FORT BELVOIR

Polychlorinated Biphenyls (PCBs) TMDL Action Plan for the Tidal Potomac

VPDES Small MS4 General Permit
No. VAR040093

VPDES Individual Permit for Industrial Stormwater Discharges
No. VA0092771

PREPARED FOR:
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ACRONYMS AND ABBREVIATIONS

AAFES	Army and Air Force Exchange Services
AOC	Area of Concern
AOPC	Area of Potential Concern
AR	Army Regulation
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	below ground surface
BLDG	building
BMP	Best Management Practice
CWA	Clean Water Act
CSO	combined sewer overflow
DCR	Department of Conservation and Recreation
DDOE	District of Columbia Department of the Environment
DECA	Defense Commissary Agency
DEQ	Department of Environmental Quality
DOD	Department of Defense
DPDO	Defense Property Disposal Office
DPT	Direct Push Technology
DPW-ENV	Directorate of Public Works, Environmental Division
DPW-ENRD	Directorate of Public Works, Environmental and Natural Resources Division
DVP	Dominion Virginia Power
FBNA	Fort Belvoir North Area
ft	feet
g	grams
GIS	Geographic Information System
HWMMP	Hazardous Waste Minimization and Management Plan
ISW	Industrial Stormwater
L	liter
LA	load allocations
LID	Low Impact Development
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
MCM	Minimum Control Measures
MDE	Maryland Department of the Environment
MILCON	Military Construction
MOS	margin of safety
MS4	Municipal Separate Storm Sewer System
MSP	Master Spill Plan
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System

NRO	Northern Regional Office
ORI	outfall reconnaissance inventory
PCB	polychlorinated biphenyl
PE	Professional Engineer
PID	Photoionization Detector
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RO	Representative Outfalls
RSL	Regional Screening Level
RSSL	Residential Soil Screening Level
SCF	SES Construction and Fuel Services LLC
SMF	Stormwater Management Facility
SPCC	Spill Prevention, Control, and Countermeasure
SVOC	Semi-Volatile Organic Compounds
SW	Stormwater
SWCB	State Water Control Board
SWMU	Solid Waste Management Unit
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
tPCB	Total PCBs calculated as per TMDL Guidance Memo 14-2004
VADEQ	Virginia Department of Environmental Quality
VELAP	Virginia Environmental Laboratory Accreditation Program
VOC	Volatile Organic Compounds
VPDES	Virginia Pollutant Discharge Elimination System
U.S. EPA	United States Environmental Protection Agency
WLA	Waste Load Allocation
WQC	Water Quality Standards

1. INTRODUCTION AND BACKGROUND

The U.S. Army Garrison Fort Belvoir is in southeastern Fairfax County, Virginia, approximately 15 miles southwest of Washington, DC, and 95 miles north of Richmond, Virginia. Fort Belvoir's military history dates to the early 1900s, when the facility was known as Camp Belvoir and used as an Army rifle range and training camp. The post was re-named Fort Humphreys in 1922 and became Fort Belvoir in 1935. Since 1935, Fort Belvoir has supported major U.S. military operations throughout the world. In recent years, Fort Belvoir has functioned primarily as an administrative and logistics support center for the Army and as a host for over 150 tenant organizations from various government branches (including all branches of the armed services). It currently employs more than 35,000 civilian and military personnel, and provides support services for over 207,000 military personnel, dependents, and retirees in the region.

Fort Belvoir consists of more than 7,700-acres on Main Post and an 806-acre detachment parcel, Fort Belvoir North Area (FBNA), located north of Main Post and west of Interstate 95. The Main Post is situated between Interstate 95 and Pohick Bay and Gunston Cove on the Potomac River. US Route 1 divides the Main Post into two distinct geographical areas, referred to as North Post and South Post, as shown in Figure 1.

Tidewater was contracted by Fort Belvoir Directorate of Public Works, Environmental Division (DPW-ENV) to support DPW-ENV's ongoing environmental stewardship and to develop a document that satisfied the Potomac River Watershed polychlorinated biphenyl (PCB) total maximum daily load (TMDL) requirements in accordance with General Permit VAR04 (4VAC50-60-1240), effective 2008-2013, Section 1B from the Virginia Department of Environmental Quality (VADEQ) Department of Conservation and Recreation (DCR).

The following four tasks were completed as a part of the original 2013 TMDL Action Plan:

- A PCB historic use inventory identified sites where PCBs are currently stored or have been historically stored, transferred, transported or spilled in a manner that would expose them to precipitation.
- A PCB historical use analysis evaluated lines of evidence to determine which sites, if any, identified in the inventory required sampling. For those sites requiring sampling, recommended sampling locations were determined.
- Best Management Practices (BMPs) at each site were evaluated and existing BMPs from the Municipal Separate Storm Sewer System (MS4) program plan were evaluated to determine if they sufficiently address the PCB concerns. Where applicable, recommendations were made for which general and site specific BMPs could be implemented.
- A sampling plan (this action plan) was developed that summarized the findings of the above tasks and documented detailed plans for future PCB sampling required in accordance with MS4 General Permit Conditions.

The 2013 PCB TMDL Plan was approved by VADEQ in a letter (Appendix C), dated December 16, 2015.

In 2016, SES Construction and Fuel Services LLC (SCF) was tasked with reviewing and updating the 2013 PCB TMDL Action Plan as per Section I.B of Fort Belvoir's current General Virginia Pollutant Discharge Elimination System (VPDES) Permit for discharges of Stormwater from Small MS4s (VAR040093) issued by the VADEQ effective 2013-2018 (9VAC25-890-40).

As a result of Chapters 756 and 793 of the 2013 Acts of Assembly, oversight of water quality planning and laws dealing with stormwater management, erosion and sediment control, and the Chesapeake Bay Preservation Areas has been transferred from the DCR to the VADEQ and State Water Control Board. (VADEQ, 2013)

In the 2016 Update to the Fort Belvoir PCB TMDL Action Plan, special consideration was also given to the requirements of the Final Individual VPDES Industrial Stormwater (ISW) Major Permit (VA0092771), effective 1 January 2017. The ISW Major Permit covered industrial discharges from 31 Representative Outfalls (RO) across the installation and required an evaluation of historical activities, identification of any contaminated sites within the covered drainage areas, and development of a sampling plan. All ISW outfalls covered under the 2017 are shown in Figure 1.

To satisfy requirements from both the MS4 and ISW Permits, SCF performed the following tasks as a part of the 2016 TMDL Action Plan:

- Addressed VADEQ comments (Appendix C) received in the Local TMDL Plan Approval letter, dated December 16, 2015, by adding a legal authority section
- Reviewed historic PCB sites current remediation status and evaluated for any necessary updates or changes to the Action Plan
- Evaluated drainage areas for 31 ISW outfalls for upstream contributions from known historic PCB contaminated sites
- Evaluated PCB sampling results from Fort Belvoir for compliance with TMDL goals
- Evaluated effectiveness of BMPs to meet water quality standards and updated the status of implementation of proposed BMPs

In 2020, SCF performed additional updates to PCB TMDL Action Plan, to address new and changing requirements due to the reissuance of the MS4 General Permit which became effective 1 November 2018. The 2018-2023 MS4 General Permit Part II.B.1.a required that the PCB TMDL plan be updated to meet conditions of Part II.B.6 and B.7.

SCF performed the following tasks in this 2020 review and update to the PCB TMDL Action Plan:

- Reviewed and updated historic PCB sites current remediation status and evaluated for any necessary updates or changes to the Action Plan
- Evaluated PCB sampling results from Fort Belvoir for compliance with TMDL goals
- Evaluated effectiveness of BMPs to meet water quality standards and updated the status of implementation of proposed BMPs
- Updated all Permit references to reflect the 2018-2023 MS4 General Permit Requirements
- Updated Reporting to include Part II.B.6.b requirements for notification of new sites to VADEQ
- Added Public Comment information as per Part II.B.7

The 2020 PCB TMDL Plan was approved by VADEQ in a letter (Appendix C) dated May 23, 2022 after a response to comments received in March of 2022.

In a 2023 update to the Fort Belvoir PCB TMDL Action plan, AECOM performed the following tasks:

- Reviewed and updated historic PCB sites current remediation status and evaluated for any necessary updates or changes to the Action Plan
- Evaluated PCB sampling results from Fort Belvoir for compliance with TMDL goals
- Addressed VADEQ comments (Appendix C) received as part of the Fort Belvoir FY2022 MS4 Annual Report Review dated 17 March 2023.

VADEQ conditionally approved this plan in a letter dated June 26, 2023.

In 2025, Aerostar Environmental and Construction LLC (AEC) was tasked with updating the PCB TMDL Action Plan to address any new requirements from the MS4 General Permit which became effective 1 November 2023. In addition, the ISW Permit, planned for reissuance in April 2025, resulted in shifting of some regulated areas to the installation's MS4 permit. Therefore, this 2025 update considers any changes due to new ISW Permit (Draft). The current MS4 Service Area, changes based on the 2025 ISW permit, and drainage areas that will continue to be covered under the 2025 ISW permit are shown in Figure 1.

