

**Crystal City / Potomac Yard Corridor
Transit Improvements Project**

**Phase I Environmental Site Assessment
Hazardous and Contaminated Materials
Technical Memorandum**

October 2006

This document was completed by:

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Phase I Environmental Site Assessment Hazardous and Contaminated Materials

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1.0 INTRODUCTION

This report summarizes the findings of a Phase I Environmental Site Assessment (ESA) for proposed construction activities in the Crystal City/Potomac Yard (CCPY) Corridor. This Phase I ESA was conducted according to the American Society for Testing and Materials (ASTM) Designation E 1527-05 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” (ASTM E1527-05).

1.1 Project Description

1.1.1 Project Purpose

The purpose of the CCPY Corridor Transit Improvements Project is to advance the proposed transit improvements for the CCPY Corridor into design and construction utilizing federal grants appropriated for these transit improvements. As required by the Federal Transit Administration (FTA), the potential effects on transportation conditions and social, cultural, and natural environments in the corridor will be evaluated and documented. This process will meet the requirements of the National Environmental Policy Act (NEPA) and other federal and state policies.

1.1.2 Background

The CCPY Corridor is a five-mile long corridor that extends from the Braddock Road Metrorail station in the City of Alexandria to the Pentagon in Arlington County. Metrorail Blue and Yellow lines and Jefferson Davis Highway, a segment of heavily-traveled U.S. Route 1, form the transportation backbone of the corridor.

In 2003, the Virginia Department of Rail and Public Transportation (DRPT), Arlington County, and the City of Alexandria completed the CCPY Corridor Transit Alternatives Analysis (AA). In the AA, transit modes, which included bus rapid transit (BRT), light rail transit (LRT), and Metrorail, and alignment options were analyzed. The costs and benefits of each alternative were also assessed.

Following the completion of the AA, DRPT, in collaboration with Arlington County and the City of Alexandria, undertook the CCPY Corridor Interim Transit Improvements Study that formulated implementation strategies targeting the period from 2007 to 2014. As part of the study, an environmental scan and station area planning were conducted. At the conclusion of this study, a high-capacity, branded bus transit service using both mixed traffic operations and exclusive transitways was recommended. This service, while supporting growing transit demand from existing and new developments, would not preclude longer-term transit system improvement options that have been envisioned for the CCPY corridor, including BRT, LRT, and the addition of a Metrorail station.

1.1.4 Environmental Documentation

Both Alexandria and Arlington have secured considerable funding for the design and construction of the planned transit improvements, including several federal grants. In order to utilize the federal grants appropriated for transitways, the project sponsors must undertake environmental analyses to satisfy NEPA. Since the proposed transit improvements are planned largely in existing right-of-way and would require little or no construction, significant environmental effects are not anticipated. Based on consultation with FTA staff, the project sponsors will prepare a Documented Categorical Exclusion as the appropriate NEPA document. The studies will include an Air Quality analysis, a Noise and Vibration analysis, a Traffic

analysis, a Historic and Archaeological Analysis, a water resources analysis, and a Phase I ESA. The studies will document the level of potential impact associated with the project and identify any mitigation measures necessary to reduce or eliminate impacts.

There are a number of activities within this project corridor that are either currently being constructed by others or planned to be constructed by others. Figure 1-1 shows the CCPY planned alignment and areas where construction is underway or planned by others. Construction activities by others include new roadways, bridges, and intersection improvements. Current and proposed projects planned or constructed by others are not evaluated as part of this project, and any potential impacts to known or potential hazardous materials sites are not included in this current study. Evaluations of potential environmental impacts associated with those other improvements are assumed to be part of separate environmental documents being prepared by the agencies sponsoring those improvements.

1.2 Purpose of this Document

The ASTM Phase I ESA Standard defines a recognized environmental condition (REC) as a documented past or present activity that has resulted in an adverse effect to the environment. REC's can be present on the subject property as well as on adjacent or nearby properties. The objective of an ESA is to determine actual and potential RECs on or near the investigation site.

1.3 Scope of Services

The following general work tasks were performed to meet the project objectives:

- Compilation and review of public information concerning the history of the site and nearby properties.
- Compilation and review of information on file with appropriate federal, state, and local environmental regulatory agencies.
- Review of client-provided site information.
- Field survey of the site and surrounding area.

1.4 Key Assumptions

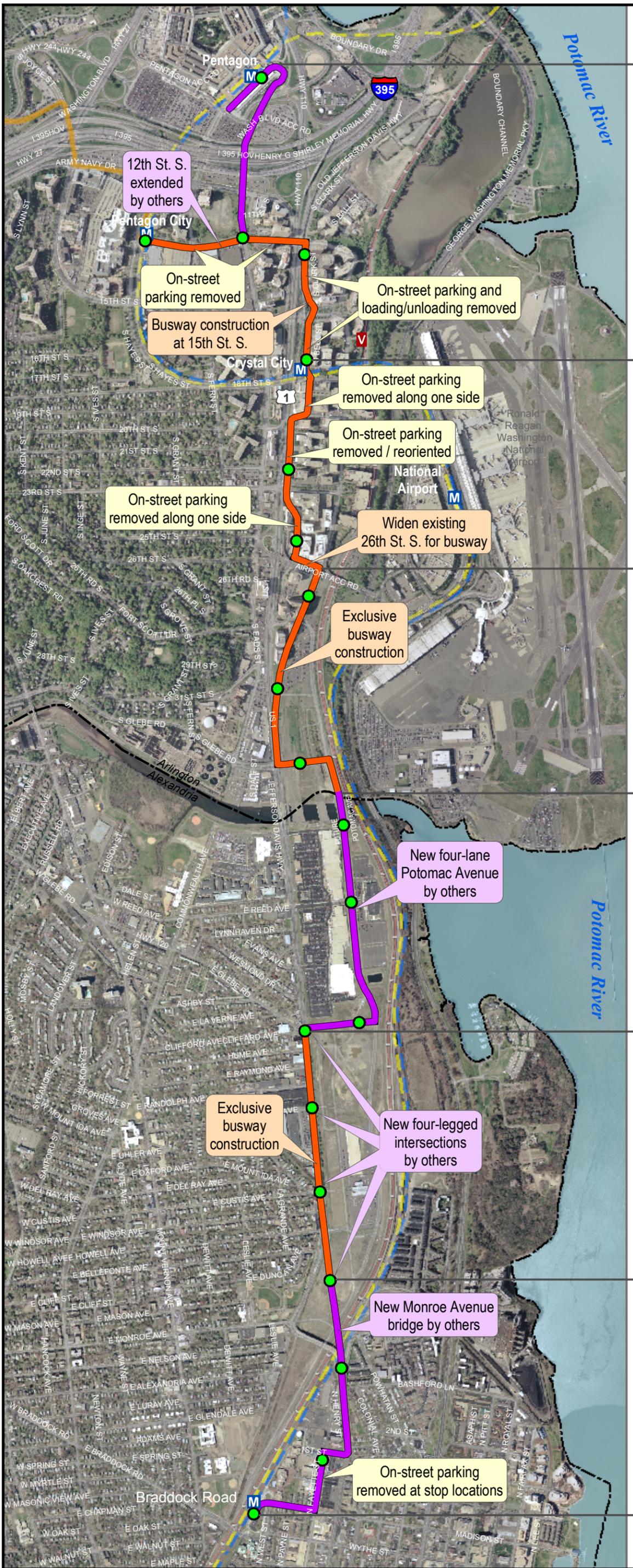
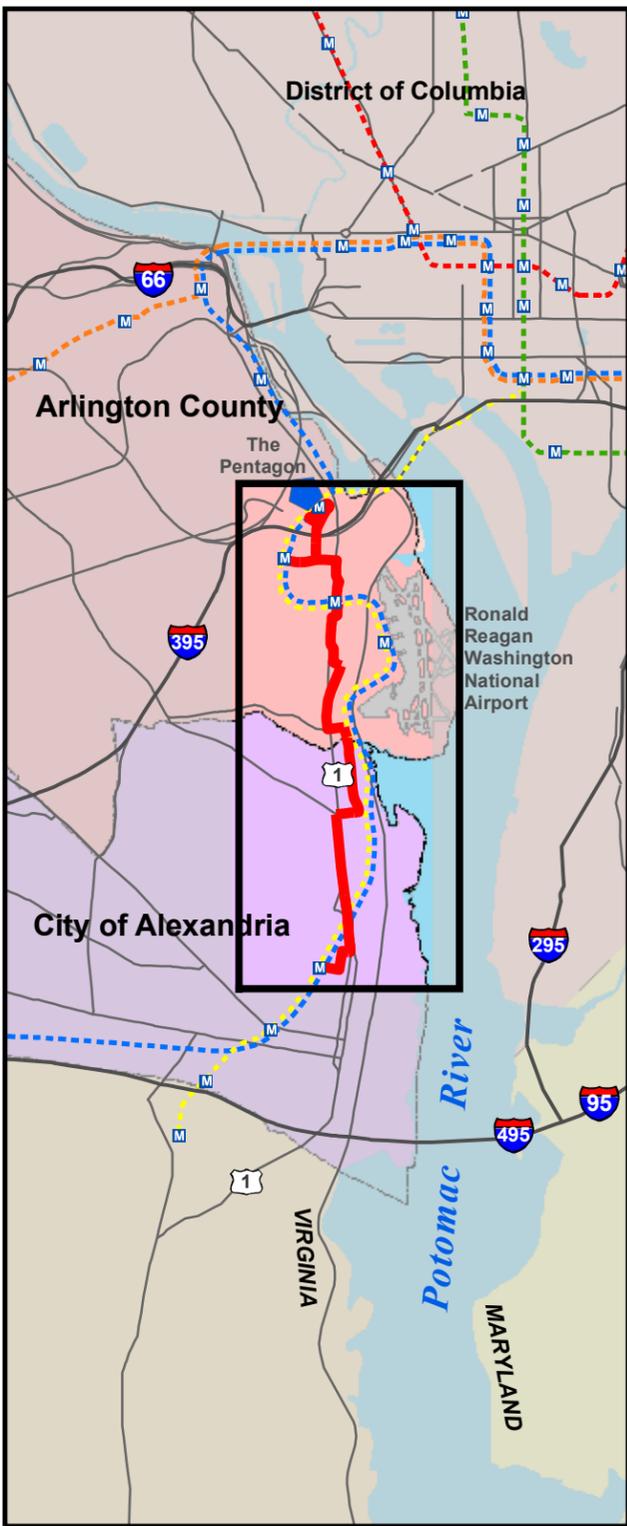
It is assumed that all relevant information obtained for the ESA is current and accurate.

1.5 Rationale for Performing Phase I ESA

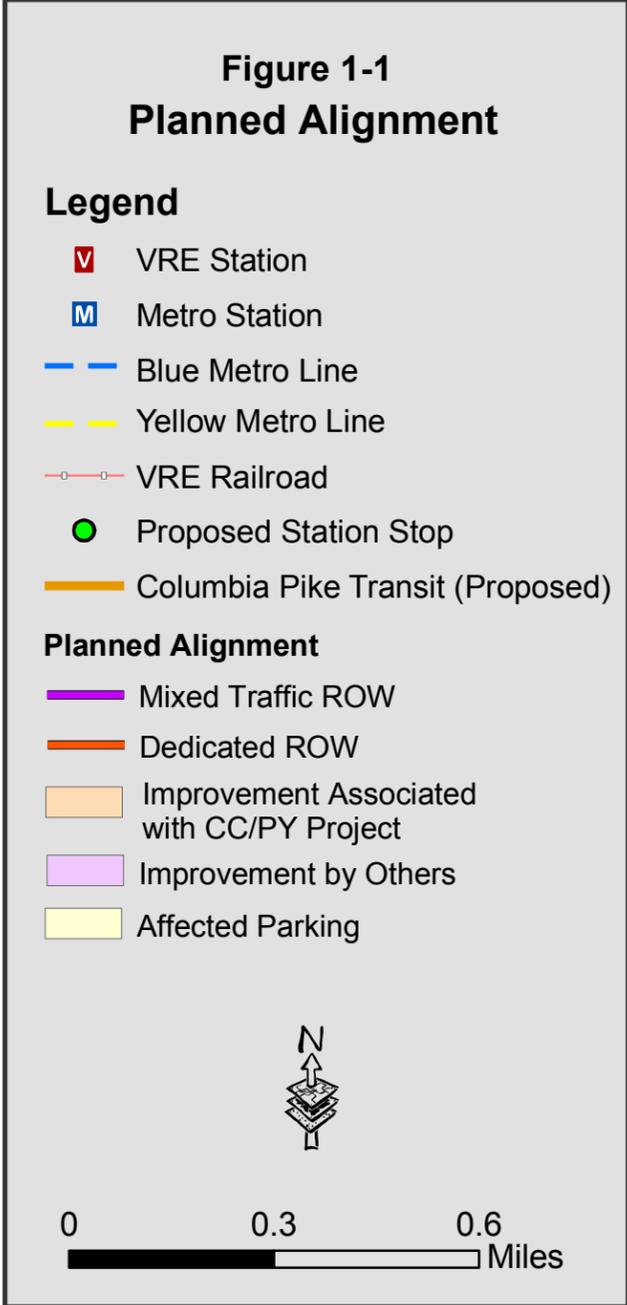
The ESA is part of a due diligence process for a planned transit improvement. The information obtained from the ESA is used to mitigate potential environmental conditions that may be encountered during construction activities at this site.

1.6 Conditions, Limitations, and Exceptions

This investigation was limited to the areas planned for expansion in the CCPY Corridor and did not include a comprehensive environmental or safety audit of the corridor. No testing or sampling was performed as part of the ESA.



Arlington Pentagon	F
Arlington Crystal City	E
Arlington Potomac Yard	D
Alexandria Potomac Yard	C
Alexandria Route 1	B
Alexandria Route 1 South	A



1.7 User Reliance

The findings of this report are provided for the sole use of the Washington Metropolitan Area Transit Authority (WMATA), the City of Alexandria, Arlington County, and their designated representatives. Use or reliance of this report by another party is not authorized without the express written consent of WMATA, the City of Alexandria, or Arlington County.

2.0 SITE DESCRIPTION

2.1 Project Alignment and Planned Improvements

The planned alignment for the CCPY Corridor Transit Improvements Project begins at the Braddock Road Metrorail Station and ends near the Pentagon in Arlington County. The alignment passes through 38 intersections. The planned transit alignment, stops, and location of exclusive right-of-way are shown in Figure 1-1. The planned CCPY Corridor Alignment has been separated into six segments that are identified from south to north. The segments are described below:

Segment A - Alexandria Route 1 South

Segment A begins at the Braddock Road Metrorail Station and heads east on Madison Street to North Fayette Street. The planned alignment turns north on Fayette Street and then east on 1st Street before turning north again on North Henry Street and crossing the realigned Monroe Avenue Bridge. The planned alignment in Segment A runs entirely in mixed traffic on existing roadway.

Segment B - Alexandria Route 1

Segment B runs north along Route 1 from the realigned Monroe Avenue Bridge to East Glebe Road. The planned alignment in Segment B runs entirely in exclusive transit lanes either in a median busway or along the east and west curbsides of Route 1 to East Glebe Road, where it transitions to mixed traffic.¹

Segment C - Alexandria Potomac Yard

Segment C travels east on East Glebe Road from Route 1 through the planned Potomac Yard Town Center to Potomac Avenue. It then turns north along Potomac Avenue to the Alexandria/Arlington line. The planned alignment in Segment C runs entirely in mixed traffic.

Segment D - Arlington Potomac Yard

Segment D begins at the Alexandria/Arlington border running in mixed traffic north on Potomac Avenue. It transitions to exclusive lanes as it turns west on South Glebe Road, running on the northern side of the roadway in right-of-way donated as part of the planned development of Potomac Yard. The alignment turns north on Jefferson Davis Highway and merges with South Crystal Drive, running on the east side of the roadway to the intersection of South Crystal Drive and 26th Street South.

Segment E- Arlington Crystal City

Segment E begins at 26th Street South and South Crystal Drive running west before turning north on South Clark Street to 20th Street South. At 20th Street South, the planned alignment

¹ The 2030 analysis is based upon a median alignment in Segment B as the proposed action. The City of Alexandria has not made a definitive decision about the alignment in Segment B; thus, the 2015 analysis examines the effects of both alignments.

turns east and then north on South Bell Street to the Crystal City Metrorail Station at 18th Street South. This segment runs entirely in exclusive curbside lanes.

