tons of xylenes contaminated soil, were removed down to a depth of approximately 30 feet and the excavation backfilled. Five ground-water monitoring wells were installed in this area. Laboratory analysis of soil and ground-water samples collected from these wells did not have detectable xylenes concentrations, and the case was subsequently closed by the EPA.

- Shallow soil samples collected at Building 78 did not have detectable levels of pesticides and herbicides, other than the pesticides 4,4'-DDE and methoxychlor, which were detected at concentrations below their respective EPA Risk-Based Concentrations (RBCs). Pesticides and herbicides were not detected in groundwater. Various metals were detected in soil and groundwater; however, it was concluded that the metals are likely naturally occurring.

The UST closure Report prepared by Tidewater, Inc. documents the removal and assessment for two USTs at the Property. The closure assessment included one (1) UST located at the Pipes Building (Building 64) and one (1) UST at the former Refueling Station (Building 75). All work was performed under Building Permit (No. B0901316).

- One (1) 1,000-gallon diesel UST located at Building 64 was removed on December 9, 2008. The tank was observed to be in good condition with no visible evidence holes or corrosion. No evidence of contamination in surrounding soils was observed.
- One (1) compartmentalized 8,000-gallon UST and three (3) associated fuel dispensers located at Building 75 were removed on December 17, 2008. The UST was a double-wall steel tank with three compartments, used for regular unleaded gasoline, premium unleaded gasoline, and diesel. The tank was observed to be in good condition with no visible holes or evidence of corrosion. No evidence of contamination in surrounding soils was observed.
- Soil samples were collected from the subsurface surrounding both USTs. Analytical results did not indicate the presence of petroleum contaminated soils. All results indicated levels not detectable above the laboratory reporting limit with the exception of one sample collected surrounding the 8,000-gallon UST which indicated a detectable level of TPH- gasoline range organics (GRO) substantially less than the action level established by the DDOE as the soil quality standard for UST investigations. Based on observations and the analytical results there were no indications of the presence of petroleum impacted soil or past releases from the USTs and pursuit of closure was recommended.

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RECORDS REVIEW  
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## 4.0 RECORDS REVIEW

The objective of consulting historical sources of information is to develop the history of the Property and surrounding area, in order to evaluate if past uses may have resulted in RECs. Physical setting records are evaluated to determine if the physical setting may have contributed to adverse environmental conditions in connection with the Property. During the review of historical records, Stantec attempted to identify uses of the Property from the present to the Properties first developed use. Stantec's research included the reasonably ascertainable and useful records described in this section.

### 4.1 PHYSICAL SETTING

A summary of the physical setting of the Property is provided in the table below with additional details in the following subsections.

Topography:	Elevations range from approximately 280 ft above msl in the northeastern portion of the property to approximately 200 ft above msl in the southwestern portion of the property. The property slopes moderately to the south and southwest. USGS Washington West Quadrangle (1983).
Soil/Bedrock Data:	Urban land. Underlain by unconsolidated or semi-consolidated deposits of the Coastal Plain Physiographic Province on top of crystalline igneous and metamorphic rock of the Piedmont Physiographic Province.
Estimated Depth to Groundwater/ Estimated Direction of Gradient:	The depth to groundwater cannot be estimated based on the sources reviewed. The inferred direction of shallow groundwater flow is to the south.
<i>Note: Site-specific groundwater direction and depth can only be determined by conducting site-specific testing, which Stantec has not conducted.</i>	

#### 4.1.1 Property Topography and Surface Water Flow

There is approximately 80 feet of topographic relief at the Property with a moderately steep slope from north to south. According to interviews, fill material was placed in the southernmost portion of the property, just north of Irving Street in connection with construction of the LaGarde Building in the 1990s.

A ridgeline and drainage divide extends north-south, through the approximate center of the King Health Center portion of the Property and directs surface flow to the east or west. Surface water on the property infiltrates the ground surface or flows to the storm sewer system. The western portion of the Property drains to a combined sanitary and storm drain sewer system that runs down the center of the AFRH campus. The combined sewer system connects to the District of Columbia's system at Irving Street and flows to the Blue Plains wastewater treatment plant. Some storm water is also collected in an on-site stormwater management pond located southwest of Building 65. The eastern portion of the site drains to a storm drain system, which flows south and connects to a 30-inch pipe under Irving Street near the North Capitol Street interchange. This pipe is part of the District of Columbia's storm drain system.

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## 4.1.2 Regional and Property Geology

Borings advanced at the site during the 2007 Phase II ESA by MACTEC generally encountered man-made fill at or near the surface, grading to unconsolidated Coastal Plain soils described as silty clay to clayey silt, with alternating strata of silty sand to sandy silt, including some silty gravel lenses (MACTEC, 2007). Based on US Department of Agriculture (USDA) Soil Conservation Service (SCS) Soil Survey of the District of Columbia, 1976, the dominant soil composition on the property consists of Urban land in the eastern portion of the property and Urban land – Sassafras complex 8 to 15% slopes in the western portion of the property. Silty clayey loams with gravel (Chillum series) and fine sandy loams (Keyport series) are found in the southern portion of the property (USDA, 1976).

The property is located in the Coastal Plain Physiographic Province, which consists of sediments mainly deposited in the Cretaceous age. The Coastal Plain consists of an eastward thickening wedge of unconsolidated and/or semi-consolidated sediments deposited on top of the crystalline rock of the Piedmont. The USGS Geologic Map of Washington, DC and Vicinity indicates that the basal formation of the Potomac Group, known as the Patuxent Formation is characterized by large amounts of fine to medium tan, white, yellow, or pink sands commonly mixed with variable amounts of clays, kaolin, gravels composed of large and well-rounded polished pebbles, and lenses of varicolored massive clay. The natural surficial material at the site consists of Pleistocene age deposits of the Wicomico Formation (USDI/Johnston, 1964).

## 4.1.3 Regional and Property Hydrogeology

The shallow water table is often a subdued expression of surface topography. Shallow groundwater generally flows from areas of groundwater recharge, such as hills and broad uplands, to areas of groundwater discharge, such as wetlands, rivers, and lakes. Based on the local surface topography, local shallow groundwater is expected to flow south of the Property. Man-made features such as wells, roads, filled areas, buried utility lines and sewers, and drainage ditches may alter the natural shallow groundwater flow direction.

## 4.2 FEDERAL, STATE, AND TRIBAL ENVIRONMENTAL RECORDS

A regulatory agency database search report was obtained from Environmental Data Resources, Inc. (EDR), a third-party environmental database search firm. A complete copy of the database search report, including the date the report was prepared, the date the information was last updated, and the definition of databases searched, is provided in Appendix C.

Stantec evaluated the information listed within the database relative to potential impact to the Property, assessing the potential for impacts based in part on the physical setting. As part of this process, inferences have been made regarding the likely groundwater flow direction at or near the Property. As described in 4.1.3, the inferred shallow groundwater flow direction is likely to be to the south. Observations about the Property and surrounding properties made during the Property reconnaissance are provided in more detail in Section 5.

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## 4.2.1 Listings for Property

The AFRH was identified on several of the environmental databases searched by EDR. In some instances it is not clear whether the listing refers to facilities within the Development Site, or for other areas of the AFRH campus. Database listings identified for the subject property include:

Listed Facility Name/Address	Database Listing	Comments	REC? (YES / NO)
Armed Forces Retirement Home 3700 North Capitol Street NW Washington, DC 20011	RCRA CESQ	The AFRH is listed as a conditionally exempt small quantity generator of hazardous waste. The facility received notice of violations related to general generator requirements in 1988. Compliance was achieved in 1990. No further relevant information could be determined.	NO
US SI Horticultural Office  Smithsonian Institution Greenhouses  3700 North Capitol Street NW Washington, DC 20002	RCRA Non Generator/ NLR	Separate listings for the US SI Horticultural Office and the Smithsonian Institution Greenhouses were identified. These listings are assumed to refer to activities at Building 78, which was formerly operated by the Smithsonian Institution Horticultural Office and appear to relate to shipment of hazardous wastes in 2007 and 2010.  The MACTEC Phase II ESA did not identify releases of pesticides and herbicides to the subsurface in the vicinity of Building 78.	NO
Soldiers'/Airmen's Home 3700 North Capitol Street NW Washington, DC	DC LUST	This DC leaking underground storage tank listing does not specify a particular facility or location with the campus. The case was closed on July 12, 1990.	Unresolved
Fuel Services Building 3700 N. Capitol Street NW Washington, DC 20011	DC UST	This DC registered UST listing refers to an 8,000-gallon UST listed as permanently out of service. The tank status is listed as permanently out of use. The listed facility is assumed to be Building 75 within the subject property.	NO
Cold Storage Warehouse Consolidated Supply Mgmt. 3700 N. Capitol Street Washington, DC 20011	DC UST	This DC registered UST listing refers to a 1,000-gallon diesel UST. The status is indicated to be permanently out of use. This listing may refer to a former UST at Building 74 within the subject property but this cannot be concluded with certainty. No closure assessment documentation is available for this UST. The tank owner is listed as the US Soldiers' & Airmen's Home (not the AFRH) which indicates that the listing was not recent.	NO
Barnes Building #40B 3700 N. Capitol Street Washington, DC 20011	DC UST	This DC registered UST listing identifies 9 USTs including gasoline, diesel and waste oil tanks. All are listed as permanently out of service with the exception of one 1,500-gallon diesel UST. This	N/A

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Listed Facility Name/Address	Database Listing	Comments	REC? (YES / NO)
		tank inventory is not consistent with the Barnes Building (Building 52) history of operations. Multiple former USTs at the AFRH may have been referenced to the Barnes Building as a central facility for administrative purposes or perhaps in error.	
Soldier's and Airmen's Home Michigan Avenue, NE	CERC NFRAP	This "orphan" listing could not be plotted and searched due to insufficient or erroneous address information. However, the CERC NFRAP case may (or may not) refer to the identification of buried paint waste and associated cleanup that occurred in 1990 near Building 72. This case is summarized in the MACTEC Phase II ESA report based on a review of EPA regulatory information.	HREC (potentially)

## 4.2.2 Listings for Nearby Sites with Potential to Impact Property

Stantec assessed data presented in the environmental agency database search report to evaluate the potential for conditions to pose a REC, CREC, or HREC for the Property.