The current MS4 General Permit (9VAC25-890-40), effective 2023-2028, Part II.B covers requirements and TMDL special conditions as they relate to local TMDLs and calls for the permittee to update any previously approved TMDL Action Plans to meet the conditions of Parts II.B.4 and B.7, which outline the requirements for all TMDL Action Plans and those in relation to PCB TMDLs. The 2023-2028 permit also requires that updated plans include:

> *(1) An evaluation of the results achieved by the previous action plan; and*
>
> *(2) Any adaptive management strategies incorporated into updated action plans based on action plan evaluation.*

AEC performed the following tasks as a part of the 2025 update to the PCB TMDL Action Plan:

- Updated Mapping to clearly define 'direct drainage' areas for the PCB TMDL, The MS4 Service Area, and areas covered under the ISW Permit.
- Updated all Permit references to reflect the 2023-2028 MS4 General Permit Requirements
- Reviewed and updated historic PCB sites current remediation status, identified any new sites
- Reviewed historical PCB sampling results, corrected discrepancies in findings, and adjusted TMDL goals to reflect lower water quality criteria for total PCBs, effective 2023
- Ensured concerns and comments from VADEQ received between 2022 and 2025 were addressed and clarified including consolidation of appendices and streamlining of Action Plan for greater understanding.
- Evaluated effectiveness and results achieved by the previous plan, as required by Part II.B.2.a, and updated the status of implementation of proposed BMPs

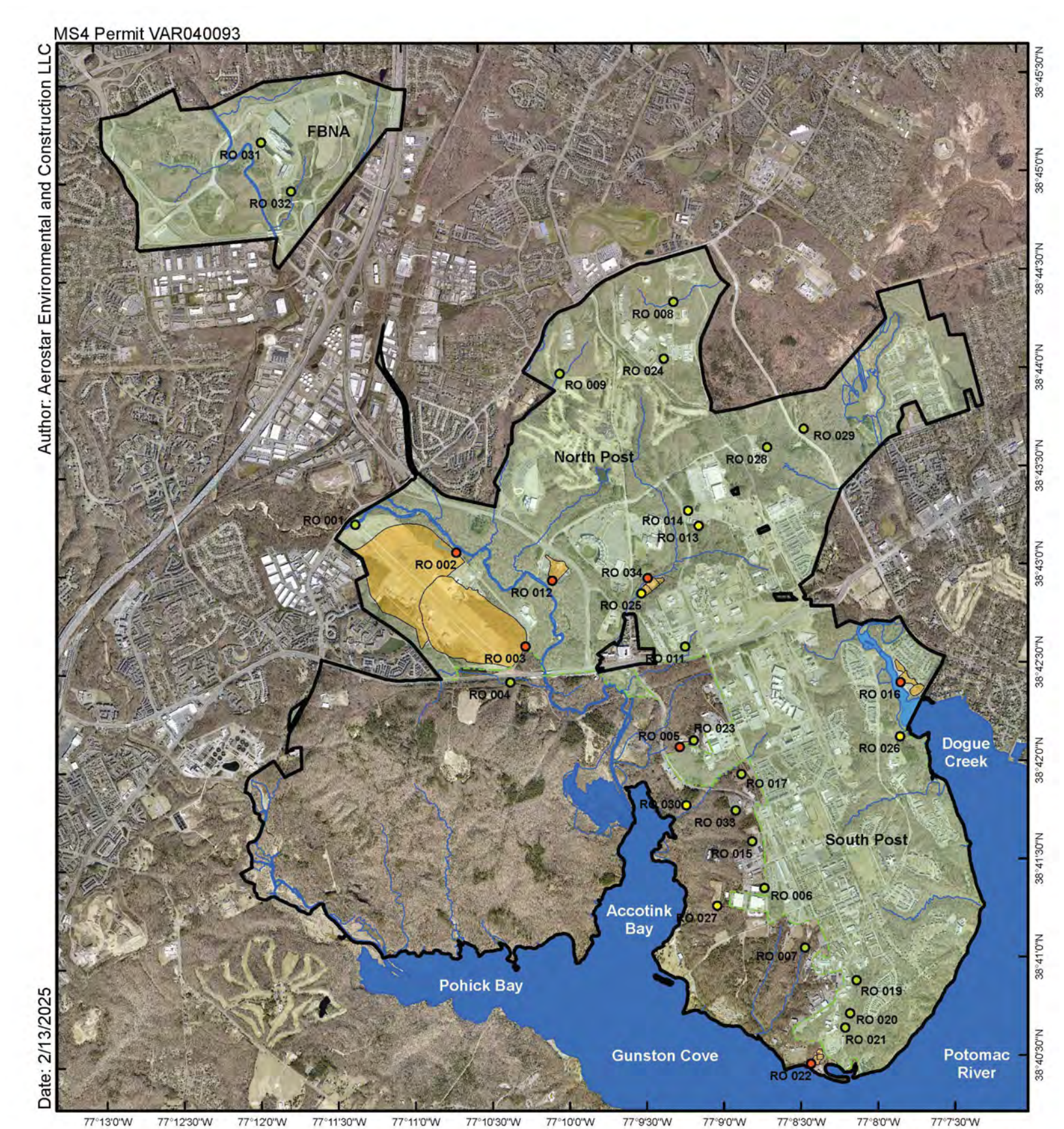

Figure 1:
Fort Belvoir
Stormwater Permits

N

2,800 1,400 0 2,800 5,600 Feet

Legend

- Fort Belvoir Boundaries
- Major Waterway
- MS4 Service Area (2025)
- ISW Drainage Area (2025)

Changes based on 2025 ISW Permit Reissuance

- Maintained Under Permit VA0092771
- Moved to MS4 permit VAR040093
- CoverageTerminated

Fort Belvoir 2025 PCB TMDL Action Plan
Sources: Fort Belvoir, USEPA, Fairfax County

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2. LEGAL AUTHORITIES

2.1. TOXIC SUBSTANCES CONTROL ACT (TSCA), 15 USC 2605

The principal federal law regulating PCBs is the Toxic Substances Control Act (TSCA) and its implementing regulations, found in 40 CFR 761. Congress enacted the TSCA to control the distribution, use, and disposal of harmful chemicals, including PCBs. Through TSCA, Congress established several requirements for identifying and controlling toxic chemical hazards that pose risks to human health and the environment.

As they are regulated under TSCA, PCBs are not considered hazardous wastes under Subtitle C of the Resource Conservation and Recovery Act (RCRA). Subpart D of TSCA regulates the storage and disposal of PCBs as well as provides cleanup and disposal options for PCB remediation waste. Disposal options for PCB remediation wastes are implemented in 40 CFR 761.61. This section includes instructions for self-implementing cleanup and disposal of PCB remediation waste for a moderately sized site where there should be low residual environmental impact from remedial activities. This regulation also provides for performance-based disposal of PCB remediation waste adhering to the cleanup standards listed in the regulations.

Section 761.61(b) states that disposing of PCB remediation waste shall be done according to § 761.60(a) or (e) or decontaminate it in accordance with § 761.79. EPA regulations under TSCA in turn allow discharge of water to a treatment works or navigable waters if the PCB concentration is less than 3 µg/L (ppb), or if the concentration complies with a PCB water discharge limit in the discharger's Clean Water Act (CWA) permit [40 CFR 761.79(b)(1)(ii)]. (U.S. EPA, 2011)

2.2. SECTION 303(D) OF THE CLEAN WATER ACT (CWA) AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S (EPA'S) WATER QUALITY PLANNING AND MANAGEMENT REGULATIONS (40 CFR PART 130)

The CWA and EPA's Management regulations direct States to identify and list water bodies in which current required controls of a specified pollutant are inadequate to achieve water quality standards. States are then required to establish Total Maximum Daily Loads (TMDLs) for water bodies that are exceeding water quality standards. TMDLs represent the total pollutant loading that a water body can receive without violating water quality standards. The TMDL process establishes the allowable loadings of pollutants waste load allocation (WLA) needed to achieve and maintain water quality standards.

For the Commonwealth of Virginia, Impaired waters are outlined in the biennial Virginia Water Quality Assessment 305(b)/303(d) Integrated report. The report defines water based on status of assessments as follows:

- 303 (d) - Category 5A - Waters needing Total Maximum Daily Load Study
- 303 (d) – Category 4A – TMDL Approved

Virginia embayments to the Upper Potomac River (A12E-01-PCB) were first listed as impaired for PCBs in fish tissue in category 5A in Virginia's 2004 305(b)/303(d) Water Quality Assessment Integrated Report. In September 2007, the PCB TMDL for Tidal Portions of the Potomac and Anacostia Rivers was developed by Interstate Commission on the Potomac River Basin. The U.S. EPA approved the TMDL on 31 October 2007 and the State Water Control Board (SWCB) approved the TMDL shortly after on 11 April 2008.

The allocated PCB load from direct drainage sources in the Potomac Watershed was set for impaired water bodies receiving discharges from Fort Belvoir including tidal portions of the tributaries and embayments to the Accotink Bay, Dogue Creek, Pohick Bay, and Gunston Cove. These embayments continue to be listed in the current VADEQ Draft 2024 305(b)/303(d) Water Quality Assessment Integrated Report as category 4A and have not yet been approved for delisting.