Segment F - Arlington Pentagon

Segment F begins at the Crystal City Metrorail Station and travels north on South Bell/South Clark Street before turning west on 12th Street. At South Eads Street, the alignment splits into two branches serving the Pentagon and Pentagon City. The first branch turns north on South Eads Street to the Pentagon Transit Center. The second branch continues west on 12th Street South to the Pentagon City Metrorail Station. The planned alignment in Segment F runs in exclusive curbside lanes until the intersection of 12th Street and South Eads Street, where it transitions to running in mixed traffic.

2.2 Study Area

The study area for the assessment of hazardous and contaminated materials is defined as 100 feet on either side of the planned CCPY alignment and/or sites immediately adjacent to the planned alignment. Though any site, and sites located outside the 100-foot study area can impact any alternative, this study area was chosen to include potential sites within or immediately adjacent to the planned alignment due to the relatively limited construction foreseen for the project. For the purposes of this Phase I ESA, construction activities assumed to have invasive or subsurface work would include the installation/upgrading of station stops and the installation of new roadways. All other project work is assumed to be completed at grade. Therefore, construction impacts are not anticipated outside of the 100-foot study area at this time.

2.3 Current Use of Adjoining Properties

Conditions along the corridor are very urban with a mix of commercial and residential land uses. Most of the corridor has been disturbed over the years to make way for the various developments that exist. Very little natural environment exists with the exception of designated recreation areas, landscaped areas, and along Four Mile Run and the Potomac River.

The density and mix of uses varies within the corridor. The existing development in southern half of the corridor is residential in character, with commercial uses along Route 1, Mount Vernon Avenue, and around the Braddock Road Metrorail station. There is also active redevelopment of several sites for residential and retail uses at the edge of Old Town Alexandria. The central portion of the corridor is occupied by Potomac Yard, a 368-acre former rail yard that is being redeveloped with a mix of office, residential, and retail uses. Build-out of Potomac Yard over the next 10 years will result in approximately 4.4 million square feet of new office space, 3,000 new residential units, 1,200 new hotel rooms, and 270,000 square feet of new retail space.

The Pentagon City and Crystal City areas in the northern part of the corridor are a mix of high-density residential and office uses. Development projects in the area include new residential buildings in Pentagon City and Crystal City, as well as a possible conference center and office building in Pentagon City just south of the Pentagon reservation. Northeast of the proposed alignment is the North Tract site, a former industrial-commercial area which includes the former Davis Scrap Yard and is being redeveloped by Arlington County for recreational use and open space.

3.0 METHODOLOGY

The study approach used and tasks accomplished as part of this investigation included:

- A review of past project reports and findings inclusive of the Crystal City/Potomac Yard Corridor Interim Transit Improvements Project Technical Memorandum: Environmental Scan dated November 2005;
- A review of Federal, State, and local on-line database records for contaminated sites and sites containing hazardous substances; and
- A site survey within the study area, focusing on contaminated sites, potentially contaminated sites, and readily identifiable RECs, where applicable.

3.1 Records Review

The current and past regulatory statuses of the subject property and nearby properties were determined by a review of numerous regulatory databases maintained by the United States Environmental Protection Agency (USEPA) and the Virginia Department of Environmental Quality (VDEQ). Environmental agency records were searched for an area up to two miles from the center of the alignment in general accordance with ASTM E1527-05.

Sites identified in this initial search were screened to include only those sites located within 100 feet and those sites that were proximate to the planned alignment. Though any site, including those sites further than 100 feet from the alignment, could impact construction activities, the selected study area was chosen due to the limited foreseen construction associated with CCPY. Search results are presented in Appendix A.

3.1.1 User Provided Information

WMATA, the City of Alexandria, and Arlington County provided information related to planned transit improvements and current site operations in place in the CCPY Corridor.

The City of Alexandria provided a copy of a Human Health and Ecological Risk Assessment performed at the Potomac Yard Site by Weinberg Consulting Group Inc. for the Richmond, Fredericksburg & Potomac Railroad Company (RF&P) Railroad Company (June 1995) (see Appendix B). This report was based on the findings of the Extent of Contamination Study that was conducted by RF&P in February 2005. The Potomac Yard site is a decommissioned, inactive rail yard that extends from Braddock Road in the City of Alexandria north to Crystal City in Arlington County. RF&P has plans for and construction underway to develop the site to include a transportation hub, mixed housing, and commercial development (as described above). The Human Health and Ecological Risk Assessment was conducted to fulfill requirements set forth in the Administrative Order by Consent between RF&P and the USEPA (Docket No. III-92-61-DC). Overall, the risk assessment concluded that there were no barriers to the development of the site and suggested that development would be beneficial in reducing risks to both human health and the natural environment. As a result of the risk assessment, VDEQ determined that the contamination levels at this site did not represent an identified risk to human health and the environment and subsequently closed the case (See Letter dated October 16, 2000 in Appendix B).

Findings from the November 2005, Crystal City/Potomac Yard Corridor Interim Transit Improvements Project Technical Memorandum: Environmental Scan were also reviewed and compared with the findings of this ESA. This report recommended that a Phase I ESA should be conducted as the project progresses.

3.1.2 On-Line Databases

Federal, State, and local on-line publications were reviewed in order to confirm the accuracy of information provided by the comprehensive database search and to provide supplemental and updated data where applicable. The following databases were used for those sites present at and immediately adjacent to the planned alignment. Summaries of the available on-line databases are presented in Appendix C.

Federal Databases:

- NPL National Priority List
- Proposed NPL Proposed National Priority List
- CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System
- CERC-NFRAP CERCLIS No Further Action Planned
- CORRACTS Corrective Action Report
- RCRIS-LQG Resource Conservation and Recovery Information System Large Quantity Generators
- RCRIS-SQG Resource Conservation and Recovery Information System Small Quantity Generators
- ERNS Emergency Response Notification System for reported releases of oil and hazardous substances

Federal Supplemental Databases:

- CONSENT Superfund (CERCLA) Consent Decrees
- ROD Records of Decisions
- Delisted NPL National Priority List Deletions
- FINDS Facility Index System/Facility Identification Initiative Program Summary Report
- HMIRS Hazardous Materials Information Reporting System
- MLTS Material Licensing Tracking System
- MINES Mines Master Index File
- NPL Liens Federal Superfund Liens
- PADS PCB Activity Database System
- RAATS RCRA Administrative Action Tracking System
- TRIS Toxic Chemical Release Inventory System
- TSCA Toxic Substances Control Act
- FTTS FIFRA/TSCA Tracking System – FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act)/TSCA (Toxic Substances Control Act)

State Databases:

- VDEQ Reported Releases
- VDEQ Registered Tanks
- VDEQ Volunteer Remediation Cleanup Sites (Completed and Planned)
- VDEQ Solid Waste Facilities

3.2 Site Surveys

Site surveys were performed to verify the findings from the database search, obtain additional information, and to identify other RECs within the study area during June and July of 2006. The findings of the site surveys were limited to readily observable conditions within the areas of proposed construction. The surveys focused on applicable non-residential sites and on sites detailed in the databases, publications, and historical documentation. Typically, properties that are industrial, warehousing, and/or manufacturing related are more likely to present a greater environmental concern than residential properties. The sites along the alignment were visually inspected, where appropriate, for the presence of potential RECs (e.g., storage tanks, drums, stained soil, stressed vegetation, waste piles, monitoring wells, etc.) as observable from public rights-of-way. This Phase I ESA did not include intrusive or subsurface testing or sampling.

4.0 FINDINGS

Seventy-two sites with past or present RECs were identified along the planned alignment within the respective Segment. Table 4-1 lists the number of sites found in each segment. The locations of the sites identified within 100 feet on either side of the planned alignment are summarized by segment in Table 4-2. The sites are also illustrated on Figures 4-1 and 4-2.

Table 4-1: Number of Contaminated/Hazardous Materials Sites along the CCPY Alignment

Segment	Number of Sites
Segment A – Alexandria Route 1 South	17
Segment B – Alexandria Route 1	6
Segment C – Alexandria Potomac Yard	6
Segment D – Arlington Potomac Yard	5
Segment E – Arlington Crystal City	13
Segment F – Arlington Pentagon	25

Table 4-2: Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
Segment A - Alexandria Route 1 South							
A1	681	Public Broadcasting Service	1320 Braddock Place	Alexandria	VA LTANKS	20053162	Reported: 22-Dec-2004. Case Closed.
	681				VA AST	3039499	Owner ID: 37923. CEDS Facility ID: 200000218552. 2,000-gal Diesel UST currently in use.
A2	EL747	Advantage Auto Stores	806 N Henry Street	Alexandria	RCRA-SQG	VA0000145060	No violations found.
A3	EL743	Veeco Commonwealth	810 N Henry Street	Alexandria	RCRA-SQG	VAD981946817	No violations found.
A4	EL732	Associated Design & Mfg Co#	814 N Henry Street	Alexandria	RCRA-SQG	VAD046731840	No violations found.
A5	DV657	Tony's Auto Service	1112 First Street	Alexandria	VA UST	3023665	Owner ID: 28386. CEDS Facility ID: 200000079511. 4,000-gal Gas UST rem from ground.
	DV658	Gulf/Tony's			VA LUST	90-1501	Release Date: 05/02/1990. Closed Date: 10/20/1994.
	DV658	Tony's Gulf			VA LTANKS	19901501	Reported: 02-May-1990. Case Closed.
	DV659				RCRA-SQG	VAD988215885	No violations found.
A6	DX651	Washington Cold Storage	1200 First Street	Alexandria	VA UST	3006547	Owner ID: 32752. CEDS Facility ID: 200000090238. 2,000-gal Diesel UST perm out of use. Two 5,000-gal Gas USTs closed in the ground. 10,000-gal Diesel UST closed in the ground.
	DX652	Washington Cold Storage Assoc.			VA LTANKS	19891602	Reported: 25-May-1989. Case Closed.
	DX653	Washington Cold Storage Assoc.			VA LUST	89-1602	Facility ID: 3006547. Release Date: 05/25/1989. Closed Date: 9/19/1989.
	DX654	--			HMIRS	2002040977	Facility has reported hazardous material incidents to DOT. On 03/14/2002, 40 gal of F/O was released due to container failure during bulk loading/unloading.
	N/A	Currently Meridian Apartment Building			SITE SURVEY	--	Currently used as an apartment building.
A7	DX650	Crowder Property	1207 First Street	Alexandria	VA LUST	99-3295	Facility ID: 3900088. Release Date: 03/11/1999. Closed Date: 3/24/2000.
A8	DX649	Alexandria Auto Service	1217 First Street	Alexandria	RCRA-SQG	VAR000006502	Violations Exist on 06/28/1996. Area of Violation: Generator-General Requirements and Generator- Pre-Transport Requirements. Violations resolved: 03/18/1997.

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
A9	DX647	Crowder Transfer & Storage	1219 First Street	Alexandria	VA UST	3001649	Owner ID: 29299. CEDS Facility ID: 200000079122. 2,000-gal Gas UST closed in the ground.
A9	DX648	Crowder Property			VA LTANKS	19993295	Reported: 11-Mar-1999. Case Closed.
A10	N/A	Trash Away Clean Inc	1225 First Street	Alexandria	SITE SURVEY	--	Solid Waste Facility Offices with some trucks. Processing not apparent.
A11	N/A	Yates Car Wash and Detail Center	1018 N. Henry Street	Alexandria	SITE SURVEY	--	Automotive drive thru detail center. Possible runoff concerns.
A12	N/A	Asian Auto	1200 N. Henry Street	Alexandria	SITE SURVEY	--	Automotive mechanic shop with auto repairs.
A13	N/A	Old Town Paint and Plaster	1200 N. Henry Street Suite J	Alexandria	SITE SURVEY	--	Retail facility for contractor bulk supplies.
A14	DV639	Downtown Garage Inc	1022 N Henry Street	Alexandria	VA UST	3012013	Owner ID: 26767. CEDS Facility ID: 200000078864. Two 10,000-gal Gas USTs and One 5,000-gal Gas UST closed in the ground.
	RCRA-SQG				VAD023626617	No violations found.	
	N/A	Currently Storage USA			SITE SURVEY	--	Currently a storage center facility.
A15	DQ630	RF&P Facility	1100 N Fayette Street	Alexandria	VA UST	3025574	Owner ID: 28228. CEDS 200000075128. 250-gal UST closed in grd.
	N/A	Currently Next Realty			SITE SURVEY	--	Current realty office.
A16	DQ609	ANC Rental Corp.	1200 N Fayette Street	Alexandria	RCRA-SQG	VAR000501866	No violations found.
A17	537	Federal Express Corp	1200 N Fayette Street	Alexandria	RCRA-SQG	VAD988171344	No violations found.
	DQ603				HMIRS	97061023	On, 05/21/1997, 1/4-gal petroleum distillates NOS package had leaked in transit. The package was then held at the FedEx facility pending disposition.
	DQ604				HMIRS	96080609	On 07/24/1996, 2/3-gal petroleum distillates NOS package had leaked. Odor was quite strong. Package placed in steel salvage drum. Package returned to shipper.
	DQ605				VA LUST	89-1447	Pollution Complaint # 19891447. Facility ID: 3016413. Release Date: 05/05/1989. Closed Date: 9/6/1994.

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
A17	DQ606				RCRA-SQG	VAD988171518	No violations found.
	DQ608				VA LTANKS	20003320	Facility ID: 3016413. Reported: 14-Apr-2000. Waste Oil. Case Open.
	N/A	Currently National and Alamo Car Rental Storage Lots			SITE SURVEY	--	Currently used for rental car storage lots.
Segment B - Alexandria Route 1							
B1	BJ320	Potomac Oxygen Co	2200 Jefferson Davis Highway	Alexandria	VA UST	3018196	Owner ID: 36850. CEDS Facility ID: 200000075551. 550-gal Gas closed in ground.
B2	BG285	Exxon Co USA 20388	2340 Jefferson Davis Highway	Alexandria	RCRA-SQG	VAR000011981	No violations found.
	BG302				VA UST	3026056	Owner ID: 40064. CEDS Facility ID: 200000193471. 10,000-gal Diesel UST, two 15,000-gal Gas USTs currently in place. 8,000-gal Gas rem from use.
	BG285	2320 Fannon Street	RCRA-SQG		VAR000011981	No violations found.	
	BG303	Carsons Auto Works	2340 Jefferson Davis Highway		RCRA-SQG	VAD988193348	No violations found.
B3	BJ309	Avis Rent A Car	2301 Jefferson Davis Highway	Alexandria	VA LTANKS	20043064	Reported: 07-Oct-2003. Case Open.
	BJ310	Avis Rent A Car System Inc			VA UST	3006755	Owner ID: 36573. CEDS Facility ID: 200000073770. 12,000-gal Gas UST currently in use.
B4	ORPHAN	Oakville Industrial Park	2500 TO 2600 Jefferson Davis Highway	Alexandria	VA VRP	VRP00356	Site consists of an industrial park with several different blocks with approximately 28 tenants all with separate individual street addresses. Streets include: Jefferson Davis Highway, Calvert, Swann, Murray, Oakville, & Fannon. Additional PC# 1993-2151 for the reporting of solvents. PC# 1992-0640 was assigned for a heating release and was closed on 8/23/94. A Remedial Action Workplan is under development for cleanup.
	BE271	Action Auto Body Inc	2402 Oakville Street	Arlington	RCRA-SQG	VAD074825480	No violations found.