Stantec considers the listings in the database search report provided in Appendix C to not constitute a potential REC for the property.

## 4.3 LOCAL/REGIONAL ENVIRONMENTAL RECORDS

Stantec checked the following sources to obtain information pertaining to Property use and/or indications of RECs in connection with the Property:

### 4.3.1 District of Columbia Health Department

Agency Name Contact Information	Finding
Ms. Mahlori Isaacs District of Columbia Department of Health 899 North Capitol Street, NE Washington, DC 20002 Mahlori.Isaacs@dc.gov	A Freedom of Information Act (FOIA) request was emailed to the agency FOIA representative to request access to information on file regarding solid waste dumping, hazardous materials spills, soil/groundwater contamination, or other environmental concerns at the property. As of the date of this report no response has been received. Once a response is received, a summary of pertinent information will be forwarded under separate cover.

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## 4.3.2 District of Columbia Fire and Emergency Medical Services Department

<b>Agency Name Contact Information</b>	<b>Finding</b>
Office of the Fire Chief Ms. Angela Washington, Information and Privacy Officer 2000 14 <sup>th</sup> Street NW, 500 Washington, DC 20009	A Freedom of Information Act (FOIA) request was forwarded that requested information on file regarding hazardous materials spills, underground storage tanks, or other environmental concerns. As of the date of this report no response has been received. Once a response is received, a summary of pertinent information will be forwarded under separate cover.

## 4.3.3 District of Columbia Building Department Records

<b>Agency Name, Contact Information</b>	<b>Findings</b>
District of Columbia Department of Consumer and Regulatory Affairs (202) 422-9557	<p>A search of building department records was conducted by EDR on behalf of Stantec on February 13, 2015. Sources included building permit records issued by the District of Columbia Department of Consumer and Regulatory Affairs. Relevant listings are summarized below:</p> <p>An Alteration and Repair permit was issued on December 5, 2008 for the removal of one (1) 8,000-gallon UST and (1) 1,000-gallon UST. This permit was issued in connection with the removal of USTs from Building 75 and Building 64.</p> <p>An Alteration and Repair permit was issued on September 11, 2006 for the installation of six (6) monitoring wells. It is believed that this permit was issued in connection with the Phase II Environmental Site Assessment by MACTEC.</p>

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## 4.3.4 District of Columbia Department of the Environment

Agency Name, Contact Information	Findings
<p>Mr. Sylvester Mode District Department of the Environment Underground Storage Tank Branch 1200 First Street, NE Washington, DC 20002</p>	<p>A Freedom of Information Act (FOIA) request was forwarded that requested information on file regarding underground storage tank releases, hazardous materials spills/responses, soil/groundwater contamination, or other environmental concerns. On June 30, 2015, a file review was conducted at the office of the District of Columbia Department of the Environment (DDOE) Underground Storage Tank (UST) branch. The purpose of the file review was to identify additional information related to Recognized Environmental Conditions (RECs), as defined by American Society for Testing and Materials (ASTM) Designation E 1527-13.</p> <p><u>UST at Building 74/74A:</u> A letter dated December 9, 1998 from the AFRH (Kurt J. Kuhn, Safety and Occupational Health Manager) to the UST Branch of DC Environmental Regulation Administration regarding three tank closures at the AFRH was reviewed. One of the USTs referenced is a 1,000-gallon emergency generator tank at the Cold Storage Warehouse (Building 74/74A). The letter states that the UST was closed and removed in mid-November of 1998 and designated to be replaced with an AST. The closing paragraph of the letter states that “attached you will find Amended Notification for Underground Storage Tanks forms for the above tanks. In addition, you will find at attachment 2, the site assessment forms for the Cold Storage Warehouse and AutoCraft Shop tanks...” The letter was separated from the attachments and neither the closure notification form nor the site assessment information could be found in the file. The original 1990 Notification form, found in a different file folder, shows that the tank was 8 years old (installed circa 1982) and was an asphalt coated or bare steel 1,000-gallon tank storing diesel. At the time of removal in 1998 the age of the UST system would have been +/- 16 years old.</p> <p><u>UST at Building 52:</u> File information related to the former UST system at the Barnes Building includes a Notice of Inspection and Site Directive form (Tank Removal and Assessment), completed by DDOE Branch inspector Sylvester Mode. The form documents that a 550-gallon diesel UST was removed on June 29, 2009. The notice directs the AFRH to submit Notification Form and a UST Closure Assessment Report by July 30, 2009.</p> <p>The site sampling plan noted on the inspection form indicates that two TPH-DRO soil samples were to be collected for the closure assessment; one from the west end of the excavation pit and one from the east end. The Notification Form for closure (received by DDOE on September 22, 2009) was contained in the file. However, a closure assessment report was not found.</p> <p><u>Interview Information:</u> Mr. Mode indicated that the DDOE UST Branch issues “closure letters” for USTs only after reviewing a closure assessment report. Often the tank removal contractor fails to provide the required closure report to the owner so that it can be submitted to the DDOE. Owners are in violation if the closure assessment is not submitted within 30-45 days of tank removal.</p> <p>Mr. Mode checked the DDOE UST Branch internal database for the</p>

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Agency Name, Contact Information	Findings
	former UST at Building 52. The database indicates a removal date of June 29, 2009. The comments column of the spreadsheet had the notation "tank and soil in good condition". The internal database does not show a UST listing at the AFRH for Building 74.

## 4.4 HISTORICAL RECORDS REVIEW

### 4.4.1 Land Title Records/Deeds

Land title records and deeds were not provided by the User, and public records were not searched by Stantec.

### 4.4.2 Aerial Photographs

Stantec reviewed historical aerial photographs provided by EDR. The general type of activity on a property and land use changes can often be discerned from the type and layout of structures visible in the photographs. However, specific elements of a facility's operation usually cannot be discerned from aerial photographs alone. The following table summarizes Stantec's observations of the reviewed historical aerial photographs.

No RECs were noted during our review of the aerial photographs. Copies of the historical maps are provided in Appendix B.

Year	Scale	Observations, Property and Adjoining Properties
1951	1"=500'	The general layout and many of the major building and roadway features of the AFRH Development Site are recognizable in the photograph. The Pipes Building and the LaGarde Building are not shown in the King Health Center area. The shop buildings, warehouses and greenhouse complex have not yet been constructed in the Service Area in the eastern portion of the Property. The main campus of the AFRH is shown north of the Property. Rock Creek Church and Cemetery are shown adjacent to the north end of the AFRH. The Shrine of the Immaculate Conception and Catholic University are shown east of the Property. The Washington Hospital Center complex is shown southwest of the Property.
1957	1"=500'	The buildings in the Service Area, south of the Heating Plant are not constructed yet; however, there appears to be some disturbance of ground cover in this area. New building and parking lot construction in the King Health Center area is noted near the Pipes Building. It appears that the Irving Street right-of-way is under construction south of the Property. There is a major expansion at the hospital complex to the southwest.
1963	1"=500'	The North Capitol Street right-of-way is shown at the east boundary of the site in its present alignment. The shop, warehouse and greenhouse buildings (Buildings 71-78) are now noted in the Service Area, south of the Heating Plant.
1968	1"=500'	No significant changes in the appearance of the subject property or surrounding area are noted.

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Year	Scale	Observations, Property and Adjoining Properties
1970	1"=500'	No significant changes in the appearance of the subject property or surrounding area are noted.
1977	1"=1,000'	The photograph is of poor quality. No changes in the appearance of the subject property are noted.
1980	1"=500'	Several additional greenhouse structures are noted in the Service Area south of Building 78. No significant changes in the general appearance of the subject property or surrounding area are noted.
1988	1"=500'	No significant changes in the appearance of the subject property or surrounding area are noted.
2000	1"=750'	No significant changes in the appearance of the subject property or surrounding area are noted.
2007	1"=500'	Two areas in the southern portion of the subject property appear to be used as athletic fields. No significant changes in the appearance of the subject property or surrounding area are noted.
2008	1"=500'	No significant changes in the appearance of the subject property or surrounding area are noted.
2009	1"=500'	No significant changes in the appearance of the subject property or surrounding area are noted.
2011	1"=500'	No significant changes in the appearance of the subject property or surrounding area are noted.