In 2010, a 10.11-mile segment of Accotink Creek, beginning at the outlet of Lake Accotink and continuing downstream until the tidal waters of Accotink Bay, has been placed in cause category 5A as contaminated for PCBs in Fish Tissue under cause group code A15R-01-PCB. The original assessment in 2010 described exceedances in the water quality criterion-based fish tissue value of 18 parts per billion for PCBs in fish tissue being recorded in three species of fish (American Eel, Redbreast Sunfish, and Rainbow Trout) collected in 2004. Another assessment was performed in 2014 which described exceedances in the water quality criterion-based fish tissue value of 20 parts per billion for PCBs in fish tissue recorded in 2008 in one species of fish (American Eel) and in 2007 in one species of fish (Yellow Bullhead Catfish). This section continues to be listed in category 5A in the current VADEQ Draft 2024 305(b)/303(d) Water Quality Assessment Integrated Report but has a Low TMDL Development Priority.

2.3. SECTION 311 OF THE CWA AND EPA'S OIL POLLUTION PREVENTION REGULATIONS (40 CFR PART 112)

The CWA Section 311(b) (2) (A) requires EPA to compile a list of hazardous substances which, when discharged to navigable waters or adjoining shorelines, present an imminent and substantial danger to the public health or welfare. This includes danger to fish, shellfish, wildlife, and beaches. These hazardous substances are listed in tables A and B of 40 CFR 116.4, and includes PCBs (CAS no. 1336363). EPA's Oil Pollution Prevention regulation establishes requirements for facilities to prevent oil spills from reaching navigable waters of the United States or adjoining shorelines, or certain other areas. 40 CFR 112.1(c) requires federal facilities to fully prepare and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan.

Fort Belvoir operates under the current SPCC Plan, dated December 2023 and signed into effect on June 25, 2024. The Plan establishes procedures, methods and equipment, and other requirements to prevent the discharge of oil and hazardous substances from facilities associated with Fort Belvoir. This Plan identifies potential spill sources, preventive measures, control and response procedures, inspection programs, and required training of personnel. Sources of PCBs considered in the SPCC Plan includes oil-filled operational equipment (OFOE), such as transformers. The plan notes that, although many transformers which have dielectric fluid are located on Fort Belvoir, they are managed by Dominion Virginia Power (DVP) and notes that:

"The transformers are self-contained and certified PCB-free"

2.4. 40 CFR §122.44 ESTABLISHING LIMITATIONS, STANDARDS AND OTHER PERMIT CONDITIONS APPLICABLE TO STATE NPDES PROGRAMS

Section (d) (1) (vii) (B) requires that all new or revised National Pollutant Discharge Elimination System (NPDES) permits must be consistent with assumptions and requirements of any applicable TMDL WLA. The Commonwealth of Virginia VADEQ regulates the management of pollutants carried by stormwater runoff under the VPDES program.

2.5. US ARMY REGULATION (AR) 200-1, ENVIRONMENTAL PROTECTION AND ENHANCEMENT

The AR 200-1 defines the framework for the Army Environmental Management System (EMS). It implements Federal, State, and local environmental laws and Department of Defense (DOD) policies for preserving, protecting, conserving, and restoring the quality of the environment. This regulation addresses environmental responsibilities of all Army organizations and agencies. Specifically, this regulation applies to Active Army, Army National Guard, United States Army Reserve, as well as Tenants, contractors, and lessees performing functions on real property under the jurisdiction of the Department of the Army (for example, Army and Air Force Exchange Services (AAFES), Defense Commissary Agency (DECA)) (Army, 2007). Chapter 4-2 of the AR requires compliance with all requirements, substantive and procedural, for control and abatement of water pollution, as outlined in the CWA, including implementation of TMDL regulations.

AR 200-1 also sets program requirements and policies in regard to material management in Chapter 9 covering toxic substances including PCBs. Army policy is for generators of PCBs to manage them in place unless operational, economic, or regulatory considerations justify removal. Economic analyses include potential environmental damage (AR 200-1 9-2.c (1)). The major goal for the program is to prevent human exposure to PCB hazards and remain compliant with all Federal, State, and local regulations while prohibiting the new use and introduction of PCBs at Army Facilities.

Under Chapter 9 of AR 200-1 Fort Belvoir has developed a PCB Management Plan, dated October 2024, focused on preventing human exposure to PCB hazards on Fort Belvoir and to protect the environment from the toxic effects of PCB waste while complying with all pertinent federal, state, local, and Army regulations. The plan provides general information about PCBs and relevant regulations, includes all available information about historic PCB usage on Fort Belvoir, and aligns this information into Fort Belvoir's strategy and management framework for PCBs. The management strategy is designed to:

a) Eliminate PCBs found in 'closed systems' from all Army-owned electrical distribution systems and equipment containing hydraulic fluids, cooling, and lubricating oils after the remainder of their useful lives. As of 2016, Fort Belvoir has eliminated all known PCB equipment and PCB-contaminated transformers from the Garrison.

b) Eliminate PCBs found in 'partially closed systems' like that found in small capacitors (including light ballasts) after the remainder of their useful lives. The useful life of a florescent light ballast (FLB) is approximately 20 years while that of a circuit breaker may be closer to 40 years. As of 2024, these articles are well past their useful life and most, if not all have been replaced during regular building maintenance and renovation projects. Precautions are still taken in identifying and removing these items during projects to ensure proper management and disposal

c) Manage PCBs used in 'open applications' in place as long as practical or until scheduling a facility with PCBs for disposal. This involves project-specific identification, controls, and waste management to ensure there are no environmental impacts from the removal of regulated PCB-containing or PCB contaminated materials from buildings before deconstruction and demolition begins.

2.6. FORT BELVOIR GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4), MS4 GENERAL PERMIT NO. VAR040093

As required by Fort Belvoir's MS4 permit, TMDL WLAs are specifically addressed through the iterative implementation of programmatic Best Management Practices (BMPs). Only failure to implement the programmatic BMPs identified in this plan would be considered a permit noncompliance issue. The special conditions found within the 2013-2018 General VPDES Permit for Discharges of Stormwater from an MS4 at 9VAC25-890-40 Section I.B. were stated as follows:

"The operator shall maintain an updated MS4 Program Plan that includes a specific TMDL Action Plan for pollutants allocated to the MS4 in approved TMDLs. TMDL Action Plans may be implemented in multiple phases over more than one state permit cycle using the adaptive iterative approach provided adequate progress to reduce the pollutant discharge in a manner consistent with the assumptions and requirements of the specific TMDL wasteload is demonstrated in accordance with subdivision 2 e. of this subsection. These TMDL Action Plans shall identify the best management practices and other interim milestone activities to be implemented during the remaining terms of this state permit."

This permit was reissued for another two 5-year cycles under the same permit number VAR040093 in November of 2018 and 2023. The updated regulations found in 9VAC25-890-40, closely mimics the 2013-2018 Permit. In Part I.B it states:

"The MS4 program shall include the minimum control measures (MCM) described in Part I E. For the purposes of this permit term, implementation of MCMs in Part I E and the Chesapeake Bay and local TMDL requirements in Part II (as applicable) consistent with the provisions of an iterative MS4 program required pursuant to this general permit constitutes compliance with the standard of reducing pollutants to the "maximum extent practicable," provides adequate progress in meeting water quality standards, and satisfies the appropriate water quality requirements of the State Water Control Law and its attendant regulations."

In addition, Part II B 9 of the MS4 General Permit requires a minimum of 15 days of public comment to the Fort Belvoir public, and states:

"Prior to submittal of the action plan required in Part II B 2, the permittee shall provide an opportunity for public comment for no fewer than 15 days on the proposal to meet the local TMDL action plan requirements.

2.7. FORT BELVOIR INDIVIDUAL VPDES FOR DISCHARGES OF INDUSTRIAL STORMWATER (ISW) INDIVIDUAL PERMIT NO. VA0092771

The ISW permit became effective 1 January 2017, required the development of a plan for PCB sampling at outfalls located downstream of all known historically contaminated sites under Part I.C.4. As such, the 2018 and 2020 PCB Action Plans evaluated the drainage areas associated with each permitted ISW outfall for the presence of historic PCB sites located upstream and their possible contribution to the discharge from each permitted ISW outfall. The findings of this analysis are described in Appendix A and summarized in Table 3.

In the 2025 reissuance of the ISW Permit, to be reissued April 2025, Part I.8 requires monitoring for PCBs at six (6) locations during the fourth year of the permit term and that

The data shall be submitted to DEQ electronically with the next application for reissuance which is due at least 180 days prior to the expiration of this permit.

Additionally, Part I.9 requires that an annual report be submitted which includes results of any sampling and/or practices implemented as a part of this 2025 PCB Action Plan and states:

"The permittee shall submit to DEQ no later than October 1 of each year (beginning in 2025) an annual report providing the results of any sampling conducted at SW1, SW2, Warren-1, and Warren-2 and the status on the implementation of the PCB TMDL Action Plan to reduce loadings for the pollutant of concern below the Waste Load Allocation. The annual report shall cover the previous year from July 1 to June 30. The annual report developed to fulfill the requirements of the MS4 permit may be submitted to satisfy this requirement."