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
B4	BE272	Oakville Industrial Park - Bldg 2 Tank 4	2520 Oakville Street	Arlington	VA UST	3025842	Owner ID: 32048. CEDS 200000222949. 3,000-gal Diesel UST perm out of use.
					VA LTANKS	19920640	Reported: 03-Oct-1991. Case Closed.
	BE273	Oakville Industrial Park - Bldg 2 Tank 9	2500 Oakville Street	Arlington	VA UST	3024477	Owner ID: 32048. CEDS 200000222948. 1,000-gal Gas UST rem from grd.
					VA LTANKS	19932151	Reported: 15-Apr-1993. Case Open.
	AR227	"Oakville Industrial Park - Bldg 5 Tank 1,2,3	2604 Jefferson Davis Highway Bldg 5	Alexandria	VA UST	3025652	Owner ID: 32048. CEDS Facility ID: 200000079895. Three 12,000-gal USTs closed in the ground.
	BE274	Oakville Industrial Park - Bldg 2 Tank 8	2402 Oakville Street Bldg 2	Alexandria	VA UST	3012282	Owner ID: 32048. CEDS 200000075890. 2,000-gal Gas UST rem from grd.
	BE275	Oakville Industrial Park	2402 Oakville Street	Alexandria	VA LUST	93-2151	Facility ID: 3012282. Release Date: 04/15/1993. Case Open.
	BE275	Oakville Industrial Park	2402 Oakville Street	Alexandria	VA LUST	92-0640	Facility ID: 3012282. Release Date: 10/03/1991. Closed Date: 8/23/1994.
	N/A	Auto Appearance Salon	2414 Oakville Street	Alexandria	SITE SURVEY	--	Automotive detail center.
N/A	Ti's Auto Repair and Body Shop	2420 Oakville Street	Alexandria	SITE SURVEY	--	Automotive mechanic shop with auto repairs.	
BC276	Oakville Industrial Park - Bldg 4 Tank 7	405 Murray Avenue Bldg 4	Alexandria	VA UST	3012559	Owner ID: 32048. CEDS 200000075884. 2,000-gal Diesel UST rem from grd.	
B5	AR228	Crystal City Auto Center Inc	2604 Jefferson Davis Highway	Alexandria	RCRA-SQG	VAD069284115	No violations found.
B6	S105	Mobil Oil Corporation	3014 Jefferson Davis Highway	Alexandria	VA UST	3011018	Owner ID: 28304. CEDS Facility ID: 200000076286. Two Gas USTs perm out of use.
	N/A	Currently Shell Station			SITE SURVEY	--	Active retail gasoline station.
Segment C - Alexandria Potomac Yard							
C1	ORPHAN	Target Store #1076	3101 Jefferson Davis Highway	Alexandria	RCRA-SQG	VAR000511378	Conditionally Exempt Small Quantity Generator.
C2	K44	TJ MAXX	3451 Jefferson Davis Highway	Alexandria	VA SPILLS	99-NONE	Case Closed.
C3	226	Town of Slaters Village (Potomac YD)	Potomac YARD	Alexandria	VA LUST	98-3508	Facility ID: 3900752. Release Date: 07/10/1997. Closed Date: 3/9/1998.
	226				VA LTANKS	19983508	Reported: 10-Jul-1997. Case closed.

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
C4	AB155	National Tire and Battery	2800 Jefferson Davis Highway	Alexandria	RCRA-SQG	VAR000509752	No violations found.
C5	S111	Earl Scheib Auto Paint	2820 Jefferson Davis Highway	Alexandria	VA SPILLS	2004-N-0618	Auto body paint shop generates no haz waste, corporate policy.
C6	N/A	Potomac Yard Motor Shop	3014 Jefferson Davis Highway	Alexandria	SITE SURVEY	--	Motor Shop at Former Potomac Yard Property.
	AB148	Richmond Fredericksburg & Potomac RR CO (RF&P) Train Derailment - KOH	2801 Jefferson Davis Highway	Alexandria	VA LTANKS	19820331	Reported: 02-Nov-1981. Case Closed.
	AB148	VA LTANKS			19911942	Reported: 23-Jun-1991. Case Closed.	
	AB148	VA LTANKS			19911668	Reported: 07-May-1990. Case Closed.	
	AB149	RF&P Potomac Yard			VA LUST	89460	Date Reported: 10/27/1988. Report of possible contamination to GW/Potomac R. with various chemicals & originating at RF&P RR; OE notified for action.
	AB150	Potomac Yard	VA UST	3012524	Owner ID: 28228. CEDS Facility ID: 200000075539. 4600-gal. Gas UST perm out of use. 20,000-gal UST rem from grd. 1,000-gal gas UST rem from grd. 1,000-gal Used Oil UST rem from grd. 20,000-gal Diesel UST rem from grd. 1,650-gal Used Oil UST perm out of use. 1,600-gal Kerosene UST perm out of use. 4,600-gal Gas UST perm out of use.		
	AB151	RF&P	VA LTANKS	19800491	Reported: 27-Jan-1980. Case Closed.		
	AB152		VA LUST	3012524	Pollution Complaint #: 91-1668. Release Date: 05/07/1990. Closed Date: 10/16/2000.		
	AB152		VA LUST	3012524	Pollution Complaint #: 91-1942. Release Date: 06/23/1991. Closed Date: 12/5/1997.		
	AB152		VA LUST	3012524	Pollution Complaint #: 95-4131. Release Date: 11/22/1994. Closed Date: 1/13/1997.		
	AB152		VA LUST	3012524	Pollution Complaint #: 80-0491. Release Date: 01/27/1980. Closed Date: 6/23/1995.		
	AB152		VA LUST	3012524	Pollution Complaint #: 82-0331. Release Date: 11/02/1981. Closed Date: 6/23/1995.		
AB152	VA LTANKS		19954131	Reported: 22-Nov-1994. Case Closed.			

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
C6	114	RF&P RR CO (Potomac Yard)	2900 Jefferson Davis Highway	Arlington	CERCLIS	1000242769	Referred to Removal - NFRAP. 3 retention ponds for spent oil, grease and water from locomotive engines, oil dripping, and spills. Spent material is generated as a consequence of washing locomotives.
	114				RCRA-SQG	VAD020312013	No violations found.
	ORPHAN	RF&P Yard	400 Jefferson Davis Highway		VA LTANKS	19890460	Reported: 28-Oct-1988. Case Closed.
	ORPHAN				VA LTANKS	19900555	Reported: 30-Jan-1990. Case Closed.
	ORPHAN	RF&P Facility			VA LTANKS	19911566	Reported: 24-Apr-1991. Case Closed.
	ORPHAN				VA LTANKS	19900955	Reported: 30-Jan-1990. Case Closed.
ORPHAN	Railroad Yard between Old Town Alexandria and National Airport	Railroad Yard between Old Town Alexandria and National Airport	ERNS	2871	Spill Date: 02/27/1989. Trucks observed dumping brownish-red liquid into two pits in area at RR yard adjacent to UPS parking lot. Comments: dumping has occurred for several months.		
Segment D - Arlington Potomac Yard							
D1	AB153	Emory Air Freight	2800 Jefferson Davis Highway	Alexandria	VA LUST	91-0953	Facility ID: 3026814. Release Date: 01/04/1991. Closed Date: 1/3/1993.
	AB153				VA LTANKS	19910953	Reported: 04-Jan-1991. Case Closed.
	AB154				VA UST	3026834	Owner ID: 34616. CEDS Facility ID: 200000078708. 1 UST perm out of use.
	N/A	Currently Thrifty Car Rental			SITE SURVEY	--	Used for office and storage of rental cars.
D2	H25	Jeff Davis Associates / Budget Rent A Car	2800 Crystal Drive	Arlington	VA UST	3018326	Owner ID: 41507. CEDS Facility ID: 200000077303. 2,000-gal Gas perm out of use. 2,000-gal Diesel closed in ground. 10,000-gal Diesel closed in ground. 10,000-gal Gas perm out of use. 10,000-gal Diesel closed in ground.
	H26	Jeff Davis Associates			VA UST	3037885	Owner ID: 39862. CEDS Facility ID: 200000077303. Two 15,000-gal H/O UST closed in ground. One 2,500-gal Diesel UST closed in ground.

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
D3	N/A	Hyatt Regency Crystal City	2799 Jefferson Davis Highway	Arlington	VA SPILLS	20013073	CEDS 200000197455. Release Reported 10/9/2000. Case Closed.
					VA UST	3009552	CEDs 200000077456. 20,000-gal H/O UST curr in use.
	J36				ERNS	8856285	Report No: 06391 Spill Date: 05/17/1988. Delivery truck spilled 100 gal of Diesel fuel in banquet room. Company personnel to cleanup spill.
	J37				VA SPILLS	2001-N-0254	Pollution Complaint # 20013073. Tank release - Fuel pipe fell on AST causing release between 10/07/00 and 10/08/00.
	J38				VA AST	3009552	Owner ID: 40117. CEDS 200000077456. 20,000-gal H/O AST curr in use.
	J40				RCRA-SQG	VAD057370025	No violations found.
D4	ORPHAN	26th Street between Crystal Drive and Clark	27th Street between Crystal Drive and Clark	Crystal CITY	VA SPILLS	2002-N-0850	Date In: 06/04/2002. Date Closed: 06/06/2002. Strong fumes while (caller) was walking outside. Strong like glue fumes in that particular block for the past month. He works in the southern end of crystal city south of national airport.
	ORPHAN				VA SPILLS	2002-N-0883	Date In: 06/17/2002. Date Closed: 06/20/2002. Strong fumes - this is 2nd complaint.
D5	N74	Flyover Bridge to Regan National Airport	2611 S. Clark Street	Crystal CITY	VA SPILLS	2002-N-0142	Traffic Accident - Shuttle bus driver backed into transformer, releasing mineral oil. A&A did clean up.
Segment E - Arlington Crystal City							
E1	65	Crystal Drive/26th Street	Crystal Drive/26th Street	Arlington	VA SPILLS	2001-N-0108	Date In/Closed: 08/08/2000. Spill on RR tracks located near Arlington/Alexandria line - as result of overfill.

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
E2	Q97	Larry Steinhauer (Dollar Rent A Car Systems)	2600 Jefferson Davis Highway	Arlington	VA UST	3012556	Owner ID: 36852. CEDS Facility ID: 200000079214. One 2,000-gal gas UST perm out of use and one 2,000-gal gas AST currently in use.
	Q98	Dollar Car Rental			VA SPILLS	2000-N-0710	Automated car wash, according to county not connected to sanitary.
E3	N80	Department of Navy Naval Sea System	2531 Jefferson Davis Highway	Arlington	RCRA-SQG	VAD988174298	No violations found.
E4	Z139	McMullen Associates Inc., John J	2341 Jefferson Davis Highway	Arlington	RCRA-SQG	VAD070917307	No violations found.
E5	Z169	Exxon #22816	2300 Jefferson Davis Highway	Arlington	VA UST	3010013	Owner ID: 40064. CEDS Facility ID: 200000078618. Two 8,000-gal, one 10,000-gal, one 12,000-gal Gas USTs in use.
	Z170				RCRA-SQG	VAD988196002	No violations found.
	Z171				VA LUST	98-3548	Facility ID: 3010013. Release Date: 09/03/1997. Closed Date: 10/22/1997.
	Z172				VA LTANKS	19983548	Reported: 03-Sep-1997. Case Closed.
E6	AJ193	Crystal Plaza 6	2221 Jefferson Davis Highway	Arlington	VA LUST	92-1219	Facility ID: 3022011. Release Date: 12/18/1991. Closed Date: 7/29/1993.
	AJ203		2221 S Clark Place		VA LTANKS	19921219	Reported: 18-Dec-1991. Case Closed.
	AJ204				VA UST	3022011	Owner ID: 38697. CEDS Facility ID: 200000079078. 17,000-gal H/O UST rem from grd.
E7	BQ334	Crystal Plaza Apartments North & South	2111 Jefferson Davis Highway	Arlington	VA UST	3021724	Owner ID: 34734. CEDS 200000079072. Two 12,000-gal H/O USTs perm out of use and one 15,000-gal H/O UST rem from grd.
E8	AW249	Hampton Suites Site	2000 Jefferson Davis Highway	Arlington	VA LUST	01-3153	Release Date: 12/27/2000. Closed Date: 2/6/2001.
	AW250				VA LTANKS	20013153	Reported: 27-Dec-2000. Case Closed.
E9	BB263	Plaza Associates	2001 Jefferson Davis Highway	Arlington	VA LUST	90-1252	Facility ID: 3022007. Release Date: 03/20/1990. Closed Date: 12/27/1990.
	BB264				VA LTANKS	19901252	Reported: 20-Mar-1990. Case Closed.
	BB265				VA UST	3022007	Owner ID: 34734. CEDS Facility ID: 200000079081. 15,000-gal H/O UST perm out of use. 15,000-gal H/O UST rem from grd.
E10	BB262	Crystal City Marriott	1999 Jefferson Davis Highway	Arlington	RCRA-SQG	VAD988222923	No violations found.

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
E11	BB277	Crystal Mall Office Bldgs C-01	1941 Jefferson Davis Highway	Arlington	RCRA-SQG	VAD982580425	No violations found.
E12	BB279	Strategic Systems Program	1931 Jefferson Davis Highway CM#3	Arlington	RCRA-SQG	VAD981737661	Conditionally Exempt Small Quantity Generator.
E13	BB284	Crystal Mall 1	1911 Jefferson Davis Highway	Arlington	VA AST	3030728	Owner ID: 40233. CEDS Facility ID: 200000079079. 2,500-gal Diesel AST curr in use.
Segment F - Arlington Pentagon							
F1	374	US Department of the Air Force	1755 Jefferson Davis Highway	Arlington	RCRA-SQG	VA2570000917	No violations found.
F2	AJ187	Crystal Square 5	1755 Jefferson Davis Highway	Arlington	VA SPILLS	98-3497	FAC 3-02-2006
	VA AST				3022006	Owner ID: 40250. CEDS Facility ID: 200000079074. 30,000-gal F/O AST current in use.	
	VA LTANKS				19983497	Reported: 27-Jun-1998. Case Closed.	
	VA LUST				98-3497	Facility ID: 3022006. H/O tank leak. Release Date: 06/27/1998. Closed Date: 5/24/1999.	
F3	BI290	Crystal Square 4	1745 Jefferson Davis Highway	Crystal City	VA SPILLS	2001-N-0257	On 10/11/2001, discovered #2 red dye diesel in a groundwater ejector pit. Est. 200 gallons in pit (a dewatering system for the garage). No UST on site. C. square 5 (next door) had vandalism release a few years ago (Prep 98-3497). Date Closed: 07/12/2002.
	BI291	1755 Jefferson Davis Highway	1755 Jefferson Davis Highway	Arlington	ERNS	98444008	Site ID: 98444008. Spill Date: 06/27/1998. 30,000-gal AST. Most of the material was collected into a tank vault which was pumped out. Storm drains were covered. Street was cleaned up. Vandals ran a garden hose into the fill port and overfilled the tank. 1755 Jeff Davis Hwy storm drain was cleaned out (est 200 gals of No. 2 Oil).

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
F4	BL313	Jefferson Davis Highway at Crystal Gateway Marriott Hotel	1700 Jefferson Davis Highway	Arlington	ERNS	99641342	Incident Date: 08/15/1999. EPA Report No: VA990382. Tractor trailer accident. 10 gal of fuel. Fire Marshal on scene using sorbent pads.
	BL321	Marriott Crystal Gateway Hotel			VA UST	3022013	Owner ID: 34734. CEDS Facility ID: 200000076669. One 20,000-gal H/O & one 1,000-gal Diesel UST in use.
	BL321				VA AST	3022013	Owner ID: 34734. CEDS Facility ID: 200000076669. ONE 1,000-gal Diesel AST in use.
	BL322				RCRA-SQG	VAD988222410	No violations found.
	BL322				VA LUST	99-3220	Facility ID: 3022013. Release Date: 01/05/1999. Tank Size: 20,000-gal H/O. Closed Date: 4/21/1999.
	BL322				VA LUST	01-3095	Facility ID: 3022013. Release Date: 11/01/2000. Closed Date: 5/14/2001.
	BL322				VA LTANKS	19993220	Reported: 05-Jan-1999. Case Closed.
	BL322				VA LTANKS	20013095	Reported: 01-Nov-2000. Case Closed
F5	339	WMATA - Crystal City Station	1750 S Clark Street	Arlington	RCRA-SQG	VAD988217345	No violations found.
F6	AJ199	Holiday Inn	1489 Jefferson Davis Highway	Arlington	VA SPILLS	98-NONE	Case Closed.
F7	BI297	Dept of Army and Air Force	1411 Jefferson Davis Highway	Arlington	MLTS	45-30601-01	License Date: 02/05/2003. License Expires: 01/31/2011.
F8	BI299	Crystal Gateway Two	1255 Jefferson Davis Highway	Arlington	VA AST	3034134	Owner ID: 40449. CEDS Facility ID: 200000079085. One 1,000-gal and One 2,000-gal Diesel ASTs in use.
F9	BI306	Crystal Gateway #1	1235 Jefferson Davis Highway	Arlington	ERNS	97406438	Report No: 406438. Report Date: 10/06/1997. Light colored oil being placed on driveway.
	AJ217	Crystal Gateway 1, 2 & 3			VA SPILLS	98-3024	Case Closed.
F10	BI300	Crystal Gateway Three	1215 Jefferson Davis Highway	Arlington	VA AST	3036082	Owner ID: 40449. CEDS Facility ID: 200000079086. Two 2,000-gal Diesel ASTs in use.
F11	CL407	US Department of Commerce Patent Office	1232 S Eads Street	Arlington	RCRA-SQG	VA3470090025	No violations found.
	CL407				CERC-NFRAP	1000110467	Not on the NPL. Completed: 10/07/2004.