Source: Environmental Data Resources (EDR)

## 4.4.3 City Directories

Stantec reviewed available city directories listings for the Property provided by EDR. The EDR city directory abstract includes a search and abstract of available city directory data. Data sources included the R.L. Polk Co., C&P Telephone Co., The Chesapeake and Potomac Telephone Company, Haines Company, Inc., and Cole Information Services. Stewart's Criss-Cross Directory. The EDR search was performed on February 16, 2015. Historical city directories often provide the names of businesses (if any) that were previously located at (or near) the target property address. The following is a summary of Stantec's review of the city directory listings:

Subject/Adjoining Property	Year	Listed Occupants
3700 North Capitol Street NW, Washington, DC 20011	1922	Address not identified in research source.
	1926	Address not identified in research source.
	1931	Address not identified in research source.
	1936	Address not identified in research source.
	1940	Address not identified in research source.
	1943	Address not identified in research source.
	1948	Address not identified in research source.

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Subject/Adjoining Property	Year	Listed Occupants
	1954	Address not identified in research source.
	1960	Address not identified in research source.
	1964	Address not identified in research source.
	1969	Address not identified in research source.
	1973	Address not identified in research source.
	1978	Address not identified in research source.
	1983	Address not identified in research source.
	1993	Address not identified in research source.
	2000	Address not identified in research source.
	2006	Address not identified in research source.
	2008	Address not identified in research source.
	2013	Address not identified in research source.

## 4.4.4 Historical Fire Insurance Maps

Fire insurance maps were developed for use by insurance companies to depict facilities, properties, and their uses for many locations throughout the United States. These maps provide information on the history of prior land use and are useful in assessing whether there may be potential environmental contamination on or near the Property. These maps, which have been periodically updated since the late 19th century, often provide valuable insight into historical Property uses.

Stantec requested fire insurance maps from EDR; however, no coverage exists for the Property. The Sanborn® Map Search Report indicating “no coverage” is presented in Appendix B.

## 4.4.5 Historical Topographic Maps

Stantec obtained historical topographic maps provided by EDR. Stantec reviewed historical USGS 7.5-Minute Topographic Maps of the Washington West Quadrangle (scale 1:24,000) and other quadrangles to help identify past property usage and areas of potential environmental concern.

No RECs were noted during our review of the topographic maps. Copies of the historical maps are provided in Appendix B. The following table summarizes the maps reviewed and our observations.

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Year	Scale	Observations, Property and Adjoining Properties
1885	1:62,500	The AFRH campus is shown as "Soldiers Home Park." Harewood Road borders the property to the east and northeast. Rock Creek Church Road borders the property to the northwest. Several smaller structures are shown in the northern portion of the AFRH. One or more structures is present in the King Health Center area of the subject property. A reservoir is shown as "New Reservoir" southwest of the AFRH. The street grid of Washington, DC exists to the south of the site but does not yet extend to the site, except on the southwest side.
1894	1:125,000	The AFRH campus is shown as "Soldiers Home." Due to the scale of the map no structures or detail is shown.
1947	1:31,680	Numerous structures are shown on the AFRH campus (US Soldiers Home), including several of the older structures in the King Health Center area of the subject property. No structures other than Building 46 are noted in the Service Area. Michigan Avenue is shown of the US Soldiers Home. South of Michigan Avenue is an area labeled to be a filtration plant. Catholic University and the Shrine of the Immaculate Conception are shown to the east and southeast of the Property, respectively. Rock Creek Cemetery is shown north of the US Soldiers Home campus.
1950	1:25,000	No significant changes are noted for the subject property or vicinity.
1951	1:25,000	No significant changes are noted for the subject property or vicinity.
1956	1:24,000	Additional buildings are shown in the King Health Center area. No additional structures are shown for the Service Area. Increased development is shown on the US Soldiers Home main campus, including the prominent Scott Building (Building 80) north of the subject property. An underground reservoir is indicated on the golf course west of the subject property. Archbishop Carroll High School is shown to the northeast of the campus. The Veterans Administration hospital and Washington Hospital Center are shown south and southwest, respectively, of the campus.
1965	1:24,000	Buildings in the Service Area (70, 71, 72, 73, 74, 75, 76, 77, 78 and 38) are now shown south of Building 46. The subject property is now accessible from North Capitol Street which is now shown bordering to the east of the campus. The Irving Street right-of-way is now shown bordering the south end of the campus.
1971	1:24,000	No significant changes are noted for the subject property. There is significant further expansion of the Washington Hospital Center complex to the southwest as well as to the Veteran Administration hospital to the south.
1980	1:24,000	No significant changes are noted for the subject property or surrounding properties.
1983	1:24,000	No significant changes are noted for the subject property or surrounding properties.
1994	1:50,000	No significant changes are noted for the subject property or surrounding properties.

USGS 7.5-Minute Topographic Maps obtained from EDR.

## 4.4.6 Other Historical Sources

No other historical sources were researched.

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## 5.0 SITE RECONNAISSANCE

Visits to the Property and its vicinity were conducted by Charles R. McEleney, Environmental Scientist with Stantec, on February 19, and March 12, 2015. Access to the Property was facilitated by Mr. James Cavanaugh on February 19, 2015 and Mr. Mike White on March 12, 2015. Figure 2, depicts the site boundaries and adjacent properties in the vicinity of the Property. Figures 3A and 3B depict the Property and the location of potential areas of environmental concern. Photographs collected during the site visit are included in Appendix A.

### 5.1 SITE RECONNAISSANCE METHODOLOGY

The Property reconnaissance focused on observation of current conditions and observable indications of past uses and conditions that may indicate the presence of RECs. The Property reconnaissance was conducted on foot and Stantec utilized the following methodology to observe the Property:

- Traverse the outer Property boundary.
- Traverse transects across the Property.
- Traverse the periphery of all structures on the Property.
- Visually observe accessible interior areas expected to be used by occupants or the public, maintenance and repair areas, utility areas, and a representative sample of occupied spaces.

Weather conditions during the visit to the Property were clear and sunny. There were no weather related property access restrictions encountered during the reconnaissance visit. Snow cover limited Stantec's observation of the exterior ground surface in some areas.

### 5.2 GENERAL DESCRIPTION

<b>Property and Area Description:</b>	<p>The Property is a proposed development zone within the southeastern portion of the AFRH main campus. The Property is located along the west side of North Capitol Street in the Brookland neighborhood of Washington, D.C. Numerous vacant buildings are present in two clusters located in the east (Service Area) and northwest (King Health Center) portions of the property, respectively.</p> <p>No structures are present in the southernmost portion of the Property. One of the holes for the AFRH golf course is located within the boundaries of the Property at the southwest tip.</p> <p>The Property is bordered by the AFRH main campus to the north and the golf course to the west.</p>
<b>Property Operations:</b>	<p>Limited current uses of the property include storage of surplus furniture, equipment and miscellaneous items in Buildings 74, 76 and 77. In addition, salt for road deicing by the landscape contractor is stored in a roofed enclosure adjacent to the west of Building 78.</p> <p>The easternmost portion of the Property is reportedly used as an auxiliary employee parking lot by the nearby Veterans Administration hospital.</p> <p>Athletic fields in the southern portion of the property are also reportedly used by Gonzaga High School.</p>

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<p><b>Structures, Roads, Other Improvements:</b></p>	<p>The Service Area encompasses the eastern portion of the Property and is occupied by a central heating plant building, at the northern tip, which predates the other buildings. Several one-story brick service buildings, including a substation, trades shops, warehouses, a garage and fueling center are located south of the heating plant. A horticultural building and greenhouse complex are located at the south end of the Service Area. Asphalt paved parking lots are located in the central and eastern portions of the Service Area.</p> <p>The King Health Center area is located in the northwest portion of the Property and is occupied by medical treatment buildings, a mess hall, nursing home facilities, a guest house, as well as administrative and support buildings. Some of the structures in the King Health Center are of historical and/or architectural importance. The buildings are interconnected by asphalt paved roads and parking areas.</p>
<p><b>Property Size (acres):</b></p>	<p>80 acres +/-</p>
<p><b>Estimated % of Property Covered by Buildings and/or Pavement:</b></p>	<p>30%</p>
<p><b>Observed Current Property Use/Operations:</b></p>	<p>Based on observations current uses include the storage of surplus furniture, equipment and miscellaneous items in Buildings 74, 76 and 77. In addition, salt for road deicing is stored in a roofed enclosure west of Building 78. Athletic fields were identified in the southern portion of the property.</p>
<p><b>Observed Evidence of Past Property Use(s):</b></p>	<p>Building 46 was used until recently as a central heating plant to provide steam for the campus. Evidence includes remaining boilers and six (6) 20,000 fuel oil ASTs.</p> <p>The brick stack and fireboxes for an obsolete incinerator were observed in Building 69. Signage indicates that this building was also formerly used for flammable material storage.</p> <p>Building 75 was used as a vehicle refueling station. Observed evidence includes a pump island with dispensers removed remaining southwest of the building. This area was assessed by the MACTEC Phase II ESA. No soil and groundwater impacts from petroleum hydrocarbons were identified.</p> <p>Building 76 was used as a vehicle repair garage. Observed evidence includes abandoned hydraulic lifts. This area was assessed by the MACTEC Phase II ESA. Concentrations of TPH-DRO above DC reporting and cleanup levels were identified.</p> <p>The Building 78 complex was used for horticulture. Observed evidence includes greenhouse facilities and planting beds.</p>
<p><b>Sewage Disposal Method (and age):</b></p>	<p>Sanitary sewer/combined sewer. District of Columbia Water and Sewer Authority. The age of these systems is not known.</p>
<p><b>Potable Water Source:</b></p>	<p>Public water supply. The District of Columbia Water and Sewer Authority. There is a 15 million-gallon underground reservoir, which is leased to the District public water system below the AFRH golf course.</p>
<p><b>Electric Utility:</b></p>	<p>PEPCO</p>

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## 5.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

The following table summarizes Stantec's observations during the Property reconnaissance.