Special conditions found in Part III.8. of the permit require that corrective actions and exceedance reporting be done if:

"at any time, monitoring results show that discharges from the facility exceed an effluent limitation or a TMDL wasteload allocation, or the department determines that discharges from the facility are causing or contributing to an exceedance of a water quality standard"

2.8. FORT BELVOIR RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PART B PERMIT FOR STORAGE AND CORRECTIVE ACTION

The Fort Belvoir Hazardous Waste Management Permit for Storage and Corrective Action was issued by the VADEQ and became effective August 10, 2015. It authorized Fort Belvoir to manage hazardous wastes for one year at Building 1490 in accordance with RCRA and applicable provisions of 9VAC 20-60. Building 1490 stopped receiving wastes in 2011. In coordination with VADEQ the facility was closed, decontaminated, and then demolished in 2020. VADEQ concurred that all requirements under the Closure Plan had been completed a in September 2019.

Module IV of the Permit details the requirements of site wide (Fort Belvoir-Main Post) corrective actions to be taken to protect human health and the environment from all releases of hazardous waste or constituents from any solid waste management unit (SWMU) or Areas of Concern (AOC). Module IV requires that a RCRA Facility Investigation (RFI) be conducted for any potential releases at SWMUs and/or AOCs and states that:

"The purpose of the RFI is to determine the nature and extent of potential releases from SWMUs and AOCs, to screen SWMUs and AOCs from further investigation, and to determine whether interim/stabilization measures are necessary. The RFI includes the collection of site-specific data and an evaluation of potential impacts to human health and the environment from potential contamination from the facility. The RFI will gather all data necessary for the VADEQ/EPA Region 3 to determine whether a Corrective Measures Study (CMS) is required."

All SWMUs, new and old, on Fort Belvoir are managed as per Module IV of the RCRA Part B Permit, including those of historic PCB releases addressed in this PCB TMDL Action plan. If VADEQ or EPA Region 3 determine, based on the RFI or any other information, that corrective measures are necessary, the procedures outlined in Section IV.G of the permit will be followed until the site receives concurrence of closure.

2.9. MS4 PROGRAM PLAN

The MS4 Program Plan documents how Fort Belvoir will achieve compliance with the 2023-2028 MS4 General Permit. The plan is revised as needed throughout the life of the permit as part of the iterative process as required by Part I.C.4. The Program Plan satisfies the requirements of this section as well as the appropriate water quality requirements of the CWA and regulations in the absence of a TMDL WLA. The Plan includes six (6) minimum control measures as listed in Part I.E and details the implementation of BMPs to reduce pollutants, protect water quality, and ensure compliance with water quality standards.

The 2023- 2028 MS4 General Permit, Part II.B.10 states:

The MS4 program plan as required by Part I B of this permit shall incorporate each local TMDL action plan. Local TMDL action plans may be incorporated by reference into the MS4 program plan provided that the program plan includes the date of the most recent local TMDL action plan and identification of the location where a copy of the local TMDL action plan may be obtained.

As such, after the minimum 15-day public comment period specified in Part II.B.9 is completed, the final 2025 PCB TMDL Action Plan, dated will be incorporated into the current MS4 Program Plan by reference.

2.10. FORT BELVOIR PCB TMDL ACTION PLAN

This action plan addresses the requirement to minimize the pollutant of concern, PCB, by identifying legal authorities, BMPs and measurable goals for achieving compliance with the approved PCB TMDL Implementation Plan in accordance with the 2023-2028 9VAC25-890-40, Part II.B and Part II.B.7. In accordance with Part II.B.2.a:

For TMDLs approved by EPA prior to July 1, 2018, and in which an individual or aggregate wasteload has been allocated to the permittee, the permittee shall develop and initiate or update as applicable the local TMDL action plans to meet the conditions of Part II B 4, B 6, B 7, and B 8, as applicable, no later than 18 months after the permit effective date and continue implementation of the action plan.

Part II.B.7 of the 2023-2028 Permit specifically covers requirements for PCB TMDLs.

a. For each PCB TMDL action plan, the permittee shall include an inventory of potentially significant sources of PCBs owned or operated by the permittee that drains to the MS4 that includes the following information:

(1) Location of the potential source;

(2) Whether or not the potential source is from current site activities or activities previously conducted at the site that have been terminated (i.e., legacy activities); and

(3) A description of any measures being implemented or to be implemented to prevent exposure to stormwater and the discharge of PCBs from the site.

b. If at any time during the term of this permit, the permittee discovers a previously unidentified significant source of PCBs within the permittee's MS4 regulated service area, the permittee shall notify DEQ in writing within 30 days of discovery.

c. As part of its annual reporting requirements, the permittee shall submit results of any action plan PCB monitoring or product testing conducted and any adaptive management strategies that have been incorporated into the updated action plan based upon monitoring or product testing or both.

2.11. FORT BELVOIR POLICY MEMORANDUM

Fort Belvoir Policy Memorandum #25 Prohibition of Illicit/Unauthorized Discharges to the Municipal Separate Storm Sewer can be found in full in Appendix D. An installation-wide stormwater policy was developed to address compliance with the MS4 Permit, the ISW permit, the Clean Water Act, and other stormwater regulations, as well as the Hazardous Waste Minimization and Management Plan. The policy outlines proper protocols for minimizing stormwater pollution during activities that directly and indirectly impact water quality of the receiving waters. Section 5 of this policy states:

"Fort Belvoir is committed to protecting water quality of waterways on and surrounding Fort Belvoir to ensure that human health, ecosystem health, and the ability to conduct recreational opportunities are not impacted by stormwater pollution."

Section 5.a. specifically prohibits illicit discharges/illegal dumping at Fort Belvoir, including but not limited to:

"Sanitary sewer overflows, trash, paint, grease, motor oil or other lubricants, fuel, cooking oil, salt, fertilizer, pesticides chemicals, liquid materials, lawn wastes (grass clippings and leaves), mulch, cigarette butts, sand, soil, construction materials, wash waters containing soaps, detergents and degreasers of any kind, fire hydrant and water line flushing and potable water tank discharge without prior de-chlorination, and pet/animal waste."

2.12. DOMINION VIRGINIA POWER (DVP) CONTRACT

Utility equipment such as transformers are considered the largest source of PCBs on installations. Since the TSCA bans were put in place, many efforts have been made to eliminate all PCB-containing and PCB-contaminated electrical articles at Fort Belvoir.

In 2017 the electric distribution system was privatized to Dominion Virginia Power (DVP) under a contract signed by the Installation and DVP. Under this contract, DVP supplies electricity to Fort Belvoir Main Post and North Area and has the following stipulations outlined.

All changes that affect the PCB article (or PCB-contaminated article) list will be reported annually. This reporting includes replacement in total and flushed articles with reduced PCB concentrations.

Spills or leaks from PCB electrical equipment will be reported immediately to the installation POC.

3. FORT BELVOIR PCB TMDL ACTION PLAN

This plan was written and updated in compliance with Part II.B.2. and II.B.7 of Fort Belvoir 2023-2028 General VPDES Permit VAR040093, which requires the operator to maintain an updated Program Plan that includes a specific TMDL Action Plan for pollutant allocated to the MS4 in approved TMDLs, such as PCBs. The MS4 General Permit (9VAC25-890-40) was updated in 2023 and reissued to Fort Belvoir in November of 2023. Part II.B of the 2023-2024 MS4 General Permit specifies the requirements for updates to local TMDL plans and specific requirements for the PCB TMDL Plans.

Table 1 below summarizes the requirements of the 2023-2028 General MS4 Permit and the new 2025 ISW Permit No. VA0092771, expected to be reissued in April 2025, and how they have been addressed in this Action Plan.