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
F12	CL414	Columbia Center	1211 S Eads Street	Arlington	VA LUST	99-3072	Facility ID: 3900875. Diesel Release. Release Date: 08/26/1998. Closed Date: 10/27/1998.
	VA LTANKS				19993072	Case Closed.	
F13	CL418	1201 S Eads Street	1201 S Eads Street	Arlington	HMIRS	9900014255	Fuel Oil spill via unloading/loading; human error.
	CL419	Bennington Apartments			VA UST	3021982	Owner ID: 28781. CEDS Facility ID: 200000080116. 25,000-gal H/O UST perm out of use.
F14	CL423	Budget Rent-A-Car 5601	1200 S Eads Street	Arlington	VA UST	3005995	Owner ID: 27840. CEDS Facility ID: 200000193423. 10,000-gal Gas UST rem from grd.
	CL424				VA LUST	91-0124	Facility ID: 3005995. Release Date: 07/25/1990. Closed Date: 8/16/1994.
	CL425				RCRA-SQG	VAD988193975	Conditionally Exempt Small Quantity Generator.
	CL425				VA LTANKS	19910124	Reported: 25-Jul-1990. Case Closed.
	N/A	Current Vacant Property	SITE SURVEY	--	Completely vacant lot and former office building.		
F15	CQ428	1211 S Fern Street	1211 S Fern Street	Arlington	ERNS	91232734	Report No: 90336. Spill Date: 09/30/1991. A worker in the building was seen dumping a 55-gal drum into a sewer drain.
F16	CQ436	12th & S Fern Street	12th & S Fern Street	Arlington	ERNS	92283155	Site ID: 92283155. Report No: 133660. Spill Date: 08/26/1992. Dumping green material from lawn care truck into a field.
F17	CQ434	Pentagon Industrial Complex	1201 S Fern Street	Arlington	VA LUST	96-3200	Facility No. 3016722. Release Date: 06/11/1996. 3,000-gal H/O UST.
	CQ435				RCRA-SQG	VAR000001578	No violations found.
	N/A	Currently DHL Air Freight	SITE SURVEY	--	Air freight shipping and receiving facility.		
F18	459	MCI-Worldcom PCYTVA	601 S 12 th Street	Arlington	VA AST	3038642	Owner ID: 40710. CEDS Facility ID: 200000207816. One 2,000-gal AST & one 4,000-gal Diesel AST in use.
F19	CQ437	COSTCO Wholesale 233	1200 S Fern Street	Arlington	RCRA-SQG	VAR000012740	No violations found.
F20	CY467	Ritz Carlton Pentagon City	1250 S Hayes Street	Arlington	RCRA-SQG	VAD988222857	No violations found.

Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
F21	CY466	Pentagon City Station	1250 S Hayes Street	Arlington	RCRA-SQG	VAD982677205	No violations found.
F22	CY480	Former AT&T Building	1201 S Hayes Street	Arlington	VA LTANKS	19940834	Case Closed: 10-Nov-1993.
	CY481				VA LUST	94-0834	Facility No. 3009604. Case Reported: 10-Nov-1993. Case Closed 3/22/1994.
	CY482				VA UST	3009604	Two 10,000-gal H/O USTs.
	CY483	Lucent Technology Inc			RCRA-SQG	VAD980831846	No violations found.
	CY484	Chesapeake & Potomac Telephone Co			RCRA-SQG	VAD980691265	No violations found.
	CY485	AT&T			VA LUST	90-1099	Facility No. 3009604. Case Reported: 02/26/1990. Case Closed: 12/8/1993.
	CY486	Western Electric Co			VA LTANKS	19901099	Reported: 26-Feb-1990. Case Closed.
	CY487				RCRA-SQG	VAD003917440	No violations found.
	N/A	Current Retail Stores			SITE SURVEY	--	Retail facilities present include: Linens N Things, Marshall's, and Borders Books and Music.
F23	DF512	Sephora Store # 348 (Pentagon City)	1100 S Hayes Street	Arlington	RCRA-SQG	VAR000506212	No violations found.
F24	DF511	Fashion Center at Pentagon City Mall	1100 S Hayes Street	Arlington	VA LUST	97-3667	Facility ID: 3900063. Hyrdraulic Oil. Release Date: 10/18/1996. Closed Date: 7/13/1998.
F25	DJ539	Pentagon	425 Jefferson Davis Highway	Arlington	VA LTANKS	19954089	Reported: 17-Oct-1994. Case Closed.
	DJ542	US DOD Pentagon			SWF/LF	PBR197	Energy Recovery/Incineration Facility [SW]. Pentagon SW Incinerator.
	DJ542	US DOD Pentagon			VA SPILL	2004-N-1065	Date In: 06/22/2004. Date Closed: 06/22/2004. Hydraulic line broke on security system. Est 5 gallons of vegetable oil. Absorbed w/oil dry. Will keep oil dry & sand on to reduce slip hazard. Not washing into storm sewer.
	DJ542	US DOD Pentagon			VA LTANKS	19920521	Reported: 17-Sep-1991. Case Closed.
	DJ542	US DOD Pentagon			VA LTANKS	19921701	Reported: 25-Feb-1992. Case Closed.
	DJ544	US DOD Pentagon Sewage Pump Station			VA LTANKS	19901475	Facility ID: 3024656. Reported: 30-Apr-1990. Closed: 7/15/1994.

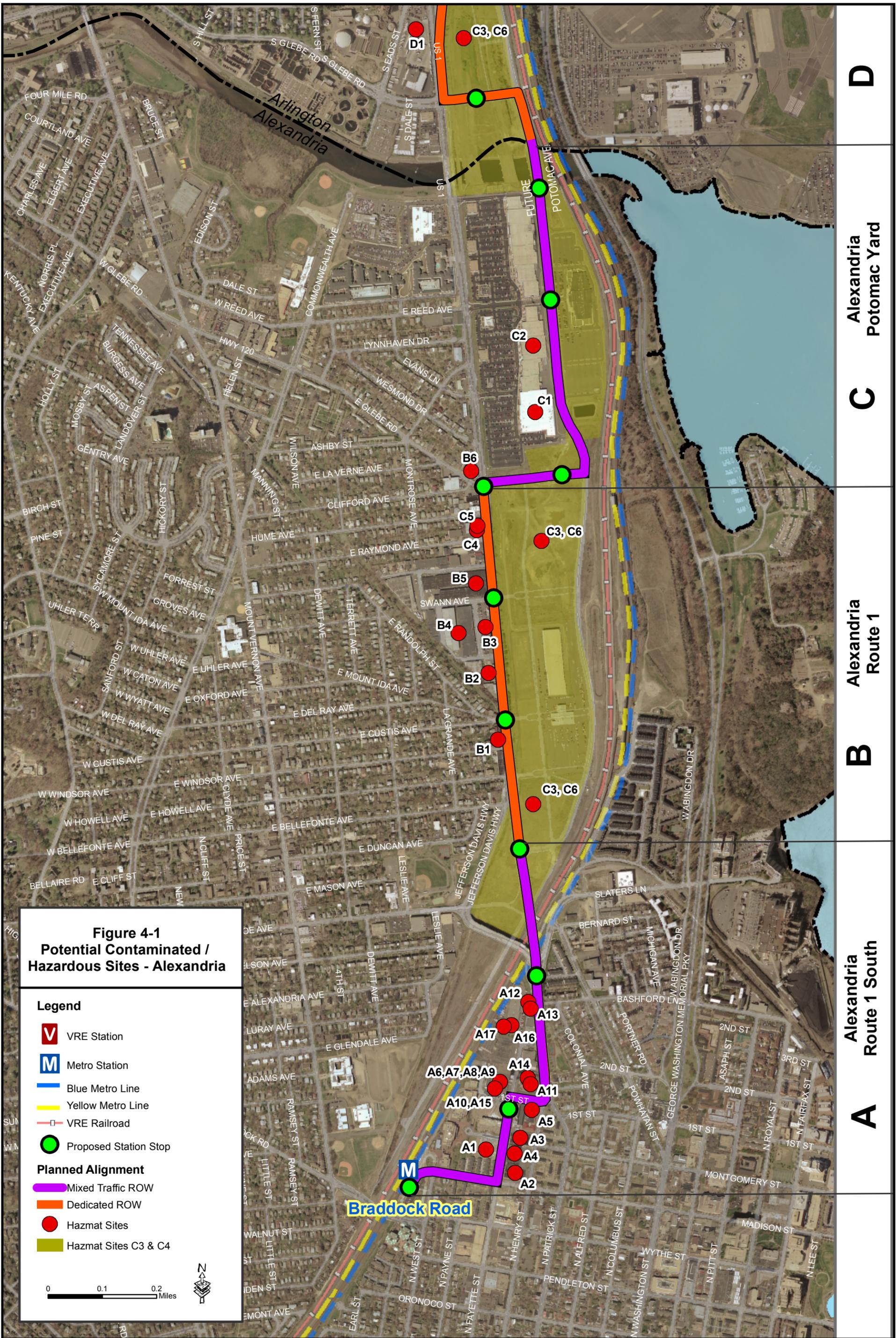
Table 4-2 (cont.): Phase 1 Environmental Site Assessment; Potential Contaminated / Hazardous Sites along the Planned Alignment

ESA ID No.	EDR No.	Site Name/Owner	Address/Location	City	Database(s)	Site/Case ID No.	Comments/Area of Concern(s)
F25	DJ545	Pentagon Courtyard			VA LTANKS	19944296	Reported: 14-Jun-1994. Case Closed.
	DJ546	DOD - Pentagon Reservation			VA UST	3003004	Owner ID: 29838. CEDS 200000096532. Three 6,000-gal Gas USTs, one 500-gal, 5,000-gal, 7,000-gal Diesel USTs, one 2,000-gal, 5,000-gal, and a 15,000-gal Kerosene UST curr in use.
	DJ546	DOD - Pentagon Reservation			VA AST	3003004	Owner ID: 33227. CEDS 200000096532. Five 1,000-gal, three 20,000-gal, one 30,000-gal and one 300,000-gal H/O ASTs in use. Three 2,000-gal and one 4,000-gal Kerosene ASTs in use. One 1,000-gal Fuel Oil AST and one 1,000-gal Used Oil AST in use.
	ORPHAN	Pentagon Motor Pool Gas Station			VA LUST	92-0521	Facility ID: 3003004. Release Date: 09/17/1997. Closed Date: 12/2/1997.
	DJ539	Pentagon Building			VA LUST	91-0464	Pollution Complaint #: 19910464. Facility ID: 3003004. Release Date: 09/27/1990. Closed Date: 10/26/1994.
	ORPHAN	Pentagon Heating Coal Yard			VA SPILLS	15197	Site ID: 8718622. Spill Date: 12/05/1987. 5-gal of H/O spilled from tanker truck.
	DJ539	Pentagon			RCRA-LQG	VA2210090021	There are 6 violation records reported at this site. Most recent violation 02/25/2004. Compliance: 07/01/2004.
	DJ541	Pentagon River Entrance			VA LUST	94-0808	Pollution Complaint # 19940808. Release Date: 11/09/1993. Closed Date: 2/17/1995.

NOTES / GLOSSARY:

Virginia Leaking Tank Database
 Resource Conservation Recovery Act - Small Quantity Generator
 Virginia Leaking Underground Storage Tank Database
 Virginia Voluntary Remediation Program
 Emergency Response Notification System
 Resource Conservation Recovery Act - Large Quantity Generator
 CERCLIS Sites Removed from Federal Database

VA AST: Virginia Above Ground Storage Tank Database
 VA UST: Virginia Underground Storage Tank Database
 HMIRS: Hazardous Materials Incident Report System
 MLTS: Material Licensing Tracking System
 SWF/LF: Solid Waste Facility/Landfill
 CERCLIS: Comprehensive Environmental Response, Compensation and Liability Information System



**Figure 4-1
Potential Contaminated /
Hazardous Sites - Alexandria**

Legend

- VRE Station
- Metro Station
- Blue Metro Line
- Yellow Metro Line
- VRE Railroad
- Proposed Station Stop

Planned Alignment

- Mixed Traffic ROW
- Dedicated ROW
- Hazmat Sites
- Hazmat Sites C3 & C4

0 0.1 0.2 Miles

D

Alexandria
Potomac Yard

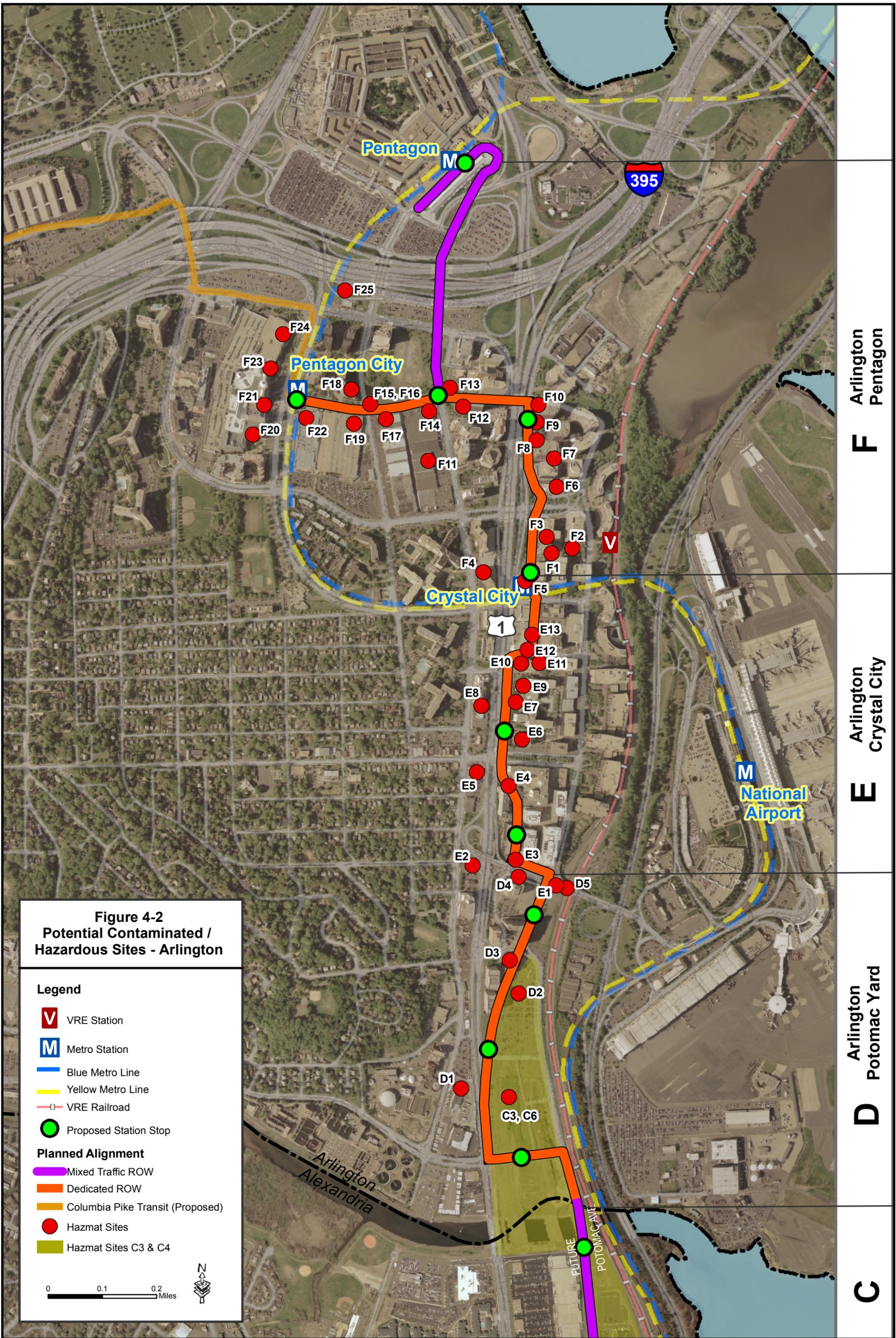
C

Alexandria
Route 1

B

Alexandria
Route 1 South

A



Arlington
Pentagon

Arlington
Crystal City

Arlington
Potomac Yard

**Figure 4-2
Potential Contaminated /
Hazardous Sites - Arlington**

Legend

- V VRE Station
- M Metro Station
- Blue Metro Line
- Yellow Metro Line
- VRE Railroad
- Proposed Station Stop
- Planned Alignment**
- Mixed Traffic ROW
- Dedicated ROW
- Columbia Pike Transit (Proposed)
- Hazmat Sites
- Hazmat Sites C3 & C4

0 0.1 0.2 Miles



5.0 CONCLUSIONS

By design, a bus rapid transit system or “busway” generally provides for less intrusive construction activities by utilizing the existing roadways and infrastructure. The primary impacts of these street-running systems are associated with the construction of new roadways such as proposed through the central portion of the former Potomac Yard and construction at the proposed station stops where new shelters, platforms, and/or other structures will be constructed.