Observations	Description/Location
<b>Hazardous Substances and Petroleum Products as Defined by CERCLA 42 U.S.C. § 9601(14):</b>	Heating oil for the Building 46 boilers was stored in six (6) 20,000-gallon steel tanks in the basement of the building. The tanks were reportedly pumped out when the boilers were taken off line.
<b>Drums (≥ 5 gallons):</b>	<p>Drums of lubricants and boiler chemicals were observed in the boiler area of Building 46.</p> <p>Several drums and 5-gallon containers labeled to store gasoline, lubricants and hydraulic oil were observed in a flammable storage building (Building 38) near Building 78.</p> <p>Dozens of 55-gallon drums of solid waste are stored on pallets inside of Building 76. The drums are labeled as "non hazardous"; however, the contents of the drums is unknown.</p>
<b>Strong, Pungent, or Noxious Odors:</b>	None observed.
<b>Pools of Liquid:</b>	None observed.
<b>Unidentified Substance Containers:</b>	<p>Several 55-gallon drums of solid waste are located along the west exterior wall of Building 73. The drums are weathered and deteriorated by rust. The contents of at least one of the drums, which appears to be soil, is leaking out onto the ground. The drums are labeled "pending laboratory analysis."</p> <p>Two unlabeled 30-gallon drums of liquid waste are also present along the west wall of Building 73.</p> <p>Unlabeled single drums were also observed at the northeast corner of Building 72 and at the south entrance of Building 74.</p>
<b>PCB-Containing Equipment:</b>	<p>Older fluorescent lighting in buildings constructed prior to 1979 may contain PCB ballasts.</p> <p>No PCB transformers or retrofilled PCB transformers were observed. Silicone oil filled transformers and dry transformers were observed in vaults and substations in Buildings 46, 54, 71 and 76.</p>
<b>Other Observed Evidence of Hazardous Substances or Petroleum Products:</b>	<p>Small quantity containers of various lubricants, solvents, cleaning compounds, etc. were observed in Building 46 and other building of the Service Area.</p> <p>Corrosive boiler additive chemicals are stored in bulk containers within polyethylene secondary containment in the Building 46 boiler area.</p> <p>A battery bank with dozens of glass lead-acid battery tanks is located in the main substation (Building 71).</p>

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## 5.4 INTERIOR OBSERVATIONS

Stantec accessed all buildings in the Service Area. However, building interiors in the King Health Center area were not accessed. Stantec made the following observations during the Property reconnaissance of the building interiors at the Property and/or identified the following information during the interview or records review portions of the assessment:

Observations	Description
<b>Heating/Cooling Method:</b>	All buildings have been decommissioned and there is no operational heating and cooling. Building 46 formerly supplied steam for heating to buildings in the AFRH Development Area. Cooling was provided by window AC units for some areas of the Service Area. The LaGarde building had central air conditioning with a chiller and cooling tower that provided chilled water. Other buildings in the King Health Center that had air conditioning were reportedly cooled by window units.
<b>Surface Stains or Corrosion:</b>	Moderate oil staining was observed on the bare concrete floor beneath the tank area of Building 46.
<b>Floor Drains and Sumps:</b>	Floor drains were identified for several building in the Service Area, including Buildings 46, 72, 76 and 77. The drains reportedly discharge to the sanitary sewer.
<b>Other Interior Observations:</b>	Abandoned hydraulic lifts are present in the floor of Building 76. The lifts were assessed in the MACTEC Phase II ESA. TPH-DRO concentrations in soil were attributed to leaking hydraulic lifts or lines.  The interior of Building 76 is filled with surplus equipment and miscellaneous items. Dozens of steel drums labeled "non hazardous waste" are found on pallets throughout.  No abandoned chemical containers or obvious pesticide residues were observed in the placarded pesticide storage room in Building 78.

## 5.5 EXTERIOR OBSERVATIONS

Stantec made the following observations during the site reconnaissance of exterior areas of the Property and/or identified the following information during the interview or records review portions of the assessment:

Observations	Description
<b>On-site Pits, Ponds, or Lagoons:</b>	None observed.
<b>Stained Soil or Pavement:</b>	None observed.
<b>Stressed Vegetation:</b>	None observed.
<b>Waste Streams and Waste Collection Areas:</b>	The subject property is vacant. The limited uses of the property, which include surplus equipment storage, salt storage and high school soccer team practice, do not have any significant associated waste streams or waste collection areas.
<b>Solid Waste Disposal:</b>	No areas indicative of on-site solid waste disposal were observed. The former incinerator in Building 69 has not been used in several decades.

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SITE RECONNAISSANCE  
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Observations	Description
<b>Potential Areas of Fill Placement:</b>	Fill resulting from excavations for the LaGarde Building was reportedly placed in the southernmost portion of the property, between Irving Street and Pershing Drive.
<b>Wastewater:</b>	No exterior wastewater discharge was observed.
<b>Stormwater:</b>	Surface water on the property infiltrates the ground surface or flows to the storm sewer system. The western portion of the Property drains to a combined sanitary and storm drain sewer system that runs down the center of the AFRH campus. The combined sewer system connects to the District of Columbia's system at Irving Street. Some stormwater is also captured by a stormwater management pond located southwest of the King Health Center. However, this pond could not be identified during site reconnaissance due to snow cover. The eastern portion of the site reportedly drains to a storm drain system, which flows south and connects to a 30-inch pipe under Irving Street near the North Capitol Street interchange. This pipe is part of the District of Columbia's storm drain system.
<b>Wells:</b>	Groundwater monitoring wells were observed in two locations in the Service Area, including in the road west of Building 72 and near the former fuel dispenser island for Building 75. These wells are not actively sampled. Additional monitoring wells (unobserved) are likely to remain from the past environmental investigations.
<b>Septic Systems:</b>	No evidence of septic system was observed.
<b>Other Exterior Observations:</b>	Fill ports and vent pipes for inactive UST system(s) were observed at the southwest corner of Building 46.

## 5.6 UNDERGROUND STORAGE TANKS/STRUCTURES

<b>Existing USTs:</b>	<p>There is one active registered UST on the subject property. A 1,500-gallon diesel UST for an emergency generator is present near the loading area at the northwest end of the LaGarde Building (Building 56). The LaGarde Building is vacant and the emergency generator is temporarily out of service pending redevelopment of the Property and reoccupancy of the building. This tank has reportedly been pumped of fuel; however, the UST system has not been temporarily closed in accordance with DDOE UST regulations.</p> <p>Vent pipes and fill ports for two (2) inactive UST systems were observed at the exterior of Building 46, near the southwest corner. During the 2007 Phase II investigation by MACTEC the fill ports were opened and observed to be filled with water. The USTs are inactive but their former use/contents could not be determined.</p>
<b>Former USTs:</b>	<p>There have been several former USTs at the Property. These USTs are discussed below by building.</p> <p><u>Building 52</u></p> <p>During the previous environmental site assessments a 500-gallon diesel UST was identified at the SE corner of Building 52. File information related to the former UST system at the Barnes Building includes a Notice of Inspection and Site Directive form (Tank Removal and Assessment), completed by DDOE Branch inspector Sylvester Mode. The form documents that a 550-gallon diesel UST was removed on June 29, 2009. The notice directs the AFRH to submit Notification Form and a UST Closure Assessment Report by July 30, 2009.</p>