Table 1: Permit Compliance Crosswalk

2023-2028 MS4 Permit Citation	**Action Items**	**Plan Section**
Part II.B.2.a.	For TMDLs approved by the EPA prior to 1 July 2018, and in which an individual or aggregate wasteload has been allocated to the permittee, the permittee shall develop and initiate or update as applicable the local TMDL action plans to meet the conditions of Part II B 4, B 6, B 7, and B 8, as applicable, no later than 18 months after the permit effective date and continue implementation of the action plan. Updated action plans shall include: (1) An evaluation of the results achieved by the previous action plan; and (2) Any adaptive management strategies incorporated into updated action plans based on action plan evaluation.	Updates to the Plan (All Sections) Historic Sampling and Results Achieved (Section 7.3) Existing BMP Evaluation (Section 8.1) New/Revised BMPs for Implementation (Section 8.2)
Part II.B.4	Each local TMDL action plan developed by the permittee shall include the following: a. The TMDL project name; b. The EPA approval date of the TMDL; c. The wasteload allocated to the permittee (individually or in aggregate), and the corresponding percent reduction, if applicable. d. Identification of the significant sources of the pollutants of concern discharging to the permittee's MS4 and that are not covered under a separate VPDES permit. For the purposes of this requirement, a significant source of pollutants means a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL;	a. Potomac Watershed PCB TMDL Applicability to Fort Belvoir (Section 4) b. Potomac Watershed PCB TMDL Applicability to Fort Belvoir (Section 4) c. Potomac Watershed PCB TMDL Applicability to Fort Belvoir (Section 4) d. PCB Source Analysis (Section 6)

	e. The BMPs designed to reduce the pollutants of concern in accordance with Parts II B 5, B 6, B 7 and B 8; f. Any calculations required in accordance with Parts II B 5, B 6, B 7 or B 8; g. For action plans developed in accordance with Part II B 5 B 6 and B 8, an outreach strategy to enhance the public's education (including employees) on methods to eliminate and reduce discharges of the pollutants; and h. A schedule of anticipated actions planned for implementation during this permit term.	e. Best Management Practices (BMPs) Analysis and Implementation Plan (Section 8) f. Not Applicable g. Best Management Practices (BMPs) Analysis and Implementation Plan (Section 8) h. Sampling and Analysis Plan (Section 7) and New/Revised BMPs for Implementation (Section 8.2)
Part II.B.7.a	For each PCB TMDL action plan, the permittee shall include an inventory of potentially significant sources of PCBs owned or operated by the permittee that drains to the MS4 that includes the following information: 1) Location of the potential source; 2) Whether or not the potential source is from current site activities or activities previously conducted at the site that have been terminated (i.e., legacy activities); and 3) A description of any measures being implemented or to be implemented to prevent exposure to stormwater and the discharge of PCBs from the site.	1) Figure 3 2) PCB Source Analysis (Section 6) 3) Historic Sampling and Results Achieved (Section 7.3) and Best Management Practices (BMPS) Analysis and Implementation Plan (Section 8)
Part II.B.7.b	If at any time during the term of this permit, the permittee discovers a previously unidentified significant source of PCBs within the permittee's MS4 regulated service area, the permittee shall notify DEQ in writing within 30 days of discovery.	Reporting (Section 9)
Part II.B.7.c	As part of its annual reporting requirements, the permittee shall submit results of any action plan PCB monitoring or product testing conducted and any adaptive management strategies that have been incorporated into the updated action plan based upon monitoring or product testing results if the permittee has elected to perform monitoring or product testing or both.	Reporting (Section 9)
Part II.B.9	Prior to submittal of the action plan required in Part I B 2, the permittee shall provide an opportunity for public comment proposed to meet the local TMDL action plan requirements for no less than 15 days.	Public Comment (Section 10)

Part II.B.11	For each reporting period, each annual report shall include a summary of actions conducted to implement each local TMDL action plan.	Reporting (Section 9)
ISW Permit Citation (Draft 2025 Permit)	**Action Items**	**Plan Section**
Section I.C.8	The permittee shall monitor the locations and outfalls listed below for Polychlorinated Biphenyls (PCBs). • SW1 (MP11) • SW2 (MP11) • Warren-1 (MP13) • Warren-2 (MP13) • Outfall 016 • Outfall 022 The permittee shall collect one (1) sample from each of the above locations and outfalls during the fourth year of the permit term. The data shall be submitted to DEQ electronically with the next application for reissuance which is due at least 180 days prior to the expiration of this permit	Sampling and Analysis Plan (Section 7) Reporting (Section 9)
Section I.C.9	The permittee shall submit to DEQ no later than October 1 of each year (beginning in 2025) an annual report providing the results of any sampling conducted at SW1, SW2, Warren-1, and Warren-2 and the status on the implementation of the PCB TMDL Action Plan to reduce loadings for the pollutant of concern below the Waste Load Allocation. The annual report shall cover the previous year from July 1 to June 30. The annual report developed to fulfill the requirements of the MS4 permit may be submitted to satisfy this requirement.	Reporting (Section 9)

4. POTOMAC WATERSHED PCB TMDL APPLICABILITY TO FORT BELVOIR

The TMDL of PCBs for tidal portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia, was approved by the EPA in October 2007. TMDL strategies were developed by the Interstate Commission on the Potomac River Basin as a joint effort for the regulatory agencies the District of Columbia Department of the Environment (DDOE), the Maryland Department of the Environment (MDE), and the VADEQ (Interstate Commission on the Potomac River Basin, 2007). The purpose of the TMDL development is to address water bodies impaired by PCBs in accordance with CWA Section 303(d) and U.S. EPA regulations at 40 CFR §130.7(c)(1) to prevent PCB concentrations in fish from exceeding jurisdictional thresholds for human consumption.

Baseline and TMDL PCB concentrations were determined for 28 impaired water bodies within the Potomac and Anacostia Rivers watershed. The TMDLs are the sum of waste load allocations (WLA), load allocations (LA), and a margin of safety (MOS). WLAs cover permitted point sources that potentially contribute PCB loads including wastewater treatment plants, regulated stormwater (MS4 permits), and combined sewer overflows. LAs include possible PCB loads from tributaries, non-point source runoff, atmospheric deposition to tidal water surface, and identified contaminated sites. MOS refers to uncertainty in relationship between pollutant loads and quality of receiving water.

The Fort Belvoir MS4 permit falls under the WLA for regulated stormwater portion of the TMDL. While individual wastewater treatment plants are assigned a specific maximum load and target reduction, and combined sewer overflow (CSOs) are assigned a percent reduction, possible contributions from regulated stormwater are addressed by BMPs. The 2007 Potomac Watershed PCB TMDL study states that:

> *Upon approval of the TMDL 'National Pollutant Discharge Elimination System (NPDES)-regulated municipal stormwater and small construction storm water discharges effluent limits should be expressed as BMPs or other similar requirements, rather than as numeric effluent limits' (U.S. EPA 2002)… The U.S. EPA recognizes that available data and information are usually not detailed enough to determine WLAs for NPDES regulated stormwater discharges on an outfall-specific basis (U.S. EPA, 2002). Therefore, in the tidal Potomac watershed, loads from the regulated NPDES stormwater outfalls will be expressed as a single stormwater WLA for each impaired water body*

The impaired water bodies receiving discharges from the Fort Belvoir MS4 area coverage include Accotink Creek, Dogue Creek, Pohick Creek, and Gunston Cove. The permitted stormwater WLA for each of these impaired water bodies is presented in Table 2. These WLAs only apply in the areas of direct drainage to the Tidal Potomac as shown in Figure 2.

Table 2: Stormwater WLA for Impaired Water Bodies Impacted by Fort Belvoir

Impaired Water Bodies	**WLA** tPCBs in g/yr	**Average Daily Load** tPCBs in mg /day	**Maximum Daily Load** tPCBs in mg /day
Accotink Creek/Bay *VAN-A15E_ACO01A06*	0.0992	0.272	12.9
Dogue Creek *VAN-A14E_DOU0A00*	20.2	55.3	2590
Gunston Cove *VAN-A15E_POH01A00*	0.517	1.42	67.3
Pohick Creek/Bay *VAN-A15E_POH02A00* *VAN-A16E_POH01A06*	7.58	20.8	988

Source: Interstate Commission on the Potomac River Basin, 2007. Tables 4, 5, and 6