The sites listed in Table 5-1 may contain contaminated/hazardous materials that may be impacted where avoidance is not possible or other constraints have precedence. Any proposed subsurface disturbance of the alignment (e.g., underground utilities) in these areas should be evaluated and monitored as part of a Phase II ESA during design and construction to further assess the potential for impacts from contaminated or hazardous materials.

Table 5-1: Sites/Facilities that May Require a Phase II Analysis

Facility Name/Segment	Address	City/County
Segment A - Alexandria South Route 1		
Tony's Auto Service	1112 First Street	Alexandria
Segment B - Alexandria Route 1		
Current Shell Station	3014 Jefferson Davis Highway	Alexandria
Segment C - Alexandria Potomac Yard		
Town of Slaters Village (Potomac Yard)	Potomac Yard	Alexandria
Potomac Yard Motor Shop	3014 Jefferson Davis Highway	Alexandria
RF&P Potomac Yard	2801 Jefferson Davis Highway	Alexandria
RF&P (Potomac Yard)	2900 Jefferson Davis Highway	Alexandria
RF&P Yard	400 Jefferson Davis Highway	Arlington
Railroad Yard between Old Town Alexandria and National Airport	Railroad Yard between Old Town Alexandria and National Airport	Arlington
Segment F - Arlington Pentagon		
US DOD Pentagon	425 Jefferson Davis Highway	Arlington
US DOD Pentagon Sewage Pump Station		
Pentagon Courtyard		
DOD - Pentagon Reservation		
Pentagon Motor Pool Gas Station		
Pentagon Building		
Pentagon Heating Coal Yard		
Pentagon River Entrance		

APPENDICES

APPENDIX A
EDR Regulatory Database Findings
(Provided upon Request)

APPENDIX B

Online Regulatory Database Summaries; VDEQ and USEPA

WMATA Crystal City - Potomac Yard Corridor Interim Transit Improvements Project

Virginia Department of Environmental Quality Permitted Solid Waste Management Facilities

Facility Name	Address/Location	City/Town	Permit #	Status	Type
US Department of Defense - Pentagon	425 Old Jefferson Davis Hwy	Arlington	IR2002-N-0605	Unpermitted	Energy Recovery/ Incineration Facility [SW]
US Department of Defense - Pentagon	425 Old Jefferson Davis Hwy	Arlington	PBR197	Active	Energy Recovery/ Incineration Facility [SW]

Information downloaded on May 31, 2006 from the VADEQ's Website at: <http://www.deq.virginia.gov/waste/s-waste.html>

WMATA Crystal City - Potomac Yard Corridor Interim Transit Improvements Project

Virginia Department of Environmental Quality
Registered Storage Tank Sizes and Quantities

Facility ID No.	Owner ID	Tank Number	Federally Regulated	Capacity	Contents	Tank Status	Tank Type
3000360	33142	CC1	Y	10000	DIESEL	REM FROM GRD	UST
3000360	35199	R2	Y	1000	DIESEL	REM FROM GRD	UST
3000360	35199	1	Y	5000	DIESEL	PERM OUT OF USE	UST
3000360	33142	CC2	Y	6000	DIESEL	REM FROM GRD	UST
3000360	33142	CC1	N	12000	DIESEL	CURR IN USE	AST
3001649	29299	1	Y	2000	GASOLINE	CLS IN GRD	UST
3001699	42133	4	Y	10000	DIESEL	CURR IN USE	UST
3001699	42133	2	Y	10000	GASOLINE	CURR IN USE	UST
3001699	29550	R4	Y	10270	GASOLINE	REM FROM GRD	UST
3001699	29550	R2	Y	10270	GASOLINE	REM FROM GRD	UST
3001699	29550	R1	Y	12307	GASOLINE	REM FROM GRD	UST
3001699	29550	R3	Y	10270	GASOLINE	REM FROM GRD	UST
3001699	42133	1	Y	12000	GASOLINE	CURR IN USE	UST
3001699	42133	3	Y	10000	GASOLINE	CURR IN USE	UST
3003004	29838	8	Y	6000	GASOLINE	CURR IN USE	UST
3003004	29838	7	Y	6000	GASOLINE	CURR IN USE	UST
3003004	29838	9	Y	6000	GASOLINE	CURR IN USE	UST
3003004	29838	4	Y	500	DIESEL	CURR IN USE	UST
3003004	29838	1	N	2000	KEROSENE	CURR IN USE	UST
3003004	29838	5	N	15000	KEROSENE	CURR IN USE	UST
3003004	29838	6	Y	5000	DIESEL	CURR IN USE	UST
3003004	29838	2	Y	7000	DIESEL	CURR IN USE	UST
3003004	29838	3	N	5000	KEROSENE	CURR IN USE	UST
3003004	33227	1	N	300000	HEATING OIL	CURR IN USE	AST
3003004	33227	27	N	1000	HEATING OIL	CURR IN USE	AST
3003004	33227	6	N	20000	HEATING OIL	CURR IN USE	AST
3003004	33227	3	N	1000	USED OIL	CURR IN USE	AST
3003004	33227	26	N	1000	FUEL OIL	CURR IN USE	AST
3003004	33227	21	N	2000	KEROSENE	CURR IN USE	AST
3003004	33227	20	N	4000	KEROSENE	CURR IN USE	AST
3003004	33227	7	N	20000	HEATING OIL	CURR IN USE	AST
3003004	33227	16	N	2000	KEROSENE	CURR IN USE	AST
3003004	33227	22	N	2000	KEROSENE	CURR IN USE	AST
3003004	33227	23	N	1000	HEATING OIL	CURR IN USE	AST
3003004	33227	24	N	1000	HEATING OIL	CURR IN USE	AST
3003004	33227	25	N	1000	HEATING OIL	CURR IN USE	AST
3003004	33227	31	N	12000	KEROSENE	CURR IN USE	AST
3003004	33227	30	N	1000	KEROSENE	CURR IN USE	AST
3003004	33227	29	N	4900	DIESEL	CURR IN USE	AST
3003004	33227	2	N	300000	HEATING OIL	CURR IN USE	AST
3003004	33227	5	N	20000	HEATING OIL	CURR IN USE	AST
3003004	33227	28	N	1000	HEATING OIL	CURR IN USE	AST
3005995	27840	1	Y	10000	GASOLINE	REM FROM GRD	UST
3006350	36331	1	Y	15000	DIESEL	PERM OUT OF USE	UST
3006554	33788	R1	Y	10000	GASOLINE	REM FROM GRD	UST
3006554	41621	4	Y	10000	GASOLINE	CURR IN USE	UST
3006554	33788	R2	Y	500	DIESEL	REM FROM GRD	UST
3006554	33788	R3	Y	10000	GASOLINE	REM FROM GRD	UST

WMATA Crystal City - Potomac Yard Corridor Interim Transit Improvements Project

**Virginia Department of Environmental Quality
Registered Storage Tank Sizes and Quantities**

Facility ID No.	Owner ID	Tank Number	Federally Regulated	Capacity	Contents	Tank Status	Tank Type
3021159	35720	4	Y	10000	GASOLINE	CURR IN USE	UST
3021159	35720	5	Y	10000	GASOLINE	CURR IN USE	UST
3021159	35720	6	Y	1000	MOTOR OIL	CURR IN USE	UST
3021159	35720	7	Y	1000	MOTOR OIL	CURR IN USE	UST
3021159	35720	8	Y	1000	USED OIL	CURR IN USE	UST
3021365	32370	1	Y	10000	GASOLINE	REM FROM GRD	UST
3021365	32370	2	Y	1000	USED OIL	REM FROM GRD	UST
3021724	34734	NORTH1	N	15000	HEATING OIL	REM FROM GRD	UST
3021724	34734	SOUTH1	N	12000	HEATING OIL	PERM OUT OF USE	UST
3021724	34734	NORTH2	N	12000	HEATING OIL	PERM OUT OF USE	UST
3021740	28781	R1	N	20000	HEATING OIL	REM FROM GRD	UST
3021740	28781	2	N	15000	HEATING OIL	PERM OUT OF USE	UST
3021982	28781	1	N	25000	HEATING OIL	PERM OUT OF USE	UST
3022006	40250	1	N	30000	FUEL OIL	CURR IN USE	AST
3022007	34734	2	N	15000	HEATING OIL	PERM OUT OF USE	UST
3022007	34734	1R	N	15000	HEATING OIL	REM FROM GRD	UST
3022013	34734	2	N	20000	HEATING OIL	CURR IN USE	UST
3022013	34734	1	Y	1000	DIESEL	CURR IN USE	UST
3022013	40261	1	N	1000	DIESEL	CURR IN USE	AST
3022233	28024	1	N	2000	HEATING OIL	PERM OUT OF USE	UST
3023665	28386	1R	Y	4000	GASOLINE	REM FROM GRD	UST
3024616	32963	1	Y	NULL	UNKNOWN	PERM OUT OF USE	UST
3025574	28228	G1	Y	250	UNKNOWN	CLS IN GRD	UST
3025652	32048	1	Y	12000	UNKNOWN	REM FROM GRD	UST
3025652	32048	3	Y	12000	MIXTURE	CLS IN GRD	UST
3025652	32048	2	Y	12000	DIESEL	CLS IN GRD	UST
3026056	40064	3	Y	10000	DIESEL	CURR IN USE	UST
3026056	40064	2	Y	15000	GASOLINE	CURR IN USE	UST
3026056	40064	1	Y	15000	GASOLINE	CURR IN USE	UST
3026056	33970	R1	Y	8000	GASOLINE	REM FROM GRD	UST
3026834	34616	1	Y	NULL	UNKNOWN	PERM OUT OF USE	UST
3030728	40233	1	N	2500	DIESEL	CURR IN USE	AST
3034134	40449	2	N	1000	DIESEL	CURR IN USE	AST
3034134	40449	1	N	2000	DIESEL	CURR IN USE	AST
3036082	40449	1	N	2000	DIESEL	CURR IN USE	AST
3036082	40449	2	N	2000	DIESEL	CURR IN USE	AST
3038642	40710	1	N	2000	DIESEL	CURR IN USE	AST
3038642	37913	PCYTVA	N	4000	DIESEL	CURR IN USE	AST

Information as reviewed on May 31, 2006 from the VADEQ's Website at: <http://www.deq.virginia.gov/tanks/dwnllib.html#petdbf>

This Information can be cross-referenced with the table detailing tank registrations and descriptions.

WMATA Crystal City - Potomac Yard Corridor Interim Transit Improvements Project

Virginia Department of Environmental Quality
Registered Storage Tank Sizes and Quantities

Facility ID No.	Owner ID	Tank Number	Federally Regulated	Capacity	Contents	Tank Status	Tank Type
3006755	36573	1	Y	12000	GASOLINE	CURR IN USE	UST
3007668	28304	2	N	NULL	UNKNOWN	PERM OUT OF USE	UST
3007668	28304	1	N	NULL	UNKNOWN	PERM OUT OF USE	UST
3009552	40117	1	N	20000	HEATING OIL	CURR IN USE	AST
3009958	36553	R4	Y	1000	USED OIL	REM FROM GRD	UST
3009958	36553	R1	Y	8000	GASOLINE	REM FROM GRD	UST
3009958	36553	R2	Y	10000	GASOLINE	REM FROM GRD	UST
3009958	36553	R3	Y	10000	GASOLINE	REM FROM GRD	UST
3010013	40064	3	Y	8000	GASOLINE	CURR IN USE	UST
3010013	40064	4	Y	10000	GASOLINE	CURR IN USE	UST
3010013	40064	1	Y	8000	GASOLINE	CURR IN USE	UST
3011018	28304	R1	Y	NULL	GASOLINE	PERM OUT OF USE	UST
3011018	28304	R2	Y	NULL	GASOLINE	PERM OUT OF USE	UST
3011388	34734	2	Y	3000	GASOLINE	REM FROM GRD	UST
3011388	34734	1	Y	1000	DIESEL	REM FROM GRD	UST
3011839	35241	1	N	NULL	HEATING OIL	CLS IN GRD	UST
3012524	28228	3	Y	4600	GASOLINE	PERM OUT OF USE	UST
3012524	28228	R8	Y	20000	UNKNOWN	REM FROM GRD	UST
3012524	28228	R6	Y	1000	GASOLINE	REM FROM GRD	UST
3012524	28228	R5	Y	1000	USED OIL	REM FROM GRD	UST
3012524	28228	R7	Y	20000	DIESEL	REM FROM GRD	UST
3012524	28228	4	Y	1650	USED OIL	PERM OUT OF USE	UST
3012524	28228	1	N	1600	KEROSENE	PERM OUT OF USE	UST
3012524	28228	2	Y	4600	GASOLINE	PERM OUT OF USE	UST
3012555	36852	1	Y	3000	GASOLINE	REM FROM GRD	UST
3012556	36852	1	Y	2000	GASOLINE	PERM OUT OF USE	UST
3012556	40666	1	N	2000	GASOLINE	CURR IN USE	AST
3012557	32483	R1	Y	10000	GASOLINE	REM FROM GRD	UST
3012557	41806	2	Y	10000	GASOLINE	CURR IN USE	UST
3012557	32483	R2	Y	1000	DIESEL	REM FROM GRD	UST
3012557	32483	RA1	Y	4000	DIESEL	REM FROM GRD	UST
3012557	32483	R3	Y	1500	DIESEL	REM FROM GRD	UST
3012558	36852	2	Y	5000	GASOLINE	PERM OUT OF USE	UST
3012558	36852	1	Y	5000	GASOLINE	PERM OUT OF USE	UST
3012559	32048	R1	Y	2000	DIESEL	REM FROM GRD	UST
3012560	35264	R3	Y	350	USED OIL	REM FROM GRD	UST
3012560	35264	R1	Y	1000	GASOLINE	REM FROM GRD	UST
3012560	35264	R2	Y	400	OTHER	REM FROM GRD	UST
3018196	36850	1	Y	500	GASOLINE	CLS IN GRD	UST
3018326	41507	2	Y	2000	GASOLINE	PERM OUT OF USE	UST
3018326	34182	4	Y	10000	DIESEL	CLS IN GRD	UST
3018326	34182	5	Y	2500	DIESEL	CLS IN GRD	UST
3018326	41507	1	Y	10000	GASOLINE	PERM OUT OF USE	UST
3018326	34182	3	Y	10000	DIESEL	CLS IN GRD	UST
3020729	30452	1	Y	NULL	GASOLINE	CLS IN GRD	UST
3021159	35720	3	Y	10000	GASOLINE	CURR IN USE	UST
3021159	35720	1	Y	10000	DIESEL	CURR IN USE	UST
3021159	35720	2	Y	10000	GASOLINE	CURR IN USE	UST

WMATA Crystal City - Potomac Yard Interim Transit Improvements

**United States Environmental Protection Agency
Superfund Information Systems
Comprehensive Environmental Response, Compensation and Liability Information System
(CERCLIS) Online Database**

EPA ID	Site Name	Address/Location	City	County	NPL Status
VAN000305702	<u>OPERATION NOBLE EAGLE - PENTAGON</u>	PENTAGON AREA	ARLINGTON	ARLINGTON	Not NPL
VAD020312013	<u>RICHMOND, FREDRICKSBURG & POTOMAC RAILRD</u>	JEFFERSON DAVIS & HUME	ALEXANDRIA	ALEXANDRIA CITY	Not NPL

As researched on May 31, 2006 on the USEPA's Website at <http://www.epa.gov/superfund/sites/cursites/index.htm>