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	<p>The site sampling plan noted on the inspection form indicates that two TPH-DRO soil samples were to be collected for the closure assessment; one from the west end of the excavation pit and one from the east end. The Notification Form for closure (received by DDOE on September 22, 2009) was contained in the file. However, a closure assessment report was not found.</p> <p><u>Building 64</u></p> <p>As documented in the previous ESAs a 1,200 gallon diesel UST for the emergency generator was removed with some soil remediation involved in 1994. The UST was replaced (presumably in the same location) by a 1,000-gallon diesel UST which was removed after Building 64 was vacated. A closure assessment was performed for this UST in December of 2008 and based on observations and analytical data there were no indications of the presence of petroleum impacted soils or indications of past releases.</p> <p><u>Building 74</u></p> <p>Previous environmental assessments reported that a 500-gallon diesel UST was removed from Building 74/74A. It should be noted, a letter dated December 9, 1998 from the AFRH (Kurt J. Kuhn, Safety and Occupational Health Manager) to the UST Branch of DC Environmental Regulation Administration regarding three tank closures at the AFRH was reviewed. One of the USTs referenced a 1,000-gallon emergency generator tank at the Cold Storage Warehouse (Building 74/74A). The letter states that the UST was closed and removed in mid-November of 1998 and designated to be replaced with an AST. The closing paragraph of the letter states that "attached you will find Amended Notification for Underground Storage Tanks forms for the above tanks. In addition, you will find at attachment 2, the site assessment forms for the Cold Storage Warehouse and AutoCraft Shop tanks..." The letter was separated from the attachments and neither the closure notification form nor the site assessment information could be found in the file. The original 1990 Notification form shows that the tank was 8 years old (installed circa 1982) and was an asphalt coated or bare steel 1,000-gallon tank storing diesel. At the time of removal in 1998 the age of the UST system would have been +/- 16 years old. Therefore, since the letter and notification closure form was written after the tank was removed (i.e, visually inspected), it is reasonable to assume the 500-gallon diesel UST was actually 1,000-gallons.</p> <p><u>Building 75</u></p> <p>Three (3) USTs were removed at the refueling station in 1990-1991. These were replaced by a compartmentalized 8,000-gallon gasoline and diesel UST. The 8,000-gallon UST became inactive when the refueling station ceased operations in 2004 and the UST was removed in 2008. A closure assessment was performed for this UST in December of 2008. Based on observations and the analytical data there were no indications of the presence of petroleum impacted soils or indications of past releases.</p>
<p><b>Other Underground Structures:</b></p>	<p>There is an oil water separator at the northeast corner of Building 76.</p>

## 5.7 ABOVEGROUND STORAGE TANKS

<p><b>Existing ASTs:</b></p>	<p>Six (6) 20,000-gallon ASTs are located in the lower level of Building 46. The ASTs supplied #2 oil as a backup fuel source to the boilers. The boilers were shut down when the buildings within the Development Site were vacated. Reportedly, fuel oil has been removed from all of the ASTs. There is localized oil staining on the concrete floor beneath the tanks and piping.</p> <p>There is a 1,000-gallon steel AST in secondary containment at the exterior of Building 74 near the southeast corner of the building. The AST stored diesel for the emergency generator. The Building</p>
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	74 generator is out of service and the AST was reportedly emptied when Building 74 was vacated. No evidence of staining was observed in the vicinity of the AST.
<b>Former ASTs:</b>	None observed.

## 5.8 ADJOINING PROPERTIES

### 5.8.1 Current Uses of Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Stantec made the following observations about use and activities on adjoining properties:

<b>NORTH</b>	To the north the subject property is bordered by the main campus of the AFRH. Rock Creek Cemetery and a US National Cemetery are located north of the AFRH. To the northeast of the subject property, across North Capitol Street, are the Ukrainian National Catholic Shrine and Augustinian College.
<b>SOUTH</b>	The Irving Street right-of-way and interchanges with North Capitol Street form the southern boundary of the subject property. A Veterans Administration hospital and the Washington Hospital Center are located south and southwest, respectively, of the subject property, south of Irving Street.
<b>EAST</b>	North Capitol Street NW forms the eastern boundary of the subject property. The National Shrine of the Immaculate Conception and Catholic University are located east of North Capitol Street.
<b>WEST</b>	To the west the subject property is bordered by the AFRH golf course. Residential properties are located west of the AFRH golf course.

### 5.8.2 Observed Evidence of Past Uses of Adjoining Properties

Observations of adjoining properties providing indications of past use and activities, if any, are described below.

<b>NORTH</b>	None observed.
<b>SOUTH</b>	None observed.
<b>EAST</b>	None observed.
<b>WEST</b>	None observed.

### 5.8.3 Pits, Ponds or Lagoons on Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Stantec made the following observations about the presence of pits, ponds and lagoons on adjoining properties:

<b>NORTH</b>	None observed.
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<b>SOUTH</b>	None observed.
<b>EAST</b>	None observed.
<b>WEST</b>	There are two fishing ponds in the southwest portion of the AFRH campus.

## 5.9 OBSERVED PHYSICAL SETTING

<b>Topography of the Property and Surrounding Area:</b>	The topography of the site slopes moderately from the north to southeast and southwest. There is a ridgeline in the west central portion of the subject property. The surrounding area slopes generally to the southeast or southwest.
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# ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL SITE ASSESSMENT

INTERVIEWS  
March 31, 2015

## 6.0 INTERVIEWS

Stantec conducted interviews with the following individuals:

Name and contact information	Relationship to Property	Key findings:
<p>Mr. Joseph Woo, Architect (202) 641-7212 Joe.woo@afrh.gov</p>	<p>Corporate Resources Contractor</p>	<p>The buildings in the Development Site are vacant. Activities conducted on-site are limited to the use of buildings for surplus storage and other minor uses.</p> <p>No wastes are generated by the very limited operations. The contents of waste drums at the exterior of buildings in the Service Area are not known.</p> <p>Fuel oil has been removed from the six (6) 20,000-gallon ASTs in Building 46. Underground storage tanks were removed from Buildings 52, 64 and 75 since the previous Phase ESA.</p> <p>Fill material from construction activities in the 1990s was placed at the southern end of the property, just north of Irving Street.</p>
<p>Mr. Patrick Benjamin (202) 541-7547 Patrick.benjamin@afrh.gov</p>	<p>Campus Operations Manager</p>	<p>USTs have been removed from Buildings 52, 64 and 75. The UST at Building 56 was pumped out after the building was vacated but has not been temporarily or permanently closed.</p> <p>The 1,000-gallon AST for the emergency generator at Building 74 is empty and not in use.</p>

### 6.1 FINDINGS FROM INTERVIEWS WITH MAJOR OCCUPANTS/OTHERS

Mr. Joseph Woo facilitated Stantec's access to the Property and was interviewed on February 19, 2015 and also on March 12, 2015. Mr. Woo worked at the AFRH for approximately 30 years as an employee and now supports the AFRH as a contractor. He does not have detailed knowledge of all RECs identified in the previous ESAs but provided general information about the current conditions and the recent history of the Property. Mr. Woo is not aware of any environmental concerns other than those discussed in the User-provided documents.

The various buildings in the Development Site were vacated at different times between 2002 and 2013. All of the buildings in the Service Area are designated for demolition with the exception of Building 46. Some of the buildings in the King Health Center area are also designated for demolition, while most are proposed for adaptive reuse.

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## INTERVIEWS

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Current uses of the site are limited to storage of surplus equipment in the Service Area and other minor activities, including the use of soccer fields in the southern portion of the Property by a local high school. No significant waste streams are routinely generated on the Property. Mr. Woo was not aware of the waste drums located at the exterior of the buildings in the Service Area and does not know what past activities they may be related to.

Mr. Woo indicated that fuel oil has been removed from the six (6) 20,000-gallon fuel oil ASTs in Building 46 when the heating plant was taken off line. A UST closure report was provided to Stantec for the former USTs at Buildings 64 and 75.

The construction of the LaGarde Building in the late 1990s resulted in the excavation of a large volume of soil material. Mr. Woo indicated that fill material from the LaGarde building construction was placed in the southern portion of the subject property, north of the Irving Street right of way.

Mr. Patrick Benjamin was interviewed on March 12, 2015 and also by telephone on March 25, 2015. He has worked at the AFRH for 29 years but only for a short time in his current capacity as campus operations manager. Mr. Benjamin provided general information concerning facilities operations, including the past heating and cooling systems for buildings in the Development Site.

After the LaGarde Building was vacated in 2013 the contents (diesel) of the 1,500-gallon UST for the emergency generator were reportedly pumped out. There is no record of tightness testing of the UST. The 1,000-gallon diesel AST on the east side of Building 74 is reported to be empty. USTs were removed from Buildings 52, 64 and 75 within the last 10 years. Mr. Benjamin is not aware of any potential environmental concerns other than those discussed in the User-provided documents.

## 6.2 FINDINGS FROM INTERVIEWS WITH PROPERTY NEIGHBORS

Interviews with property neighbors were not performed.

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EVALUATION  
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## 7.0 EVALUATION

This section provides a summary overview of or Findings, Opinions, and Conclusions.

### 7.1 FINDINGS AND OPINIONS

Information gathered from interviews, reviews of existing data review, and a property inspection was evaluated to determine if RECs are present in connection with the Property. Based on this information, Stantec made the following findings and developed the following opinions.

- Finding 1:** The Phase II ESA by MACTEC identified that soil is impacted with elevated concentrations of naphthalene in the vicinity of Building 46. The level of naphthalene reported did not exceed RBCs or DC Risk Based Screening Levels (RBSLs). In addition, a groundwater sample from an existing monitoring well down gradient of Building 46 was found to be impacted by chlorinated solvents including PCE and its daughter product TCE at concentrations exceeding their respective tap water RBCs and EPA Maximum Contaminant Levels (MCLs). The elevated naphthalene concentrations in soil and the chlorinated solvents in groundwater were attributed to a past release or spill of dry cleaning solvents from Building 46, although no “source area” was identified. There is also potential for soil vapor impacts associated with these releases.
- Opinion 1:** The determination of soil and groundwater impacted by dry cleaning solvents represents a REC.
- Finding 2:** EPA file information related to a NFRAP listing for the AFRH was reviewed for the Phase II ESA by MACTEC. Based on the documents reviewed, it was determined that several thousand World War II surplus paint cans were buried in a storage cell a few feet deep in an area northwest of Building 72. In 1990 these paint cans and 1,000 tons of xylenes-contaminated soil were removed. Groundwater analysis did not show any levels of xylenes and the case was closed by EPA.
- Opinion 2:** This finding is considered a HREC as the remediation was addressed to the satisfaction of EPA without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).
- Finding 3:** As reported in the Phase II ESA by MACTEC, elevated concentrations of TPH-DRO were detected in soil borings at Building 76. The TPH-DRO concentrations exceeded the DC release reporting level and DC Tier 1 RBSL. The soil borings were adjacent to hydraulic lifts, and the TPH-DRO levels apparently represent hydraulic oil releases from hydraulic lifts and/or hydraulic lines. There is also potential for soil vapor and groundwater impacts from these releases.
- Opinion 3:** The determination of soil impacted with elevated TPH-DRO concentrations above DC release reporting and cleanup criteria is a REC.