Author: Aerostar Environmental and Construction LLC

Date: 3/3/2025

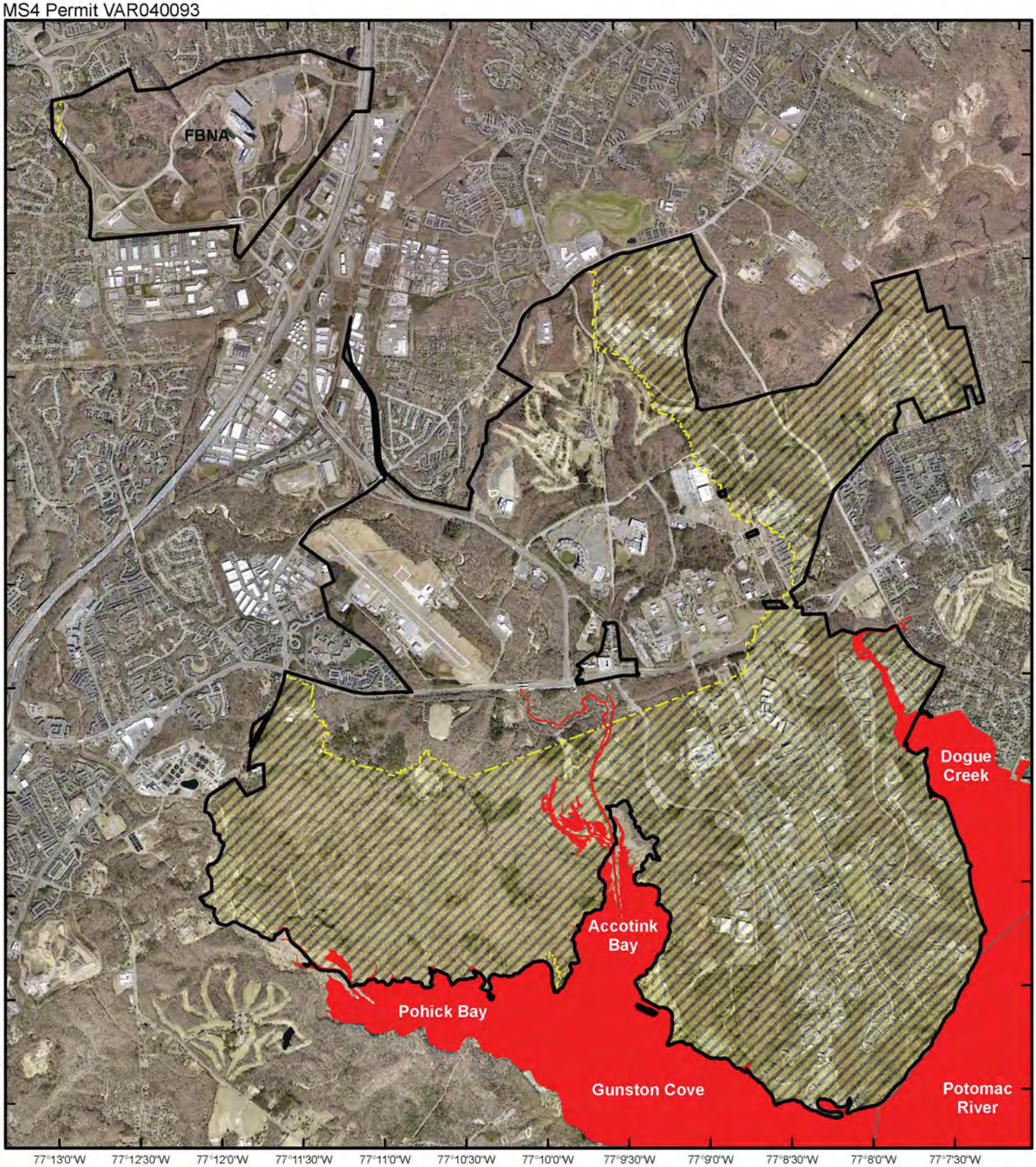

Figure 2:
PCB Impaired Waters and Direct Drainage Area

N

2,800 1,400 0 2,800 5,600 Feet

Legend

- Fort Belvoir Boundaries
- Direct Drainage
- Impaired Water Bodies

Gunston Cove
VAN-A15E_POH01A00
Pohick Creek/Bay
VAN-A15E_POH02A00
VAN-A16E_POH01A06
Accotink Creek/Bay
VAN-A15E_ACO01A06
Dogue Creek
VAN-A14E_DOU0A00

Fort Belvoir 2025 PCB TMDL Action Plan
Sources: Fort Belvoir, USEPA, Fairfax County

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5. PCB CHARACTERISTICS AND FATE AND TRANSPORT

PCB is a commonly used abbreviation of the formal name of a group of synthetic organic chemicals called polychlorinated biphenyls. PCB mixtures are made up of 209 possible congeners that describe a specific molecular configuration of up to 10 chlorine atoms substituted on two benzene rings (ATSDR 2001). PCB congeners with the same number of chlorine atoms are grouped into subcategories referred to as PCB homologs (U.S. EPA, 2012a). Mixtures of PCB congeners were manufactured and sold in the U.S. starting in 1929 under a variety of trade names, the most common being the Aroclor series (U.S. EPA, 2012b).

Between 1929 and 1979, PCBs were used for a variety of purposes but were found primarily in closed systems and heat transfer fluids such as those found in transformers, capacitors, and fluorescent light ballasts. PCBs were also incorporated in some plasticizers as well as hydraulic fluids and lubricants. (Oregon DEQ, 2012). Prior to the regulation of PCBs under the TSCA in 1976, PCBs were released (both accidentally and intentionally) into the atmosphere, water, and land through sewers, smokestacks, stormwater runoff, spills, and direct application to the environment (for example, to reduce dust emissions and to extend the life of some agricultural pesticide formulations) (Flynn, 1997).

Since PCBs do not naturally occur in the environment, PCBs detected in air, water and soil are a result of activities relating to the manufacture, use, and disposal of PCBs. In the past, PCBs have entered the environment during accidental spills and leaks during PCB transporting or from leaks and fires in products containing PCBs. Today, PCBs still enter the environment from a variety of sources including hazardous waste sites, improper industrial or commercial waste disposal, and uncontained leaks from old electrical transformers (ATSDR, 2001).

PCBs have a relatively low vapor pressure that reduces their potential to volatilize. They are also non-polar and therefore are only slightly soluble. This non-polarity and low solubility make PCBs bind strongly to soils and sediment, inhibiting transport from soils to water (groundwater or surface water). PCBs enter surface waters carried by contaminated soil particles via surface water runoff (Oregon DEQ, 2012). Reducing the potential for sediment transport (erosion) at PCB sites greatly reduces the potential for PCB contributions to surface water. Remediated soil or soil with very low levels of contamination can be capped with a clean layer of soil and other materials, such as asphalt. Capping is a common way to isolate contaminated soils and prevents direct contact of surface waters with the PCB contaminated soils, inhibiting transport (VADEQ, 2016).

Without remediation, PCBs can remain in the environment for a very long time because they are very stable and do not readily breakdown. Generally, the more chlorine atoms that the PCBs contain, the more slowly they break down. Although PCBs have a strong affinity for sediment, small amounts of PCBs are released from sediments to water over time, therefore PCBs can also bioaccumulate in fish (ATSDR, 2001). Concerns over bioaccumulation of PCBs in fish led to the development of PCB TMDLs for PCB impaired water bodies.

6. PCB SOURCE ANALYSIS

The first and most integral step taken to properly manage PCBs on Fort Belvoir is identifying the potential sources of PCBs and PCB-containing equipment, which may impact discharges, including locations where PCB wastes may be generated or need clean-up. To complete a source analysis with the goal of identifying all potential sources an assessment of Fort Belvoir included Aerostar looking at the three categories of PCB articles.

1. Closed systems or electrical equipment containing or contaminated by PCBs such as:
    - Transformers, capacitors, circuit breakers, reclosers, voltage regulators, switches, electromagnets, and cables.

2. Partially closed systems containing or contaminated by PCBs:
    - Small capacitors (including light ballasts), fluorescent light assemblies, and other devices that use hydraulic and heat transfer fluids and lubricants.

3. Open applications and uses such as:
    - Paints, sealants, inks, lubricants, flame retardants, insulation, dyes, and pesticides
    - Accidental or intentional releases such as historic spills/leaks where remediation is necessary.

An assessment of these potential sources is provided in the following sections.

6.1. CLOSED APPLICATIONS

At one time, utility equipment such as transformers were the largest source of PCBs on installations. Since the TSCA bans were put in place, many efforts have been made to eliminate all PCB-containing and PCB-contaminated electrical articles. At Fort Belvoir, the electric distribution system was privatized to Dominion Virginia Power (DVP) in 2007 under a contract signed by the Installation and DVP. Under this contract, DVP supplies electricity to Fort Belvoir Main Post and North Area. Since privatization, DVP has made a significant effort to identify and replace PCB containing equipment –DVP maintains an accurate inventory of all DVP owned and operated under their system. As of January 2025, Fort Belvoir has no known remaining PCB items in service or storage on the installation.

PCB transformers must be registered with EPA using form 7720-12. Although not required, PCB transformer owners who have removed and properly disposed of a registered PCB transformer may notify EPA to have their PCB transformer de-registered. EPA maintains a database of all registered transformers to inform the public, interested parties, and emergency personnel of the location and quantity of PCB Transformers. The most recent EPA Database, dated 2019, was reviewed and found that no PCB Transformers registered are located at Fort Belvoir, regardless of ownership.

Based on the findings from this assessment, spills and leaks from this type of equipment is unexpected and unlikely to occur. If at any time, PCB containing equipment is discovered it will be addressed under the *Unanticipated Discovery* process detailed in the Installation PCB Management Plan, dated October 2024, under the TSCA program. If spills or leaks, of any oil including PCB oil, occurs it will be addressed under *Spill Response* protocols set forth in the Installation's current SPCC Plan, dated December 2023 and signed June 2024. Therefore, Aerostar determined that PCBs found in closed applications are not a significant source of pollutants at Fort Belvoir as they have all been removed and replaced with non-PCB equipment.

6.2. PARTIALLY CLOSED APPLICATIONS

DVP also manages much of the equipment that may contain PCBs within this category. Based on interviews completed during development of this plan, Fort Belvoir has no known remaining PCB items in service or storage on the installation.

Light Ballasts that may contain PCBs are the only items that may fall under DPW purview. Although there were no records of a Fort Belvoir wide lighting upgrade project, all these lighting fixtures are past their useful life and have been likely removed and/or retrofitted as a part of regular maintenance activities at the buildings. The installation Base Operations contractor is responsible for all maintenance in buildings. Based on interviews with the contractor, it was noted that many of our technicians recall the "PCB days" and note they have not encountered PCB equipment in many years. Although there are no known PCB light ballasts on Fort Belvoir, personnel receive safety training on what to do if the encounter these items and precautions are taken to identify this equipment prior to any large-scale renovation or building demolition. Technicians are knowledgeable on the topic and aware of processes for notification, containerizing, labeling, and coordinating for disposal if PCB containing equipment is encountered.