**WMATA Crystal City-
Potomac Yard Corridor Interim Transit Improvements Project**

**Virginia Department of Environmental Quality
Reported Releases**

Case Number	Site Name	Address	City	Zip	County	CEDS Facility Id	Release Reported	Case Status
19800491	RF & P (XREF 91-1668)	2801 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000075539	27-Jan-80	Closed
19820331	RF&P Potomac Yard Train Wreck	2801 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000075539	2-Nov-81	Closed
19891602	Washington Cold Storage Associates	1200 First St	Alexandria	22314	Alexandria City	200000090238	25-May-89	Closed
19901501	Gulf - Tonys Auto Service	1112 1st St	Alexandria	22314	Alexandria City	200000079511	2-May-90	Closed
19910953	Emory Air Freight	2800 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000078708	4-Jan-91	Closed
19911668	RF and P Potomac Yard - Central Operations Area	2801 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000075539	7-May-90	Closed
19911942	RF and P Train Derailment - KOH	2801 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000075539	23-Jun-91	Closed
19932151	Oakville Industrial Park	2604 Jefferson Davis Hwy Bldg 5	Alexandria	22301	Alexandria City	200000079895	15-Apr-93	Open
19954131	RF and P Potomac Yard	2801 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000075539	22-Nov-94	Closed
19983508	Town of Slaters Village	Potomac Yard	Alexandria	22314	Alexandria City	200000185954	10-Jul-97	Closed
19993295	Crowder Property	1219 First St	Alexandria	22314	Alexandria City	200000079122	11-Mar-99	Closed
19869985	Exxon 25644	355 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000078546	10-Jan-86	Closed
19890460	RFP Yard	400 Blk Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000185466	28-Oct-88	Closed
19900555	RFP Yard	400 Blk Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000185466	30-Jan-90	Closed
19900955	RF and P Scrapyard - Davis Industries	400 Blk Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000185466	30-Jan-90	Closed
19901252	Crystal Plaza 1	2001 Jefferson Davis Hwy	Arlington	22202	Arlington	200000079081	20-Mar-90	Closed
19901320	Alamo Rent A Car 230	2780 Jefferson Davis Hwy	Arlington	20001	Arlington	200000193418	4-Apr-90	Closed
19901475	Pentagon Sewage Pump Station	425 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000096532	30-Apr-90	Closed
19910038	Exxon 25644	355 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000078546	4-May-90	Closed
19910124	Budget Rent A Car	1200 S Eads St	Arlington	22202	Arlington	200000193423	25-Jul-90	Closed
19910464	Pentagon	425 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000096532	27-Sep-90	Closed
19911566	RF and P Facility	400 Blk Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000185466	24-Apr-91	Closed
19920213	Exxon 25644	355 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000078546	30-Jul-91	Closed
19920521	Pentagon - Motor Pool Gas Station	425 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000096532	17-Sep-91	Closed
19921701	Pentagon Heating and Refrigeration Plant	425 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000096532	25-Feb-92	Closed
19940808	Pentagon River Entrance	425 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000096532	9-Nov-93	Closed
19944296	Pentagon Courtyard	425 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000096532	14-Jun-94	Closed
19954089	Pentagon Building	425 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000096532	17-Oct-94	Closed
19983497	Crystal Square 5	1755 Jefferson Davis Hwy	Arlington	22202	Arlington	200000079074	27-Jun-98	Closed
19983548	Exxon 22816	2300 Jefferson Davis Hwy	Arlington	22202	Arlington	200000078618	3-Sep-97	Closed

**WMATA Crystal City-
Potomac Yard Corridor Interim Transit Improvements Project**

**Virginia Department of Environmental Quality
Reported Releases**

Case Number	Site Name	Address	City	Zip	County	CEDS Facility Id	Release Reported	Case Status
19993072	Columbia Center	1211 S Eads St	Arlington	22202	Arlington	200000186077	26-Aug-98	Closed
19993211	Value Rent A Car former	2400 Jefferson Davis Hwy	Arlington	22202	Arlington	200000096732	23-Dec-98	Closed
19993220	Crystal Gateway Marriott	1700 Jefferson Davis Hwy	Arlington	22202	Arlington	200000076669	5-Jan-99	Closed
19993399	Cardinal Concrete	450 Old Jefferson Davis Hwy	Arlington	22201	Arlington	200000087278	1-Jun-99	Closed
20013073	Hyatt Regency Crystal City	2799 Jefferson Davis Hwy	Arlington	22202	Arlington	200000197455	9-Oct-00	Closed
20013095	Crystal Gateway Marriott	1700 Jefferson Davis Hwy	Arlington	22202	Arlington	200000076669	1-Nov-00	Closed
19901202	VDOT - Crystal City Four Mile Run	2910 Jefferson Davis Hwy	Crystal City	22202	Arlington	200000198689	13-Mar-90	Closed
20013153	Hampton Suites Site	2000 Jefferson Davis Hwy	Crystal City	22202	Arlington	200000199492	27-Dec-00	Closed
20043064	Avis Rent A Car	2301 Jefferson Davis Hwy	Alexandria	22301	Fairfax	200000073770	7-Oct-03	Open

Information as reviewed on May 31, 2006 from the VADEQ's Website at: <http://www.deq.virginia.gov/tanks/dwnllib.html#petdbf>

WMATA Crystal City - Potomac Yard Corridor Interim Transit Improvements Project

**Virginia Department of Environmental Quality
Registered Storage Tanks**

Facility ID No.	Name	Address	City	Zip	County	CEDs Fac ID	Facility Type
3000360	Cardinal Concrete Company / Oldover (Solite)	450 Old Jefferson Davis Hwy	Arlington	22201	Arlington	200000087278	INDUSTRIAL
3001649	CROWDER TRANSFER & STORAGE	1219 First St	Alexandria	22314	Alexandria City	200000079122	TRUCKING/TRANSPORT
3003004	DOD - Pentagon Reservation	425 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000096532	FEDERAL: NON-MILITARY
3005995	Budget Rent-A-Car 5601	1200 S Eads St	Arlington	22202	Arlington	200000193423	COMMERCIAL
3006350	MARRIOTT TWIN BRIDGES HOTEL	333 Jefferson Davis Hwy	Arlington	22202	Arlington	200000076671	UNKNOWN
3006554	Thrifty Car Rental	2900 Jefferson Davis Hwy	Arlington	22201	Arlington	200000193419	COMMERCIAL
3006755	Avis Rent A Car System Inc	2301 Jefferson Davis Hwy	Alexandria	22301	Fairfax	200000073770	COMMERCIAL
3007668	MOBIL S/S 16HQL	Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000076341	GAS STATION
3009552	HYATT REGENCY CRYSTAL CITY	2799 Jefferson Davis Hwy	Arlington	22202	Arlington	200000077456	COMMERCIAL
3009958	EXXON S/S #2-5644	355 Old Jefferson Davis Hwy	Arlington	22202	Arlington	200000078546	GAS STATION
3010013	Exxon #22816	2300 Jefferson Davis Hwy	Arlington	22202	Arlington	200000078618	GAS STATION
3011018	MOBIL OIL CORPORATION	3014 Jefferson Davis Hwy	Alexandria	22305	Alexandria City	200000076286	GAS STATION
3012524	POTOMAC YARD	2801 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000075539	RAILROAD
3012555	VALUE-RENT-A-CAR	2400 Jefferson Davis Hwy	Arlington	22202	Arlington	200000096732	COMMERCIAL
3012556	Larry Steinhauer	2600 Jefferson Davis Hwy	Arlington	22202	Arlington	200000079214	COMMERCIAL
3012557	Alamo Rent A Car	2780 Jefferson Davis Hwy	Arlington	20001	Arlington	200000193418	OTHER
3012558	KENNING CAR RENTAL	2804 Jefferson Davis Hwy	Arlington	22202	Arlington	200000077175	COMMERCIAL
3012560	HEISHMAN BMW	3154 Jefferson Davis Hwy	Arlington	22202	Arlington	200000077663	AUTO DEALER
3018196	POTOMAC OXYGEN CO	2200 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000075551	COMMERCIAL
3018326	Jeff Davis Associates / Budget Rent A Car	2800 Crystal Dr	Arlington	22209	Arlington	200000077303	UNKNOWN
3021724	CRYSTAL PLAZA APARTMENTS NORTH & SOUTH	2111 Jefferson Davis Hwy	Arlington	22202	Arlington	200000079072	RESIDENTIAL
3021740	CRYSTAL HOUSE I	1900 S Eads St	Arlington	22202	Arlington	200000079089	RESIDENTIAL
3021982	BENNINGTON APARTMENTS	1201 S Eads St	Arlington	22202	Arlington	200000080116	RESIDENTIAL
3022006	CRYSTAL SQUARE 5	1755 Jefferson Davis Hwy	Arlington	22202	Arlington	200000079074	COMMERCIAL
3022007	CRYSTAL PLAZA I	2001 Jefferson Davis Hwy	Arlington	22202	Arlington	200000079081	COMMERCIAL
3022013	MARRIOTT CRYSTAL GATEWAY HOTEL	1700 Jefferson Davis Hwy	Arlington	22202	Arlington	200000076669	COMMERCIAL
3022233	CRYSTAL GATEWAY NORTH	1111 Jefferson Davis Hwy	Arlington	22202	Arlington	200000079088	COMMERCIAL

WMATA Crystal City - Potomac Yard Corridor Interim Transit Improvements Project

**Virginia Department of Environmental Quality
Registered Storage Tanks**

Facility ID No.	Name	Address	City	Zip	County	CEDs Fac ID	Facility Type
3023665	TONYS CHEVRON SERVICE	1112 1st St	Alexandria	22314	Alexandria City	200000079511	GAS STATION
3025574	RF&P FACILITY	1100 N Fayette St	Alexandria	22314	Alexandria City	200000075128	COMMERCIAL
3025652	Oakville Industrial Park - Bldg 5 Tank 1,2,3	2604 Jefferson Davis Hwy Bldg 5	Alexandria	22301	Alexandria City	200000079895	UNKNOWN
3026056	Exxon #20388	2340 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000193471	GAS STATION
3026834	EMERY FRIEGHT	2800 Jefferson Davis Hwy	Alexandria	22301	Alexandria City	200000078708	COMMERCIAL
3030728	Crystal Mall 1	1911 Jefferson Davis Hwy	Arlington	NULL	Arlington	200000079079	COMMERCIAL
3034134	CRYSTAL GATEWAY TWO	1255 Jefferson Davis Hwy	Arlington	22202	Arlington	200000079085	COMMERCIAL
3036082	CRYSTAL GATEWAY THREE	1215 Jefferson Davis Hwy	Arlington	22202	Arlington	200000079086	COMMERCIAL
3038642	MCI-WorldCom PCYTVA	601 S 12th St	Arlington	22202	Arlington	200000207816	COMMERCIAL

Information as reviewed on May 31, 2006 from the VADEQ's Website at: <http://www.deq.virginia.gov/tanks/dwnllib.html#petdbf>

This Information can be crossed-referenced with the table detailing tank sizes, quantities and descriptions.

WMATA Crystal City - Potomac Yard Corridor Interim Transit Improvements Project

Virginia Department of Environmental Quality Volunteer Remediation Cleanup Program Sites

VCP No.	Site Name	Site Address	City	Site Type	Acres	Completed	Owner	Land Use Controls	Latitude	Longitude
Completed VCP										
VRP00152	SEI Arlington Acquisition Corp. Site	399 Old Jefferson Davis Hwy.	Arlington	Other	1	7/31/1997	SEI Arlington Acquisition Corp.	None	38.87	77.05
Planned VCP										
VRP00356	Oakville Industrial Park	2500 to 2600 Jefferson Davis Hwy	Alexandria	Industry	12	N/A	Cabot Industrial Properties Holding, Inc	N/A	N/A	N/A
VRP00334	Crescent Potomac Properties	Old Jefferson Davis Highway (Arlington North Parcel 15 Potomac Yard)	Arlington	Industry	18	N/A	Arlington County	N/A	N/A	N/A

Information dowloaded on May 31, 2006 from the VADEQ's Website at: <http://www.deq.virginia.gov/vrp/pubrecord.html>

Appendix C
Hazardous Materials Remediation Documentation for Potomac Yard

DRAFT

**HUMAN HEALTH AND ECOLOGICAL
RISK ASSESSMENT
POTOMAC YARD
ALEXANDRIA/ARLINGTON, VIRGINIA**

Prepared for:

**RF&P Railroad Company
600 East Main Street
Richmond, Virginia**

Prepared by:

**WEINBERG CONSULTING GROUP Inc.
1220 Nineteenth St., NW
Washington, D.C.**

June 7, 1995

EXECUTIVE SUMMARY

The Human Health and Ecological Risk Assessment was carried out to evaluate the risks to human health and the environment associated with potential exposures to chemicals in environmental media at the Potomac Yard Site in the City of Alexandria and in Arlington County, Virginia. The Risk Assessment is based on the findings of the Extent of Contamination Study (ECS) conducted by the Richmond, Fredricksburg & Potomac Railroad Company (RF&P). A report of the findings of the ECS was submitted to the U.S. Environmental Protection Agency (EPA) Region III on February 22, 1995.

The Risk Assessment was prepared to fulfill requirements set forth in Section 8.3.c.iii of the Administrative Order by Consent (Consent Order) between RF&P and the EPA (Docket No. III-92-61-DC). In accordance with Section 8.3.c.iii of the Consent Order, this Risk Assessment addresses potential risks to both human health and the environment. It was conducted in accordance with relevant federal and Region III guidance developed by EPA.

The Potomac Yard Site is a recently decommissioned, inactive rail yard consisting of approximately 342 acres extending from Crystal City in Arlington County, south to Braddock Road in the City of Alexandria. RF&P plans to develop the site to include a regional transportation hub, mixed housing, and commercial development. These plans are in accordance with existing zoning and development master plans in place in the City of Alexandria and Arlington County.

The Human Health Risk Assessment followed the form specified in EPA's Risk Assessment Guidance for Superfund and in applicable Region III guidance documents. The primary objective of the Human Health Risk Assessment was to evaluate potential risks associated with exposure to chemicals at the Potomac Yard Site or released from the Site as a result of anticipated development activities. Chemicals of potential concern (COPC) were selected for each of six Site areas that are distinctive because of past rail yard activities and anticipated development plans. These areas include North Tail, North Yard, Central Operations, South Yard/South Tail, Slaters Lane, and Potomac Greens.

An analysis of potential exposure pathways was conducted for each of the six main Site areas under current, interim, and future land-use scenarios. The most important receptors were found to be current trespassers and construction workers, on-site and off-site residents, utility workers, and commercial workers for interim and future land-use pathways. Inhalation of chemicals present in on-site soil and incidental ingestion of soil were found to be the most important routes of exposure for quantitative evaluation.

The salient conclusions of the Human Health Risk Assessment are summarized as follows:

- All of the lifetime upperbound excess cancer risks were within or below EPA's risk range for risk management at Superfund sites. The hazard indices for noncancer health effects were predominantly below EPA's guideline of 1. In only one instance, the hazard index for high-end occupational inhalation exposure to petroleum hydrocarbons was slightly exceeded. However, all of the estimated air concentrations associated with the exposure were far below occupational standards and criteria. Where the cumulative cancer risk to individuals based on reasonable maximum exposure for both current and future land use is less than 10^{-4} , and the non-cancer hazard index is less than 1, EPA has determined that action generally is not warranted for protection of human health.
- Under current land use conditions, potential exposures were associated with incidental ingestion of soil by a trespasser in the South Yard/South Tail area. During interim use, the highest potential exposures were to construction workers from the inhalation of development-related dust. Under future use conditions, the highest exposures were also industrial in nature, and they were associated with inhalation of dust by a construction worker and inhalation of petroleum hydrocarbons by a utility trench worker in a localized site area where diesel free product is being recovered. As mentioned above, no occupational standards and criteria were exceeded in any scenario.
- Due to the fact that the majority of the yard will be paved and/or landscaped, there is little potential for exposure and, thus, a low risk to residents who could occupy the site in the future.
- The primary chemicals associated with the human health risks were arsenic, associated with cinder-based ballast, and dibenz(a,h)anthracene. Dibenz(a,h)anthracene and other polycyclic aromatic hydrocarbons (PAHs) occur naturally in the environment, are emitted by numerous anthropogenic sources, and may have been associated with past activities at Potomac Yard. However, dibenz(a,h)anthracene was detected only sporadically at the Site, sometimes at anomalously high concentrations in comparison with other detected PAHs.

The Ecological Risk Assessment used a screening-level assessment approach recommended by EPA Region III. Under this approach, estimated exposure concentrations were compared to screening-level toxicity values, such as ambient water quality criteria. Estimated exposures that exceeded the screening toxicity values indicate potential risk.