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**Finding 4:** A 550-gallon UST was removed from the area near Building 52 in June of 2009. File information related to the former UST system at the Barnes Building includes a Notice of Inspection and Site Directive form (Tank Removal and Assessment), completed by DDOE Branch inspector Sylvester Mode. The form documents that a 550-gallon diesel UST was removed on June 29, 2009. A closure letter was never received BY DDOE for the UST and therefore it was not “properly closed.” A search of building department records for the subject property, including permits issued by the DC Department of Consumer and Regulatory Affairs, does not identify a listing for an Alteration and Repair permit for closure of this UST.

**Opinion 4:** An assessment for evidence of leaks and past releases is necessary to permanently close a UST. AFRH should contact the tank removal contractor to determine if a closure assessment was performed and if so, to obtain a copy. According to the Notice of Inspection the tank removal contractor is listed as: Petroleum Management, 7443 Shipley Avenue, Harman, MD 21077. Contact Name: Tom Cooksey. Phone (301) 860-0300. Undocumented closure of this UST represents a REC.

**Finding 5:** As reported in previous ESAs a 500-gallon diesel UST was removed from the exterior of Building 74/74A. In a letter dated December 9, 1998 from the AFRH (Kurt J. Kuhn, Safety and Occupational Health Manager) to the UST Branch of DC Environmental Regulation Administration regarding three tank closures at the AFRH was reviewed. One of the USTs referenced is a 1,000-gallon emergency generator tank at the Cold Storage Warehouse (Building 74/74A). The letter states that the UST was closed and removed in mid-November of 1998 and designated to be replaced with an AST. Therefore, since the letter and notification closure form were written after the tank was removed (i.e, visually inspected), it is reasonable to assume the 500-gallon diesel UST was actually 1,000-gallons. A search of building department records for the subject property, including permits issued by the DC Department of Consumer and Regulatory Affairs, does not identify a listing an Alteration and Repair permit for closure of this UST.

**Opinion 5:** This UST system is not listed in DDOE’s internal database used to track the status of registered USTs in the District of Columbia. However, the closure assessment did not show evidence of a release because a Leaking Underground Storage Tank status was not assigned by DDOE. Therefore, this finding does not consider the former UST at Building 74 to be a REC.

**Finding 6:** A 1,500-gallon diesel UST is present near the loading dock for Building 56. Building 56 was reportedly vacated in 2013 and the contents of the tank were pumped out pending possible future re-occupancy.

**Opinion 6:** Application for temporary closure of regulated USTs must be made to the DDOE UST Division. Additional criteria must be met for closure including capping the lines and securing the fill ports. However, this finding is not considered to be a REC, HREC or *de minimis* condition.

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- Finding 7:** As reported in the previous ESAs vent pipes and fill caps were identified for two inactive USTs near the southwest corner of Building 46.
- Opinion 7:** Inactive USTs must be properly closed, including an assessment for leaks and evidence of past releases. The inactive USTs represent a REC.
- Finding 8:** Containers of liquid and solid wastes, including hazardous wastes and unidentified wastes, were identified in many interior locations within the Service Area. These include but are not limited to corrosive boiler and water treatment chemical containers in Building 46 and flammable liquid containers (fuels, lubricants and hydraulic oil) in Building 38.
- Opinion 8:** None of the containers appeared to be leaking or represent a material threat of release to the environment. This finding is not considered to be a REC, HREC or *de minimis* condition.
- Finding 9:** Several 55-gallon drums of unidentified waste are located along the west exterior wall of Building 73. The drums are labeled “pending laboratory analysis.” The drums are significantly weathered and at least one of the drums is rusted through and leaking contents (apparently soil material) to the asphalt pavement.
- Opinion 9:** It is possible that the drums contain investigation derived waste (e.g. soil cuttings from drilling activities) that was never properly disposed. However, the material could be a hazardous waste that is being released from the damaged drums. This finding represents a REC.

## 7.2 DATA GAPS

The federal AAI rule [40 CFR 312.10(a)] and ASTM E1527-13 identify a “data gap” as the lack or inability to obtain information required by the standards and practices of the rule despite good faith efforts by the Environmental Professional or the User. No significant data gaps were identified for the Phase I ESA of the subject property. Any data gaps resulting from the Phase I ESA described in this report are listed and discussed below.

Any data gaps resulting from the Phase I ESA described in this report are listed and discussed below.

Gap	Discussion
<b>Deletions or Exceptions From Scope of Work Referenced in Section 1.4:</b>	None.
<b>Weather-Related Restrictions To Site Reconnaissance:</b>	Snow cover precluded a thorough examination of ground and exterior surfaces during site reconnaissance on February 19, 2015. On March 12, 2015 efforts were made to revisit most but not all portions of the site previously visited on February 19, 2105. This restriction is not believed to have affected the EP’s ability to identify RECs.
<b>Facility Access Restrictions to</b>	

# ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL SITE ASSESSMENT

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Gap	Discussion
<b>Site Reconnaissance:</b>	None.
<b>Other Site Reconnaissance Restrictions:</b>	Building interiors of the King Health Center were not accessed during the site reconnaissance. These buildings include primarily residential, medical and administrative buildings. This restriction is not believed to have affected the EP's ability to identify RECs.
<b>Data Gaps From Environmental Records Review:</b>	Responses to written public file review requests are pending from the DDOE and other agencies. The absence of agency records review information is not believed to have affected the ability of the EP to identify RECs. However, should agency file review result in additional information which alters the findings of RECs of this report will be revised accordingly.
<b>Data Gaps From Historical Records Review:</b>	None.
<b>Data Gaps From Interviews:</b>	Interviews with property neighbors were not conducted. This restriction is not believed to have affected the EP's ability to identify RECs.
<b>Other Data Gaps:</b>	The client did not provide or contract Stantec to provide recorded title records or search results for environmental liens or activity and use limitations encumbering the property or in connection with the property. These data failures represent data gaps; however, these data gaps are not considered significant. Based on the information obtained during the course of this ESA and general knowledge of development at and near the Property, the absence of this information did not affect the ability of the EP to identify RECs, HRECs, CRECs, or de minimis conditions.

## 7.3 CONCLUSIONS

Stantec has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 for the AFRH Development Site. Any exceptions to, or deletions from, this practice are described in Section 7.2 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property except for the following:

- The Phase II ESA by MACTEC identified that soil is impacted with elevated concentrations of naphthalene in the vicinity of Building 46. The level of naphthalene reported did not exceed RBCs or DC RBSLs. In addition, a groundwater sample from an existing monitoring well down gradient of Building 46 was found to be impacted by chlorinated solvents including perchlorethylene (PCE) and its daughter product trichloroethene (TCE) at concentrations exceeding their respective tap water RBCs and MCLs. The elevated naphthalene concentrations in soil and the chlorinated solvents in groundwater were attributed to a past release or spill of dry cleaning solvents from Building 46, although no "source area" was identified. There is also potential for soil vapor impacts associated with these releases. The determination of soil and groundwater impacted by dry cleaning solvents represents a REC.
- EPA file information related to a NFRAP listing for the AFRH was reviewed for the Phase II ESA by MACTEC. Based on the documents reviewed, it was determined that several thousand World War II surplus paint cans were buried in a storage cell a few feet deep in an area northwest of Building 72. In 1990 these paint cans and 1,000 tons of xylenes-contaminated soil were

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removed. Groundwater analysis did not show any levels of xylenes and the case was closed by EPA. This finding is considered a HREC as the remediation was addressed to the satisfaction of EPA without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls.)