Although not expected, the management of PCB containing equipment that may be discovered during renovations and/or demolition of buildings are addressed during the NEPA plan review process and through contract specifications. Contracts which may involve work in buildings built prior to the 1979 PCB ban are required to include specifications for handling of light ballasts and lamps containing PCBs found in The Unified Facilities Guide Specification (UFGS) 02-84-16.

Therefore, it was determined that PCBs found in partially closed applications are not a significant source of pollutants at Fort Belvoir as they have all been likely replaced and contract specifications ensure proper handling and disposal of such equipment off site.

6.3. OPEN APPLICATIONS

PCB use is usually considered to be in transformers and electrical equipment, but one-third to one-fourth of PCB production was for plasticizer applications such as those used in paint and caulk. Common sources of PCBs in buildings include fluorescent light ballasts, old building transformers and capacitors, building and window caulking prior to 1979, some ceiling tiles, floor tile mastics, cloth and paper insulation material, coal-tar enamel coatings, fiberglass insulation, fire-retardant coatings, foam insulation, grout, insulating materials in electric cable, plastics and plasticizers, processed cork materials, ventilation system and window gasket material, roofing and siding materials, paint and thermal insulation used around piping.

Due to its wide use, there is a potential for encountering PCBs from things like grout, caulking, and paint used in structures, historic spills at transformer pads, or PCB impacted soils in open areas or around concrete pads. Therefore, proper management of such materials should be considered during any major renovation to prevent inadvertent contamination of the surrounding areas. Additionally, remediation of known PCB impacted areas is important to mitigate and reduce sediment transport (erosion) at PCB sites greatly reduces the potential for PCB contributions to surface water.

6.3.1. PCBs in Buildings and Structures

Buildings maintained and/or painted between 1955 to 1975 are very suspect for having used PCB-containing materials. There was a known production peak of PCBs for all uses in 1970 and they weren't completely banned from use until 1979 so construction materials with PCBs were still commercially available a few years past the ban. PCBs are most likely to be released from a building during demolition or renovation, so it is particularly important to identify materials that may contain PCBs when planning a demolition or renovation.

Fort Belvoir's Real Property Inventory (RPI) includes land, buildings, and other structures managed by the installation. The RPI list dated January 17, 2023, was reviewed during this assessment and identified 719 buildings and 696 other structures built prior to 1980.

Management of PCBs in construction materials are addressed during the NEPA plan review process and through contract specifications. Preparing for renovation or demolition, The TSCA Program Manager ensures that the building is screened to determine if it contains PCBs in building materials. If PCBs are found or suspected at concentrations of 50 ppm or greater in building materials, abatement is pursued, which means characterizing, removing, and disposing of them in accordance with regulations. The TSCA Program Manager will ensure that all regulated PCB-containing or PCB-contaminated materials are removed from buildings before deconstruction and demolition begin. Contracts which may involve removal and disposal of PCBs, are required to include specifications found in UFGS 02-84-33.

Therefore, it was determined that PCBs found in open applications as building materials are not a significant source of pollutants at Fort Belvoir as there are processing and contract specifications in place which ensure proper handling and disposal of such materials off site.

6.3.2. PCB Storage Areas

PCB Storage areas include buildings, concrete slabs, and other staging areas for transformers and other PCB containing articles. These areas may be sources of PCBs if the soil under the slabs and pads, or under pole-mounted transformers have been impacted due to spills or leaks. Aerostar performed an assessment to identify these areas of concern (AOC) and identified both current and historic PCB storage areas. For each area identified a desktop assessment was performed by reviewing historical documents, photos, and any other information available to determine if PCBs had been managed on site and if so, were there any impacts to the environment that could result in discharges of PCBs to impaired waterways. The sections below summarize the findings of the assessment. Detailed results are presented in Appendix A and Appendix B.

Current Areas Where PCB Articles May be Stored

Two facilities were identified as having the potential for PCB contamination from the storage and management of PCB articles and wastes.

- **Building 1420 – Base Operations Warehouse**
  - Facility may temporarily manage wastes from building maintenance activities
  - Facility has not managed any waste in the past 10 years
  - There are no records of PCBs or PCB containing equipment being managed at the facility
  - There were no records of spills or leaks occurring within the facility
- **Building 1495 – Hazwaste less than 90-day waste consolidation facility**
  - Facility may temporarily manage wastes prior to shipping off-site for disposal

- The facility was completely renovated circa 2015 including foundation, flooring, and shell, no contamination was encountered during renovation activities.
- Records inventory search of wastes managed showed that PCB Wastes have not come though the facility since 2017.
- The facility operated under strict waste management requirements
- There were no records of spills or leaks occurring within the facility since the 2015 renovation
- PCBs that may have been managed at or near building 1495 prior to 2015 are addressed under MP-11 discussed in the following section.

Based on the site assessment and responses to surveys for either facility, these sites have not handled PCB wastes in the last 5 years and there were **no recorded releases that occurred at the site. –** therefore, these buildings would not be a likely source of PCBs and are not further considered in this Action Plan.

Historic PCB Storage Areas

A historic use inventory was conducted in 2012 by Tidewater and resulted in the identification of 11 sites where PCBs had been historically stored, transferred, transported, or spilled in a manner that would have exposed them to precipitation. During the 2016 inventory update, SCF identified three (3) additional sites that were found through field investigations done by installation personnel that may be exposed to precipitation potentially posing risks to human health or the environment. All historical storage areas are managed under the Fort Belvoir Restoration Program in coordination with VADEQ and EPA Region III coordinator, as needed.

As a part of this 2025 update, Aerostar reevaluated all previously identified sites for updated remediation status and to determine their current potential for contributing of PCBs to impaired waters. An additional site, A24a, was added to the inventory based on results from additional investigations and sampling required as a part of closure of site A24. The 15 sites evaluated in this Action Plan are listed in Table 3 below along with the site descriptions, site solid waste management unit (SWMU) IDs, a brief description of known PCB activity at the site, and recommendations for management under this Action Plan. All these sites are considered 'legacy activities' as defined in Part II.B.7.a(2) because, as of January 2025, all activities previously conducted at these sites have been terminated.

Since 2012, the Fort Belvoir has made significant progress in investigating and addressing historic PCB contamination through sampling and implementation of remediation techniques such as the use of capping and/or excavation of contaminated soils. Figure 3 provides a map of the sites in relation to the PCB TMDL direct drainage area along with the site status as of February 2025.

Appendix A details approach for development of the PCB historical use inventory and provides complete site histories, historic sampling data, detailed site maps, and available RCRA closure documentation. Appendix A is broken down by site into the following subsections.

A23: Appendix-A-1	B09: Appendix-A-6	N13: Appendix-A-11
A24: Appendix-A-2	B10: Appendix-A-7	MP11: Appendix-A-12
A24a: Appendix-A-3	L03: Appendix-A-8	MP12: Appendix-A-13
B03: Appendix-A-4	L04: Appendix-A-9	MP13: Appendix-A-14
B04: Appendix-A-5	L47: Appendix-A-10	MP14: Appendix-A-15

A detailed PCB historical use analysis, rubric, and sampling point determination, where applicable, is presented in Appendix B.

Author: Aerostar Environmental and Construction LLC

Date: 3/4/2025

Figure 3:
PCB Source Assessment Findings
Site Locations and Status

N

2,800 1,400 0 2,800 5,600 Feet

Legend

- Fort Belvoir Boundaries
- Major Waterway
- PCB TMDL Direct Drainage Area
- MS4 Service Area - Direct Drainage
- Indoor Storage, No Reportable Release
- No PCBs Detected in Soils
- Impacted Soils Removed, Area Capped
- Area Under Investigation (TSCA)
- Impacted Soils, No Engineered Controls

Fort Belvoir 2025 PCB TMDL Action Plan
Sources: Fort Belvoir, USEPA, Fairfax County

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Table 3: List of Historic PCB Use Sites and Assessment Findings

SWMU IDs	Site Descriptions	Historic PCB Activity	Summary of Source Assessment Findings
A23	Former Coal Storage Area	Transformer storage *One time PCB Spill*	Removal of Impacted Soils, Concrete Cap Installed at site ***No longer a Source – No Further Action***
A24	Former Defense Property Disposal Office (DPDO) Storage Area	Transformer storage *One time PCB Spill*	Removal of Impacted Soils, Vegetated Soil Cap Installed ***Not longer a Source – No Further Action***
A24a	Receiving Channels – from DPDO Storage Yard	Potential residual PCB impacts to receiving stream	**Note:** Site is outside of regulated areas, being investigated under TSCA ***Potential Source, Outside MS4/ISW Permitted Areas - Monitor Investigations and Remediation***
B03	Former BLDG632 Hazardous Waste Storage Area	Storage included PCB contaminated materials	Indoor Storage, Building Demolished ***Not a Source – No Further Action***
B04	Former BLDG633 Hazardous Waste Storage Area	Storage included PCB contaminated materials	Indoor Storage, Building Demolished ***Not a Source – No Further Action***
B09	Former Building 1430 Transformer Storage Area	Transformer storage *Staining observed*	PCBs not detected in soil samples collected, Building Demolished ***Not a Source – No Further Action***
B10	Building 190 Former Indoor Storage Room	Storage included PCB containing equipment	Indoor Storage ***Not a Source – No Further Action***
L03[1]	Former Asphalt Storage Pad near Building 2596	Transformer storage *Staining observed*	PCBs not detected in soil samples collected, Pad Removed ***Not a Source – No Further Action***
L04	Hangar 3126 Former outdoor concrete pad transformer area	Transformer storage *Staining observed*	PCBs not detected in soil samples collected, Pad Removed ***Not a Source – No Further Action***
L47	Former Concrete Pad Transformer Storage Area	Transformer storage *Staining observed*	PCBs not detected in soil samples collected, Pad Removed ***Not a Source – No Further Action***
N13	Building 1490 Hazardous Material Storage Area	Storage included PCB contaminated materials	Indoor Storage, Building Demolished ***Not a Source – No Further Action***