The objective of the Ecological Risk Assessment was to determine if chemicals associated with the Site have the *potential* to affect the structure, function, or interactions of biological

populations and communities within the study area. The overall focus of the Ecological Risk Assessment was on potential site-related impacts on the aquatic populations and communities of Four Mile Run and the Potomac River. These two water bodies are the principal aquatic habitats of the area and, with the exception of small pockets of terrestrial habitat on Potomac Greens, will be the only source of natural habitat to remain once the Site is developed as a commercial and residential urban area. Potential risks associated with other areas of the Site that currently provide limited or marginal habitat also were evaluated, however, even though these habitats will not exist following development.

The conclusions of the screening-level Ecological Risk Assessment are as follows:

- The Site poses no risk to terrestrial wildlife feeding or otherwise using the Site.
- Pesticides in surface waters and sediments of Potomac Greens could cause a localized reduction in the abundance and diversity of aquatic insects. However, the probable low bioavailability of pesticides in these surface waters suggests a low overall risk for this receptor group. This risk will not exist following site development.
- Potomac Yards is a source of low concentrations of PAHs, metals, and pesticides to Four Mile Run and the Potomac River. This source will not exist following site development.
- Measured concentrations at the property boundary exceed toxicity criteria for sensitive species of aquatic life, possibly resulting in localized decreases in benthic species abundance and diversity.
- Given the volume of release from the Potomac Yard Site relative to other chemical inputs from the watershed, it is considered likely that releases from the 342 acre Site would have negligible impact on the chemical loading to Four Mile Run and the Potomac River.
- The potential impacts associated with these past releases cannot be determined using the available data, and would be virtually impossible to trace in Four Mile Run or the Potomac River, given the high contaminant burden from other sources that exists throughout the watershed.

Overall from both the human health and ecological perspectives, the risk assessment indicated no barrier to development of the site and, indeed, suggested that development will be beneficial in reducing risks both to human health and the natural environment.

2.0 SITE BACKGROUND

The Potomac Yard Site is located along the 2800 and 2900 blocks of Jefferson Davis Highway (U.S. Route 1) in the City of Alexandria and in Arlington County, Virginia. It is shown on the United States Geologic Survey (USGS) Alexandria, VA-DC-MD 7.5 minute series topographic map at 38 degrees, 50 minutes north latitude and 77 degrees, 3 minutes west longitude (Figure 2-1 of the ECS Report). The physical and ecological setting of the Potomac Yard Site is described in Section 2.0 of the ECS Report (1995). This section of the risk assessment report summarizes Site description information of primary importance to preparation of the risk assessment. It also discusses historical, current, and planned future land uses for the site.

2.1 Site Description

Potomac Yard is located in the southeastern portion of Arlington County, Virginia, and the northeastern portion of the City of Alexandria, Virginia, across the Potomac River from Washington, D.C. It is a long, relatively narrow area of approximately 342 acres extending from Crystal City in Arlington County, south to Braddock Road in the City of Alexandria (Plate 2-1 of the ECS Report). The Site is bounded on the west by Jefferson Davis Highway (U.S. Route 1) and on the east by the George Washington Memorial Parkway, both major commuter routes serving Washington, D.C. and Virginia. Potomac Yard is approximately 2.7 miles long and has a maximum width of approximately 2,000 feet near the center of the Site.

Historically, Potomac Yard has been described and characterized according to seven major subareas within the site. These areas primarily reflect past activities and operations carried out in these locations. All but two buildings and work areas formerly located within the rail yard have been removed as part of downsizing operations, the main railroad office building in the Central Operations Area, and a Metrorail substation. The Potomac Yard subareas have been discussed in detail in the ECS Report and are described briefly below. Their locations are delineated in Plate 2-1 of the ECS Report.

- **Central Operations Area.** The majority of the Potomac Yard buildings were located in this area. In addition, most refueling and maintenance operations took place in the Central Operations Area.
- **North Yard.** A number of storage, maintenance, and general rail yard activities buildings were located in this area. Rail car service, maintenance, and repair were carried out in this portion of the site. In addition, an electrical switching substation was formerly located in this area.
- **North Yard Tail.** This portion of the site contained primarily railroad switching tracks, which narrowed to the north and merged into five main rail lines near the northern terminus of the Site. A lube oil tank, switch air compressor building, and aboveground fuel storage tanks also were present in this area.

- **South Yard.** This area reportedly was used for southbound classification and northbound receiving. A car oil tank was located in this area.
- **South Yard Tail.** This area consisted mainly of railroad switching tracks, which narrowed to the south and merged into four main rail lines near the southern terminus of the Site. A switch air compressor building also was located in this portion of the site.
- **Intermodal (Piggyback)/Slaters Lane Area.** Activities associated with intermodal (piggyback) transport activities were located in this area of the Site. Intermodal transport involves the movement of loaded truck trailers on railroad flatcars or cars of special design. This area is adjacent to Slaters Lane and is referred to as the Slaters Lane Area in this risk assessment. At one time, an engine house associated with the Washington & Old Dominion Railroad was located in this area. Activities carried out in association with this building could not be completely documented. However, typical activities expected to have been carried out include engine repair, maintenance, and storage. In addition, it is known that from 1969 the engine house was used for office space and for servicing and repair of trailers and tractors associated with the piggyback activities in this area.
- **Potomac Greens.** This area of the Site was not used for rail operations. However, three former retention (oil/water separator) ponds, a deposition area for fly ash from a nearby power plant, and a Corps of Engineers dredge spoils deposition area are located in this portion of the Site.

Climate

The climate in the Washington, D.C. metropolitan area is continental, humid, and temperate with warm summers, mild winters, and moderate annual precipitation. Details regarding the climate in the Washington, D.C. area are presented in Section 2.3.1 of the ECS Report.

Surface Water and Site Drainage

The major surface water bodies in the vicinity of Potomac Yard are the Potomac River and Four Mile Run. Regional drainage is generally from west to east toward the Potomac River. Drainage patterns in the vicinity of the Site are controlled principally by topographic relief and urbanization. In the low-lying areas near the site, natural drainage patterns are not well developed due to low relief, extensive placement of fill, and urbanization. In the urban areas, stormwater is managed primarily in subsurface pipes. Natural drainage patterns are heavily branched and fairly well developed in the upland areas west of the Site due to rolling topography.

Drainage from higher areas around the Site generally flows to either Four Mile Run, which in turn discharges to the Potomac River, or directly to the Potomac River. The Potomac River flows south and ultimately discharges to the Chesapeake Bay.

Four Mile Run passes through the northern portion of Potomac Yard. The drainage area of Four Mile Run is approximately 17 square miles. This area is highly urbanized and includes portions of four municipalities (the City of Alexandria, Arlington County, Fairfax County, and Falls Church) with a total population of more than 150,000 people (Northern Virginia Planning District Commission, undated). Four Mile Run receives inflow from subsurface storm sewers, tributaries, ditches, and several discharges permitted under the Clean Water Act (see Table 2-3 in the ECS Report). In 1981 and 1982, the Virginia Institute of Marine Science (VIMS) found that the Arlington County Water Pollution Control Plant (WPCP) upstream from the Site discharged an average of 45 cubic feet per second (cfs) to Four Mile Run (Cerco 1985).

Surface water drainage adjacent to and upgradient of the Site discharges to either Four Mile Run or to storm sewers that run beneath Potomac Yard and discharge to the Potomac River. The Site ground surface generally slopes from the west to the east toward the Potomac River. However, topography over most of the site has been graded to a slight slope of approximately 1 percent to accommodate the railroad tracks. Surface water from the Site flows into either Four Mile Run or the Potomac River via a system of ditches and pipes.

The Potomac River in the vicinity of the Site is tidal. The tidal zone extends to the Fall Line at Chain Bridge, which is approximately 9 miles upstream from the mouth of Four Mile Run at National Airport. The tidal range of the Potomac River at Potomac Yard is approximately 3 feet (NOAA-National Ocean Services 1993). The mean discharge of the Potomac River is 11,510 cubic feet per second (cfs) at Chain Bridge (USGS 1987). Four Mile Run also is tidal in the vicinity of Potomac Yard. The tidal zone extends to the Mount Vernon/Arlington Ridge Road Bridge, which is approximately 1.5 miles upstream from Four Mile Run's confluence with the Potomac River, and .75 mile upstream from Potomac Yard. During the summers of 1981 and 1982, the Virginia Institute of Marine Science (VIMS) measured the mean tidal range of Four Mile Run at approximately 3 feet (Cerco 1985). VIMS calculated the mean annual flow of Four Mile Run to be approximately 14 cfs. The VIMS report does not identify the location of these measurements; however, the data suggest the location was upstream of the Arlington County Water Pollution Control Plant (WPCP) because the WPCP discharge alone ranges from approximately 40 to 54 cfs. Local surface water bodies and Site drainage are discussed in detail in Section 2.3.2 of the ECS Report.

As discussed in Section 6.6 (Migration of Detected Chemicals) of the ECS Report, organic and inorganic chemicals associated with previous activities at the Site could potentially migrate at relatively low concentrations to adjacent surface water, primarily through stormwater runoff. These chemicals, however, are generally characteristic of typical components of urban runoff in the vicinity of the Site and, in fact, would be mixed with stormwater discharge from surrounding offsite areas. Furthermore, the dilution potential in the two adjacent receiving waters, Four Mile

Run and the Potomac River, is tremendous. Discharge points from the Site to surface water are not readily accessible to potential human receptors and, as a result, regular exposures at these locations are not expected. Finally, any existing releases from the Site would be eliminated as part of development activities. For these reasons, exposures at offsite surface water locations to chemicals associated with the Site and any attendant human health risks are expected to be negligible and will not be considered further in the human health risk assessment.

Hydrogeology and Geology

Potomac Yard is located near the western edge of the Atlantic Coastal Plain physiographic province. The Fall Line, located less than 5 miles west of Potomac Yard, marks the boundary between the Atlantic Coastal Plain and Piedmont physiographic provinces. The Atlantic Coastal Plain is an eastward thickening wedge of clastic sedimentary deposits overlying the basement of igneous and metamorphic rocks. The Atlantic Coastal Plain sediments consist of clays, silts, sands, and gravels deposited in fluvial-deltaic (river/marine) environments (Johnston 1964; Meng and Harsh 1988).

Groundwater in the Atlantic Coastal Plain (and in the vicinity of Potomac Yard) occurs under confined (artesian) and unconfined (water table) conditions. The ECS groundwater studies were confined primarily to shallow groundwater at the Site. Regional geology and previous site-specific subsurface investigation show a dense confining layer that impedes the movement of groundwater and contaminants through the confining unit to the underlying confined aquifer. Furthermore, as discussed in the ECS Report, information concerning the vertical hydraulic gradient between the upper and lower aquifers indicates a potential migration of water from the lower aquifer to the upper aquifer if any leakage occurs.

Shallow groundwater occurs at Potomac Yard under unconfined water table and perched water table conditions at depths ranging from about 10 feet to 25 feet below ground surface. Groundwater in the confined aquifers and the unconfined unit in the vicinity of Potomac Yard flows eastward from recharge areas toward discharge areas. Recharge to the confined aquifers occurs where Cretaceous sand units crop out along the Fall Line, 5 miles west of the Site. Discharge from the confined aquifers occurs at either the Potomac River, where the channel breaches the confining unit(s), or at the Atlantic Ocean baseline. Recharge to the water table unit occurs primarily from the infiltration of precipitation and interaction with local surface water bodies. A small portion of the recharge to the water table unit may be through upward leakage from the underlying confined units.

Ground water at the Site south of Four Mile Run flows eastward toward the Potomac River and Four Mile Run. North of Four Mile Run (the North Yard Tail), groundwater close to four Mile Run flows south. Further north of Four Mile Run, the pumping of ground water from basements in the Crystal City development along the northern edge of the North Yard Tail, creates a hydraulic depression and a localized reversal of groundwater flow toward the north and west.

The discharge of ground water from the water table unit occurs at the Potomac River and Four Mile Run.

Free product in groundwater is present in the vicinity of the refueling area located within the Central Operations Area. Site characterization data reported in the ECS Report indicate that a trough exists between two areas of groundwater mounding in the Central Operations Area. The trough between the two areas of mounding provides a stagnant area in which free product collects and remains relatively immobilized. A free product recovery program is currently underway at the Site. In addition to the refueling area, two smaller areas of free product have been identified at Monitoring Well-25 and Monitoring Well-27 in the Central Operations Area. Recovery efforts are being undertaken at these locations.

Public water supplies in the vicinity of Potomac Yard are almost exclusively obtained from surface water sources (Johnston 1964; Herman 1995; and Hardy 1995). Groundwater from the deeper confined aquifers in the vicinity of the Site may be used for public water supply during emergency conditions (Hardy 1995). The nearest emergency public water supply wells in the vicinity of Potomac Yard are located 3,500 feet southwest of the Site, a location hydraulically upgradient from the Site. New groundwater wells for public water supplies are not expected to be installed at locations downgradient from the Site (i.e., between the Site and the Potomac River). Therefore, potential exposures to groundwater from the Site could only occur where the groundwater discharges to surface water.

The hydrogeological evidence leads to the conclusion that the groundwater under the site moves at a sufficiently slow rate that it is not likely to reach off-site receptors in a reasonable amount of time. A description of site hydrogeology and supporting calculations is presented in Section 2 (Site Description) and Appendix I of the ECS Report. The geometric mean groundwater velocity obtained from the ECS Report is 0.01 ft/day. If retardation, chemical and biological degradation, and dilution are all neglected, any chemicals present in groundwater will also move at a geometric mean rate of 0.01 ft/day. The minimum distance from the site boundary to a potential groundwater discharge point in the Potomac River is 200 ft and the maximum distance is over 1,000 ft. Based on these distances and mean flow rates, and assuming that the flow paths are straight lines, it will take between 55 and 270 years for the beginning of a chemical front to even reach a discharge point without dispersion or retardation. If conservative dispersion and retardation factors are considered, these travel times are likely to exceed thousands of years. In addition, the organic chemicals are likely to undergo chemical or biological degradation and the inorganics are likely to undergo geochemical precipitation and complexation reactions. Coupled with the dilution from infiltration along the travel path to the Potomac River in addition to dilution by the River itself, it may be readily seen that this pathway is inconsequential. Accordingly, potential exposures and human health risks associated with exposure to groundwater are expected to be negligible and will not be considered further in the human health risk assessment.

The ECS Report describes, in detail, the geology of Potomac Yard from soil surface to bedrock based on logged boreholes completed at the site. The stratigraphic sequence at Potomac Yard consists of six units. In descending order, these units include: ballast material, fill material, Shirley Formation, Patapsco Formation, Arundel Clay Formation, and Patuxent Formation. The more surficial strata at the Site are of greatest importance for evaluating potential exposures by direct contact to chemicals in soil at the site. These strata consist of gravel, cinder-based ballast, fill material, and native soil.

Two types of material are present in the surficial strata at the Potomac Yard Site. Most of the surface area of the rail yard is covered with a layer of gravel, a material used as rail bed ballast at the Site. Ballast is used in a railroad bed to support the ties, hold the track in line, and facilitate drainage. When the ECS investigation began in 1992, the gravel layer was up to 2 feet thick in parts of the rail yard. Since that time, much of the gravel has been removed or graded in areas no longer occupied by track. Currently, a layer of gravel approximately 6 inches thick remains over most of the Main Yard (the Main Yard does not include Potomac Greens, an area where rail yard activities did not take place). Locations not completely covered with a gravel layer include portions of the South Yard, the South Yard Tail, and the Central Operations Area.

Cinder-based ballast (also known as sub-ballast) lies beneath the gravel over most of the rail yard. Cinder-based ballast consists of cinders (bottom ash) from coal-powered steam locomotives used prior to the introduction of diesel-electric locomotives in the 1950s. Cinder-based ballast is found at depths of up to 8 feet, with an average thickness of 3 feet. A portion of the North Yard Tail, the section of the Site that lies north of Four Mile Run, was developed in the 1950s, after the steam locomotive era. Cinder-based ballast was not found in this area. Cinder-based ballast also promotes drainage of stormwater from the track area. Grain size analysis shows the majority of the cinder-based ballast to be greater than 0.05 mm in diameter (see Table 2-8, Table 2-9, and Appendix G of the ECS Report). Although variable amounts of fines may be present, this material corresponds to a coarse grained sand under the Unified Soil Classification system.