- As reported in the Phase II ESA by MACTEC, elevated concentrations of TPH-DRO were detected in soil borings at Building 76. The TPH-DRO concentrations exceeded the DC release reporting level and DC Tier 1 RBSL. The soil borings were adjacent to hydraulic lifts, and the TPH-DRO levels apparently represent hydraulic oil releases from hydraulic lifts and/or hydraulic lines. There is also potential for soil vapor and groundwater impacts from these releases. The determination of soil impacted with elevated TPH-DRO concentrations above DC release reporting and cleanup criteria is a REC.
- A 500-gallon diesel UST was reportedly removed from an area near the southeast corner of Building 52. However, there is no record of a closure assessment for this UST system. A search of building department records for the subject property, including permits issued by the DC Department of Consumer and Regulatory Affairs, does not identify a listing for an Alteration and Repair permit for closure of this UST. An assessment for evidence of leaks and past releases is necessary to permanently close a UST. Stantec recommends that the AFRH contact the tank removal contractor to determine if a closure assessment was performed and if so, to obtain a copy. According to the Notice of Inspection the tank removal contractor is listed as: Petroleum Management, 7443 Shipley Avenue, Harman, MD 21077. Contact Name: Tom Cooksey. Phone (301) 860-0300. Undocumented closure of this UST represents a REC.
- As reported in the previous ESAs vent pipes and fill caps were identified for two inactive USTs near the southwest corner of Building 46. No further information on the contents of the USTs was available. Inactive USTs must be properly closed, including an assessment for leaks and evidence of past releases. The inactive USTs represent a REC.
- Several 55-gallon drums of unidentified waste are located along the west exterior wall of Building 73. The drums are labeled "pending laboratory analysis." The drums are significantly weathered and at least one of the drums is rusted through and leaking contents (apparently soil material) to the asphalt pavement. It is possible that the drums contain investigation derived waste (e.g. soil cuttings from drilling activities) that was never properly disposed. However, the material could be a hazardous waste that is being released from the damaged drums. This finding represents a REC.

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# ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL SITE ASSESSMENT

NON-SCOPE CONSIDERATIONS  
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## 8.0 NON-SCOPE CONSIDERATIONS

The scope of work completed was limited solely to those items in the ASTM E1527-13 standard. No ASTM E1527-13 non-scope services were performed as part of this Phase I ESA.

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# ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL SITE ASSESSMENT

## REFERENCES

March 31, 2015

## 9.0 REFERENCES

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**ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**

REFERENCES  
March 31, 2015

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# ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL SITE ASSESSMENT