A combination of fill material and native soil (Shirley Formation) underlie the gravel and cinder-based ballast at the Site. A significant portion of surficial soil along the Potomac River in the vicinity of Potomac Yard has been disturbed as a result of urban development. The composition and variable distribution of sediments of the Shirley Formation native soil and much of the fill material are similar. Therefore, it is difficult to distinguish between these units in the augered borehole logs. The combination of the fill material and Shirley Formation native soil extend to a depth of approximately 40 feet at Potomac Yard.

Section 2.3.3 of the ECS Report reviews in detail the regional and Site specific hydrogeologic and geologic conditions.

2.2 Site History

A detailed history of operations at the Potomac Yard Site is presented in Section 3.0 of the ECS Report. The history of Potomac Yard was compiled by reviewing site maps and aerial photographs.

Railroad lines have traversed the Potomac Yard site for more than 100 years (from the mid 1800s) and development of the Site into a major rail yard began in the early 1900s. By 1937, the rail yard had expanded to approximately its maximum extent. Potomac Yard served several different railroad lines, and locomotive classification, switching, maintenance, servicing, and refueling (diesel-electric locomotives only) were carried out at the site. Coal-fired, steam powered locomotives were served from 1906 to the mid-1950s; electric locomotives were served from 1936 until 1980; and diesel-electric locomotives were served from the mid-1950s until 1990 at the Site. Maintenance and servicing operations also were carried out for other types of rail cars at the site.

In 1989, a decommissioning process began at the site and continued through 1993. During this period, buildings, tracks, and three stormwater retention ponds at Potomac Greens were removed. Currently, railroad activities at Potomac Yard are principally limited to mainline railroad traffic along the western and eastern portions of the Site.

From the early 1900s, a variety of industrial and commercial operations, as well as residential areas, have surrounded the Site. The course of Four Mile Run has been altered during the last century by placement of fill and various channelization efforts. In 1980, the U.S. Army Corps of Engineers completed a major rechanneling project in Four Mile Run to provide erosion and flood control. Four Mile Run was dredged and straightened, flood walls were erected, and the banks were armored with gabion mats (an erosion control device consisting of heavy steel mesh holding rock or stone in place). The channelized portion of Four Mile Run extends from its mouth to the East Glebe Road Bridge, approximately 3 miles upstream.

2.3 Current Land Use

Potomac Yard is centrally located in a development corridor extending from the Pentagon on the north to Interstate 95 on the south, and is one of the largest developable tracts of land in the urban core of Washington, D.C. Figure 2-1 of the ECS Report is the portion of the USGS 7.5 minute series map that includes Potomac Yard and surrounding areas. The Potomac Yard is bounded on the:

- North by Washington National Airport and the large scale hotels, shopping areas, and office buildings of Crystal City;
- East by Washington National Airport, the George Washington Memorial Parkway, the Potomac River, Daingerfield Island, the mid-rise Potowmack Crossing apartments, and

City of Alexandria residential neighborhoods and commercial areas;

- South by Braddock Road, the Braddock Road Metrorail station, and City of Alexandria residential neighborhoods and commercial areas; and
- West by Jefferson Davis Highway (U.S. Route 1), light industrial and commercial properties along Jefferson Davis Highway, City of Alexandria and Arlington County residential neighborhoods, and the Arlington County Water Pollution Control Plant.

The population of the City of Alexandria is approximately 115,000 and that of Arlington County is approximately 170,000. Appendix J of the ECS Report contains census data characterizing the population in the vicinity of the Potomac Yard. Current land uses in the vicinity of Potomac Yard are typical of a densely developed urban area. These uses include a major urban airport; parking lots; small-, medium-, and large-scale hotels and office buildings; light industrial and commercial establishments; residential uses including single family homes, townhouses, and a range of small- to large-scale apartment buildings; a variety of public use buildings; and a variety of recreational resources, including marinas, parks, playgrounds, and bike paths.

Drinking water is provided by municipal water supplies. The City of Alexandria obtains potable water from the Virginia American Water Company (VAWC). VAWC purchases its water from the Fairfax County Water Authority; this water is obtained from the Occoquan Reservoir, located approximately 15 miles to the southwest. The VAWC also maintains two supply wells for emergency use, located approximately 3,500 feet southwest of Potomac Yard, a location hydraulically upgradient from the Site. Arlington County obtains potable water from the District of Columbia Water and Sewage Commission (DCWSC). Two intakes in the Potomac River provide water for the DCWSC. These intakes are located upstream of the site.

Except for existing main line railroad and Metrorail tracks, most of the rail operations at the Potomac Yard have been removed. With the exception of Potomac Greens, the Site is generally flat, with little vegetation, as a result of being graded in the past for rail operations. Steep slopes are present along the eastern side of the Metrorail Yellow Line near the eastern border of the rail yard and along the main line tracks near the western border of the Site.

2.4 Future Land Use

The City of Alexandria and Arlington County are long-established, densely populated urban areas. Any development or redevelopment in areas surrounding the Potomac Yard site is likely to reflect the existing mixed use development in these areas. Development of the site can be expected to occur generally according to Master Plans for Alexandria and Arlington, and RF&P's more specific site development plans.

The City of Alexandria portion of the Site, consistent with the 1992 Master Plan of the City of Alexandria (City of Alexandria 1992a), is zoned Coordinated Development District (CDD). This

designation is applied to areas where major mixed use development is anticipated to take place within the City. CDD planning incorporates a review process to ensure that development exhibits a proper integration of uses, the highest quality of urban and architectural design, and consistency with the surrounding areas of the city. The Potomac Yard/Potomac Greens Small Area Plan chapter of the 1992 Master Plan of the City of Alexandria (City of Alexandria 1992b) and excerpts from the City of Alexandria Zoning Ordinance are provided in Appendices K and L, respectively, of the ECS Report.

The Small Area Plan serves as the basis for future City Council policy initiatives and actions affecting land use, zoning, capital improvements, and programs in the area addressed. It describes in some detail the land use, development opportunities, and historical context of the areas surrounding the Potomac Yard site. The Plan states the new community developed at the site is unlikely to mirror the lower density development patterns in some of the areas adjacent to the site and notes that these areas were built in earlier times and in response to different historical patterns. Rather, development policies for moderate heights and densities are encouraged (except near transit stations where higher densities are permitted). These goals are reflected in the City of Alexandria Zoning Ordinance. City of Alexandria zoning for the Potomac Yard/Potomac Greens area describes the amounts and types of development permitted at the site. The zoning provides for a variety of general land uses including: (1) a mix of offices, retail shops, restaurants, and higher density housing concentrated near a future transportation hub (which will serve Metrorail, Amtrak, and Virginia Railway Express); (2) a mix of housing types (townhouse and multifamily dwellings); (3) a possible shopping center to serve the district and nearby residential neighborhoods; (4) a variety of retail and service uses scattered throughout the district at appropriate locations; (5) a variety of parks and open spaces; and (6) community facilities as needed. The CDD specifically provides for interim uses of various locations at the Site planned for later phases of development subject to a special use permit process.

The Arlington portion of the site (designated by the County as South Tract) is currently zoned M-1 (Light Industry) and is designated Service Industry on the General Land Use Plan (Arlington County 1990). The Arlington County General Land Use Plan, an excerpt from the "M-1" Light Industrial Zoning regulations (Arlington County, undated), and background information on current Arlington County Land Use Alternatives (Arlington County 1991) are provided in Appendices M, N, and O, respectively, of the ECS Report. Both the zoning and master plan provide for wholesale, storage, and light manufacturing uses on a "by-right" basis. All current Arlington County Land Use Alternatives for the South Tract identify this area as 2/3 Low Density Office-Apartment-Hotel and 1/3 Medium Residential (e.g., townhouse and higher density).

RF&P's current development plans for Potomac Yard correspond with current zoning designations or requirements negotiated with the City of Alexandria and Arlington County. Although these plans are not final, they represent, conceptually, the types of development that will occur and, as such, provide a basis for developing appropriate exposure scenarios for the

evaluation of potential risks to human health and ecological receptors under interim and future use conditions at the Site.

RF&P plans a variety of urban-density land uses, including a regional transportation hub (including a new Metrorail station), office, hotel, retail, and residential, as well as open space, at the Site. Also planned are open public areas such as small parks, recreational areas, and playing fields. The types of residential dwellings that will be constructed include townhouses, stacked townhouses, mixed-use dwellings, and low-, mid-, and high-rise buildings (maximum height of 110 feet under current CDD guidelines). Only a portion of the Slaters Lane section of Potomac Yard is being considered as a potential site for development of single family detached dwellings with private yards. Buildings are expected to be constructed at grade or sufficiently below grade to provide for parking. In general, areas surrounding residential, commercial, and retail locations will be common areas and landscaped or paved for roads, walkways, or bike paths. Landscaping will be maintained professionally (e.g., by the municipalities, developers, or residents associations). Open areas, including active and passive parks, common areas, and private yards, will be graded and covered with fill prior to appropriate landscaping. Development will begin in the Central Operations Area with construction of the regional transportation hub and higher density commercial, retail, hotel, and residential projects. Initiation of the regional transportation hub will begin in 1998, with anticipated completion in 2000. Additional development will move out radially from the centrally located Metrorail Station and transportation hub, with anticipated completion of development at the Site in approximately 2020.

Interim land uses may occur for periods of 15-20 years during completion of development of the Potomac Yard Site. These uses may include warehouses, "big-box" retail stores, parking lots, and similar developments. Interim development will take place primarily in the North Yard, North Yard Tail, South Yard, and South Yard Tail areas of the Site. Recently, RF&P Railroad Company has applied to the City of Alexandria for approval of a Site Plan (#94-021) for completion of a 107,004 square foot warehouse building to be leased to the U.S. General Services Administration in the South Yard area of the Site. This warehouse site is anticipated to be used for about 15-20 years before completion of the ultimate site development in the South Yard portion of the Site. Appendix P in the ECS Report provides details of RF&P's development plans. It includes conceptual drawings, site plans, building elevation plans, footprint plans, and details regarding the amounts and types of development currently envisioned.

2.5 Potentially Exposed Populations and Activity Patterns

This section characterizes potential human receptors in the vicinity of the Potomac Yard Site. This consideration of potential human receptors summarizes information on locations of potentially exposed populations, anticipated human activity patterns, and subpopulations of potential concern.

2.5.1 Locations of Potentially Exposed Populations

Currently, only a small number of individuals carry out rail yard or utility maintenance operations at the Potomac Yard Site. In addition, site characterization and remediation workers, RF&P employees, and other maintenance workers are periodically onsite. The site is not open to the public and access is restricted.

Populations of individuals in areas surrounding Potomac Yard include workers, local residents, and individuals taking part in recreational activities. Occupational categories in the surrounding areas include blue collar, white collar, and service industry sectors. Workplaces include high rise office buildings, shopping centers, store-front retail locations, a major urban airport, light industry, and commercial operations. Residential areas also are broadly represented and include single family detached homes, townhouses, and apartment buildings. There are a number of bike/pedestrian paths, parks, and play fields in the area, including parks along Four Mile Run and the Potomac River. Daingerfield Island is a 109-acre, federally owned park that is part of the George Washington Memorial Parkway System. The park is located east of the Parkway on the Potomac River and includes a sailing marina, a restaurant, a parking lot, several multi-purpose play fields, and a wooded park area. Fishing and boating are relatively popular activities in the Potomac River and in Four Mile Run near its confluence with the Potomac.

Populations that potentially could use the Potomac Yard Site in the future include local offsite populations, as described above, as well as persons associated with onsite development activities. Workers carrying out construction as part of development activities at the site may be present at various times over the approximately 20-year time frame for ultimate development at the site. In addition, after completion of phases of development at the site, additional groups of permanent and transient occupational, residential, and recreational receptors will become established at the Potomac Yard site. Recreational opportunities at the site are likely to include open space parks, bike/pedestrian paths, playgrounds, and play fields.

2.5.2 Activity Patterns

Construction workers at the site typically would be transient workers. They would be expected to work on a project on a regular basis over a period ranging from days or weeks to months or longer.

Initially, interim development is likely to be established at the site in selected locations, and then replaced by the planned ultimate land uses for the site. Interim uses are likely to include operations such as warehouses, "big-box" retail outlets, and parking lots. Construction activities will result in relatively little soil disturbance and excavation. Construction would occur primarily at grade with relatively little subsurface excavation. The interim use operations would be staffed with permanent adult workers who will be present at the site on a regular basis prior to completion of final development at the site. In addition, transient users of the services provided also would visit the site periodically.

As the site develops, permanent residential buildings, office buildings, hotels, commercial establishments, transportation facilities, and recreational areas will be built. Construction of some of these facilities will involve more extensive subsurface excavation than is expected for the interim use facilities. Onsite populations would include permanent and temporary workers, permanent residents, and transient visitors to the site such as shoppers and individuals using the hotel, restaurant, transportation, and recreational facilities.

2.5.3 Subpopulations of Potential Concern

Prior to and during development of the Potomac Yard Site, onsite receptors are expected to comprise adult workers. Trespassers also may occasionally use the site on a transient basis. The site is not readily accessible to unauthorized individuals; accordingly, it is unlikely that young children would trespass on the site. During construction, there will be both passive and active security measures around the construction areas. During construction activities at the site, occupational or residential receptors downwind of the site could potentially be exposed to dust generated at construction sites.

After portions of the site are developed for use, individuals of all ages are likely to have ready access to selected areas of the site. Employees working at the site will visit the site regularly, sometimes over periods of several years. In addition, some workers, such as landscape, utility, or maintenance workers will periodically visit the site. Some individuals will visit the site occasionally to make use of the commercial and recreational facilities, and some individuals would live at the site, possibly for extended time periods.

2.6 References

Arlington County, VA. 1990. Clerk of the County Board, General Land Use Plan, Adopted August 12, 1961 (with amendments through June 30, 1990).

Arlington County, VA. 1972-1991. Planning Division. Jefferson Davis Corridor: Recommended General Land Use Plan. Also, Transportation Study (1991).

Arlington County, VA. undated. Excerpt from Zoning Regulations: Sect. 29, M-1 Light Industrial Districts.

Cerco, C.F. 1985. Water quality in a Virginia Potomac Embayment: Four Mile Run final report. Ph.D. diss., Virginia Institute of Marine Science, College of William and Mary.

City of Alexandria, VA. 1992a. Zoning Ordinance #3604: To Amend and Reordain Section 5-602 (Coordinated Development Districts Created, Consistency with Master Plan, Required Approvals) of Article V (Mixed Use Zones), 12 December.



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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October 16, 2000

Dennis H. Treacy
Director

Gregory L. Clayton
Regional Director

Mr. Scott Slagley
Manager-Environmental Programs
Commonwealth Atlantic Properties, Inc.
4102 East Parham Road, Suite E
Richmond, Virginia 23228

**RE: PC#91-1668; CASE CLOSED; RF&P Potomac Yard
2801 Jefferson Davis Highway, Alexandria**

Dear Mr. Slagley:

Following a review of the referenced file and based upon the information you have submitted regarding current site conditions, the Department of Environmental Quality (DEQ) has determined that contamination levels at this site do not represent an identified risk to human health and the environment. Therefore, this case is closed. No further corrective action is required by you related to this release.

Please be advised, however, that should further environmental problems occur, which the DEQ determines are related to this release, the DEQ reserves the right pursuant to Virginia Law and Regulations to require additional investigation and/or corrective action.

Although no further corrective action is required related to this release, the following items may need to be addressed:

- ▶ Any groundwater monitoring wells installed as a result of this release must be properly closed in accordance with Section 5.7 and Appendix C of the DEQ Storage Tank Program Technical Manual.

PC#91-1668

► Any removed, closed-in-place, existing or new regulated underground storage tank (UST) must be registered with the DEQ. A UST Notification form (Form 7530-1) must be completed and sent to the DEQ Central Office in Richmond, Virginia. Completion of this form is not required if your tank(s) is currently registered and the registration is up-to-date. Certain types of tanks, such as tanks which contain heating oil that is used to heat the premises where the tank is located and tanks with a capacity of 1100 gallons or less which contain motor fuel for noncommercial purposes, are not required to be registered.

If you are eligible for and plan to seek reimbursement from the Virginia Petroleum Storage Tank Fund, you have **two years** from the date of this letter to apply for reimbursement. This includes reimbursement for costs to properly abandon monitoring wells.

If you have any questions or need additional information, please feel free to contact Jay Green at (703) 583-3812.

Sincerely,



Cynthia A. Sale
Environmental Administrator
Remediation

caseclos.doc

cc: File
Chron
Earth Tech