FIGURES  
March 31, 2015

FIGURES

# ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL SITE ASSESSMENT

FIGURES  
March 31, 2015

# ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL SITE ASSESSMENT

FIGURES  
March 31, 2015

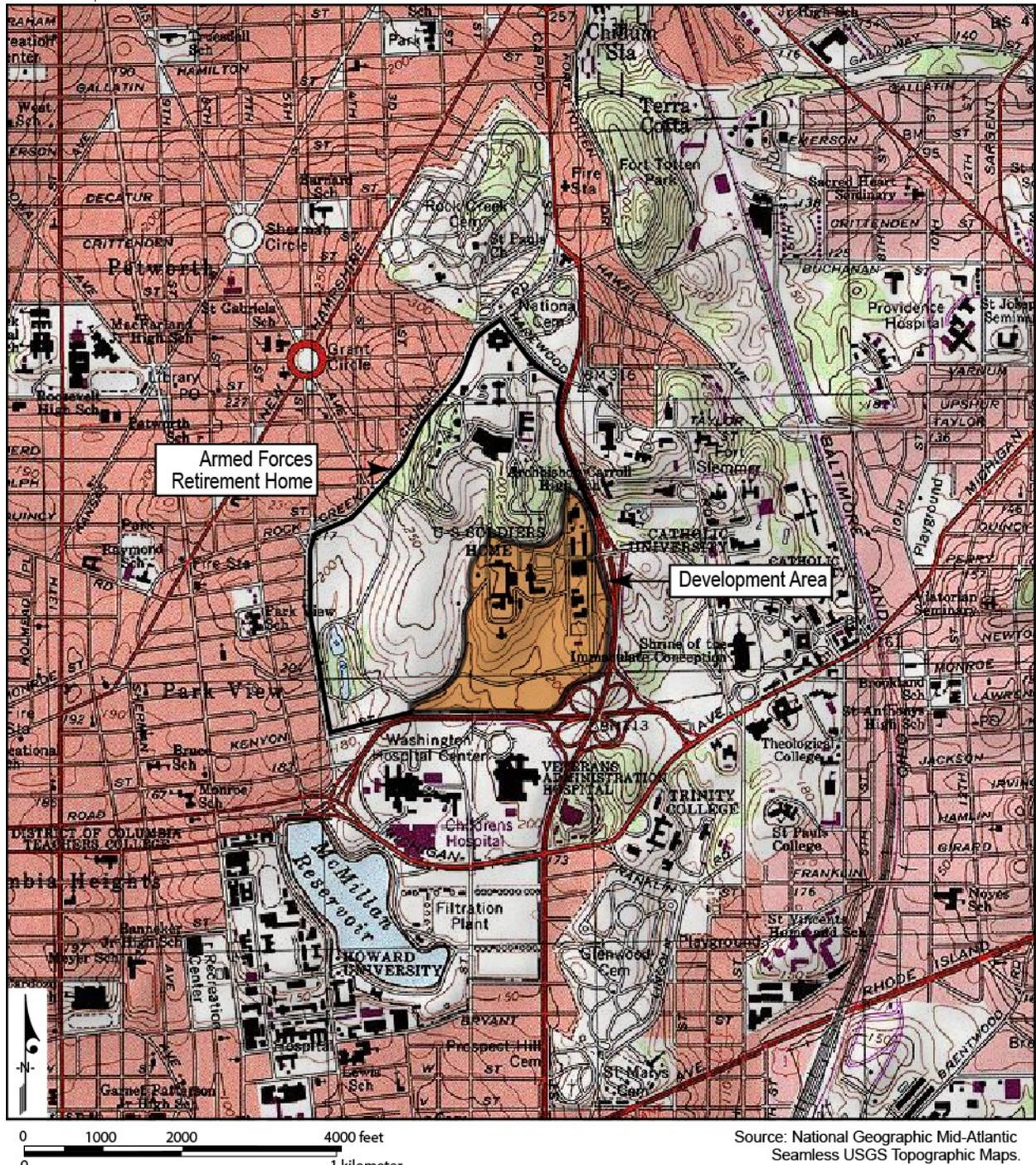


Figure 1: Property Location Map

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FIGURES  
March 31, 2015

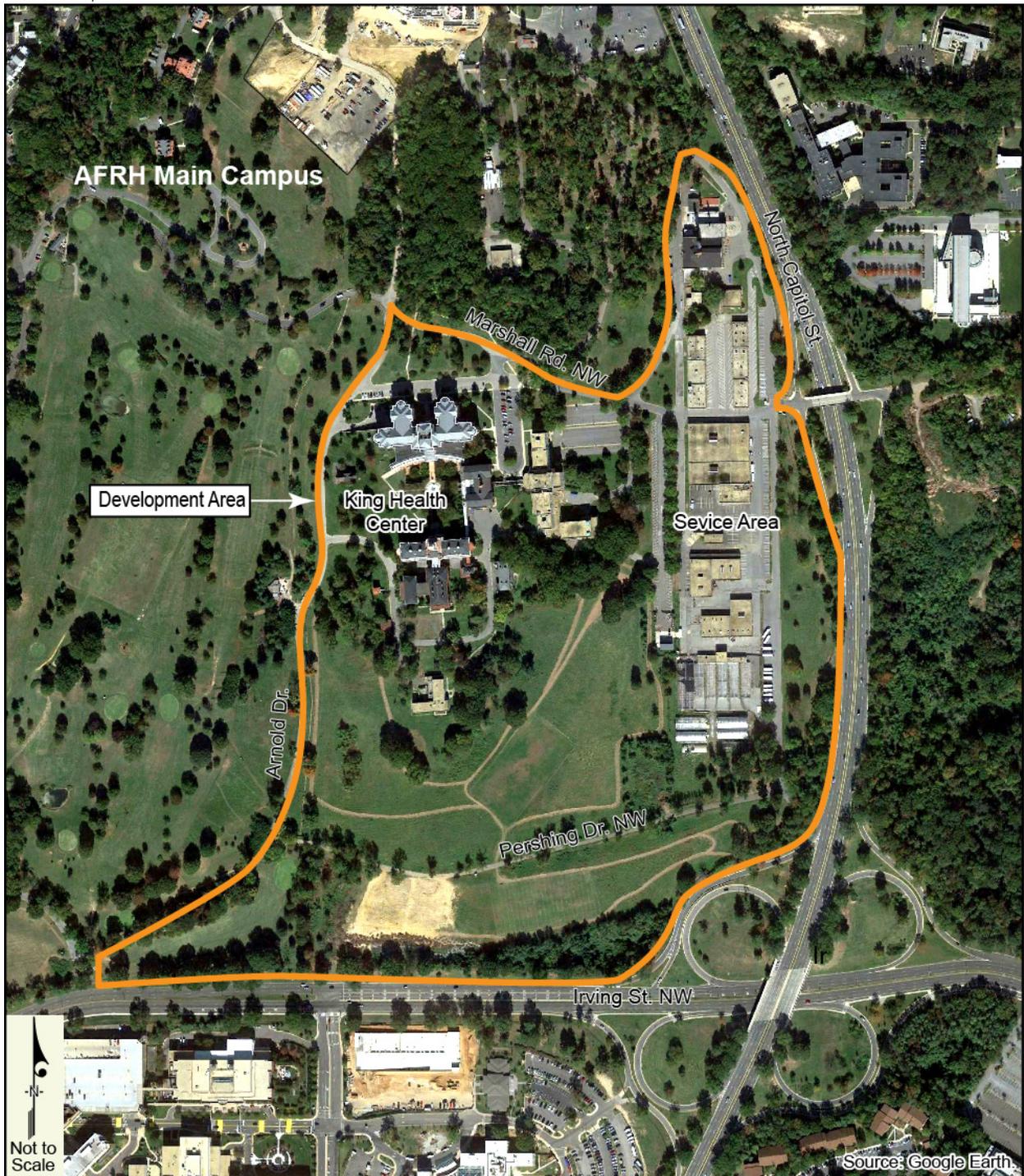


Figure 2: Property Vicinity Map

**ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL SITE ASSESSMENT**

FIGURES  
March 31, 2015

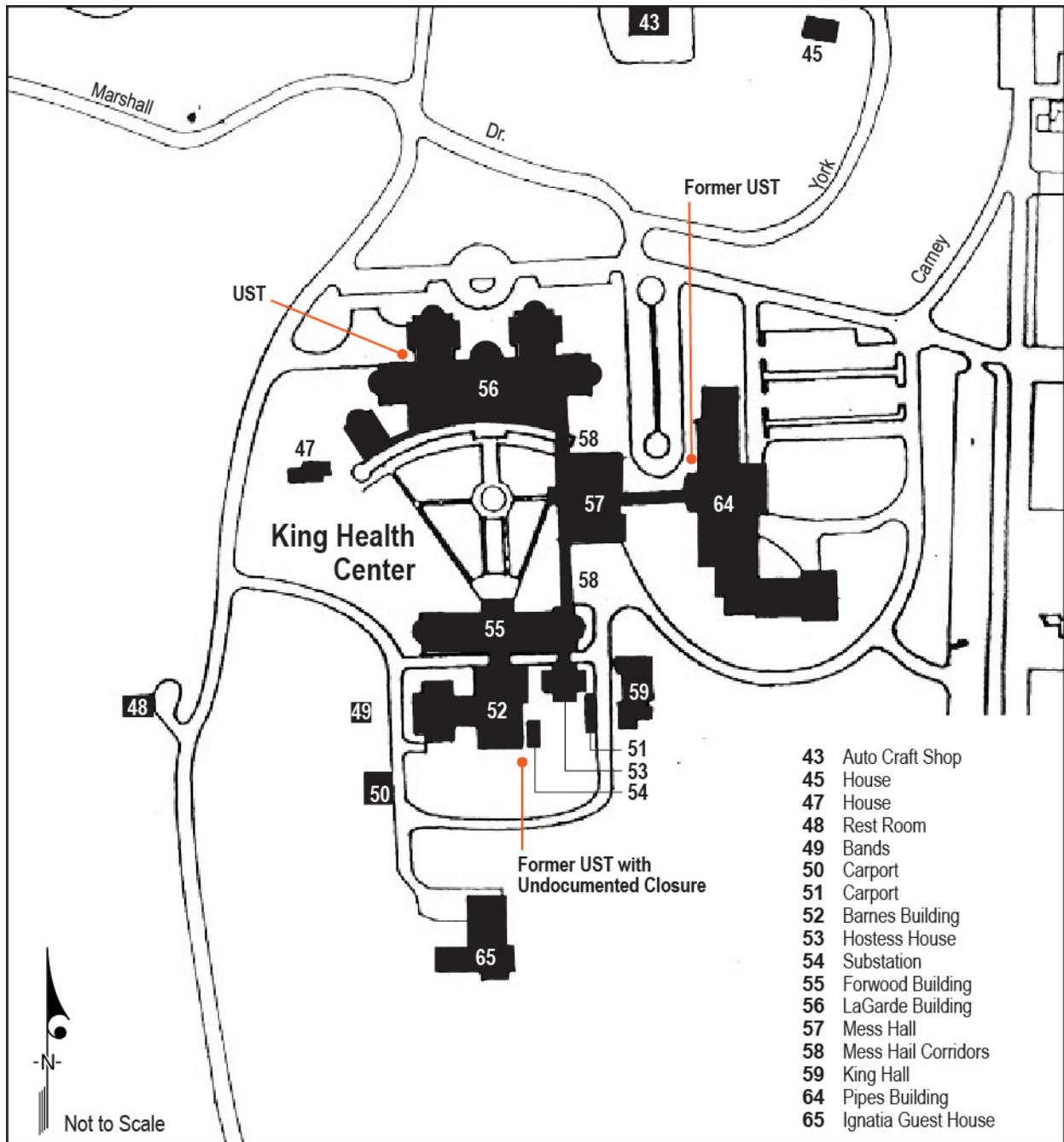


Figure 3A: Site Detail Map for King Health Center

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FIGURES  
March 31, 2015

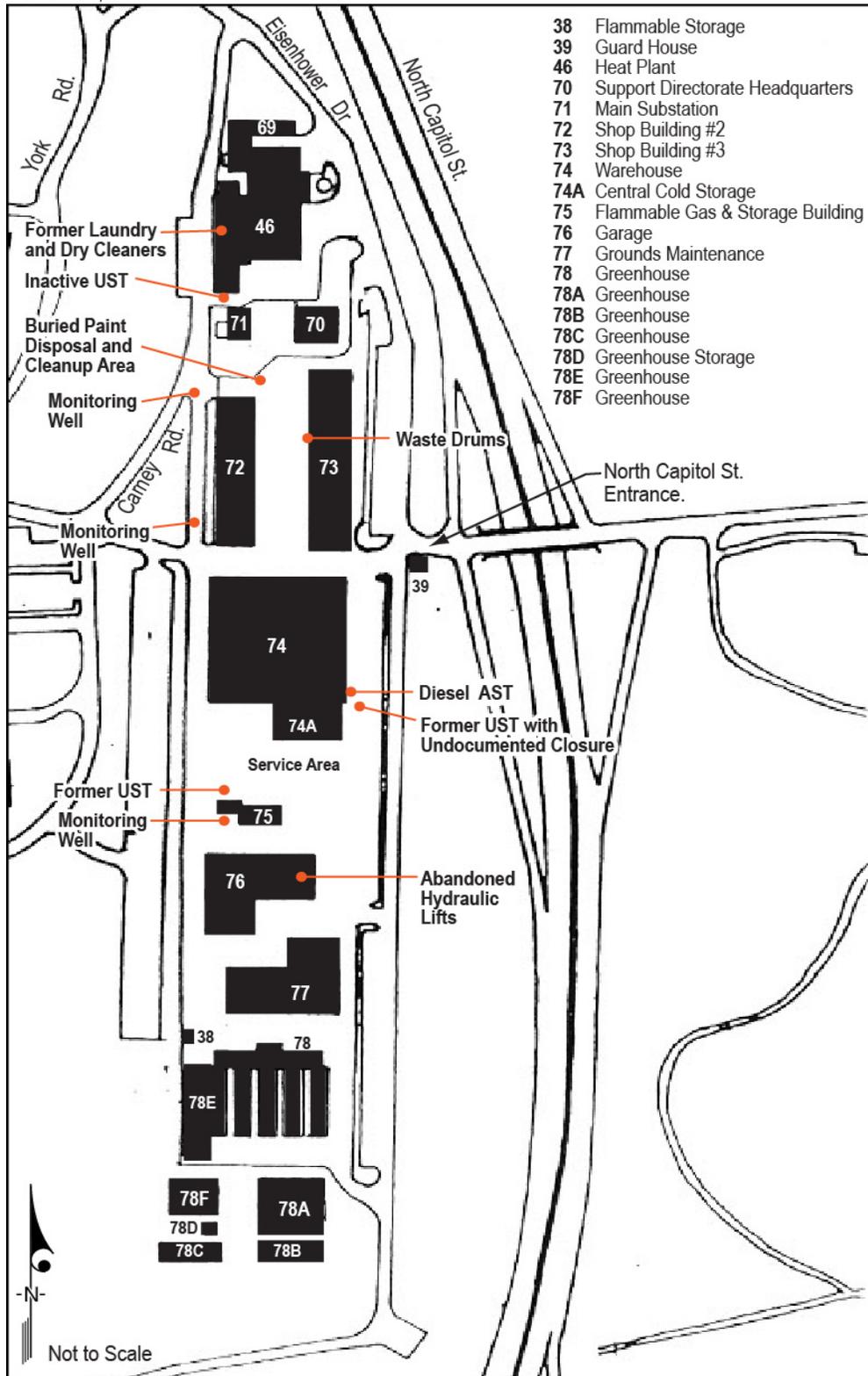


Figure 3B: Site Detail Map for Service Area

**ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**

Appendix A  
PHOTOGRAPHS OF THE PROPERTY AND VICINITY  
August 17, 2015

**Appendix A  
PHOTOGRAPHS OF THE PROPERTY AND VICINITY**

**ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**

Appendix B  
HISTORICAL RECORDS  
August 17, 2015

**Appendix B  
HISTORICAL RECORDS**

**ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**

Appendix C  
ENVIRONMENTAL AGENCY DATABASE SEARCH REPORT  
August 17, 2015

**Appendix C  
ENVIRONMENTAL AGENCY DATABASE SEARCH REPORT**

**ARMED FORCES RETIREMENT HOME (AFRH) DEVELOPMENT SITE - PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**

Appendix D  
USER PROVIDED RECORDS  
August 17, 2015

**Appendix D  
USER PROVIDED RECORDS**