SWMU IDs	Site Descriptions	Historic PCB Activity	Summary of Source Assessment Findings
MP11	Building 1495 Outdoor Transformer Storage Area	Transformer storage *Staining observed*	Removal of Impacted Soils, Repairs to Upstream Drainage Features, Clean-out of Drainage Channels. RCRA Investigation Complete. Continued PCB detection above WQC. ***Known Source – Continue Monitoring and Corrective Actions, as needed, under this 2025 Action Plan***
MP12	249th Motorpool Area Stream Contamination	Discarded barrels found in stream, unknown contents	PCBs not detected in soil samples collected, Drums Removed ***Not a Source – No Further Action***
MP13	Theote Road/Warren Road Wash Yard	PCBs transferred to soils via contaminated wash water	Removal of Impacted Soils, vegetative cover, RCRA Investigation Complete. Continued PCB detection above WQC. ***Known Source – Continue Monitoring and Corrective Actions, as needed under this 2025 Action Plan***
MP14	Building 2476 Former Hazmat Storage Locker	Storage included PCB containing materials	PCBs not detected in soil samples collected ***Not a Source – No Further Action***

[1]Site L03 is located within the HECSA complex which was acquired by the Army Corp of Engineers in 1981 and is therefore no longer accounted for by the Fort Belvoir PCB TMDL Action Plan. L03 is considered a 'legacy' site and will remain within the narrative of the plan to prevent future confusion.

The sections below, summarize findings from investigations of the 15 sites which concluded that:

- Four (4) sites – B03, B04, B10, N13 – previously stored materials that may have contained PCBs. These sites are not considered potential sources of PCBs to impaired waterways as PCB items were kept indoors and were not exposed to precipitation. Therefore, these sites are not considered further in this plan. Additionally:
    - Buildings associated with B03, B04, and N13 have since been demolished.
- Six (6) sites – B09, L03, L04, L47, MP12, MP14 – previously stored PCB containing equipment or materials and staining was observed during initially discovery and identification of the site. Sampling of soils was completed around the sites and PCBs were not detected above the lab detection limit and/or were below EPA soil screening level for PCBs of 0.2 ppm (mg/kg) for residential settings; therefore, these sites are not considered potential sources of PCBs to impaired waterways. Therefore, these sites are not considered further in this plan. Additionally:

- Sites L03, L04, and MP14 are located outside of the direct drainage area where WLA are applicable.
- Sites L47 and MP12 is outside of the MS4 Service Area and not covered under the ISW Permit.
- Pads and buildings associated with B09, L03, L04, L47 have since been demolished and/or removed.
- Drums associated with site MP12 have been removed and disposed of

- Five (5) sites – A23, A24, A24a, MP11, and MP13 – were found to have been impacted by PCBs due to spills, leaks, or other operational issues. Four (4) sites – A23, A24, MP11, and MP13 - have been have had extensive investigations to identify the nature and extent of any PCB contamination. Removal of impacted soils have also occurred at these four sites. Although investigations and remediation of soils have occurred, these sites were further evaluated as a part of the source analysis to determine whether they should be considered significant sources based on their current conditions as of January 2025. One (1) site – A24a – is currently undergoing investigations under TSCA to identify the nature and extent of contamination and determine a path forward for remediation.

  - **A23:** A23 is within the designated direct drainage area where PCB WLA are applicable. Runoff from the site flows south to an unnamed tributary of Gunston Cove. The area was previously covered under the 2017 ISW Permit. Although it falls outside of the MS4 Service Area it will be monitored under the MS4 High-Priority Facility program as required under Part I.6 of the 2025 ISW Permit.

    This site is associated with a release of dielectric transformer coolant that contained PCBs and was reported to US EPA in 1979. Sampling and remediation under the Toxic Substance Control Act (TSCA) was conducted at the site between 1980 and 1982. Remediation involved the removal of concrete, surrounding soils, and sediments from a drainage ditch. Post removal, the site was backfilled with clean fill and covered with a concrete cap. In 2011 samples were taken for the ISW permit application which showed non-detect for PCB constituents at Outfall 007 which receives surface flows from the two drains located at site A23. Additional studies were completed in 2014 and 2015 to determine whether residual PCBs (Aroclor 1260) could impact groundwater and to ensure the integrity of the concrete cap. A land use control was put in place by the Fort Belvoir Restoration Program in 2016 which limits development at this site, enforces excavation restrictions, and requires annual inspection and maintenance of the existing concrete cap.

    - **Conclusion:** A23 has undergone extensive remediation including installation of a concrete cap which prevents exposure of any residual PCBs to precipitation as evidenced by sampling. Therefore, A23 is not considered a significant source of PCBs to impaired waterways and is not considered further in this plan.

      Note: *Although no further actions will be taken under this plan, the cap associated with A23 will be inspected annually for its integrity and ability to mitigate migration of residual PCB contamination (EA, 2016b).*

  - **A24:** A24 is within the designated direct drainage area where PCB WLA are applicable. Runoff from the site flows west to an unnamed tributary of Accotink Bay. The site is located outside of the MS4 Service Area and contains no stormwater infrastructure.

Because the site is located outside of permitted areas it is only managed under Fort Belvoir's Part B Permit for Corrective Action.

This site is associated with a release of dielectric transformer coolant that contained PCBs and was reported to US EPA in 1979. Sampling and remediation under TSCA occurred between 1979 and 1983. Remediation involved the removal of contaminated soil and covering the site with at least two feet of clean earth fill. A Fate and Transport study was conducted in 2013 to determine the potential impacts to groundwater and surface waters due to the residual concentrations of PCBs (Aroclor 1260). The study found that there was little probability of vertical migration to groundwater and that the soil cover and heavily vegetated area acts as a natural cap and restricts runoff of residual PCB affected soils. Based on these results US EPA approved the site for no further action with land use controls (LUCs) in 2014. As a requirement for closure US EPA required that the integrity of the soil cap be assessed and that additional sampling be conducted to determine whether off-site migration had occurred. If any off-site migration was detected then Fort Belvoir would be required to address it, under a separate action, in accordance with applicable regulations.

In 2015 the assessment of the soil cap was completed and concluded that the cover was intact, the site was adequately covered in vegetation, and that there was no evidence of erosion or scouring. LUCs were put in place by the Fort Belvoir Restoration Program in 2016 which limits development at this site, enforces excavation restrictions, and requires annual inspection and maintenance of the existing soil cap.

- **Conclusion:** A24 has undergone extensive remediation including installation of a soil cap which prevents exposure of any residual PCBs to precipitation as evidenced by sampling. Therefore, A24 is not considered a significant source of PCBs to impaired waterways and is not considered further in this plan.

  Note: *Although no further actions will be taken under this plan, the cap associated with A24 will be inspected annually for its integrity and ability to mitigate migration of residual PCB contamination (EA, 2016b).*

- **A24a:** A24a is within the designated direct drainage area where PCB WLA are applicable. Site A24a is defined as an approximately 3,000-foot ephemeral channel west and downgradient of A24 to the Accotink Bay. The site is located outside of the MS4 Service Area and contains no stormwater infrastructure. Because the site is located outside of permitted areas it is only managed under Fort Belvoir's Part B Permit for Corrective Action.

  Per the conditions for closure of site A24; Site A24a was opened following low level PCB detections in the receiving channel during a 2015 study which recommended further evaluation of drainage features located outside of the A24 delineated area. Although limited sampling was completed, it did indicate that there was a potential for off-site migration of PCBs prior to the completion of remediation activities at A24. In 2018 nine (9) samples were collected as a part of an investigation of the 3,000-foot downgradient channel. The samples identified a singular location in the channel, approximately 800 feet from A24, where PCB detections were above the 1 ppm screening level and presented an ecological risk to the benthic macroinvertebrate and aquatic, avian invertivore communities. To address this ecological risk, a hot spot removal action was recommended for the area. Prior to initiation of a hot spot removal action, a pre-

remediation investigation to define the extent of the hot spot removal and establish a cleanup goal had to be completed.

In 2022 a corrective measures study was conducted to obtain data needed to delineate the horizontal and vertical extent of PCB contamination for hotspot soil removal within the channel. The study looked at 10 locations within the hotspot identified in 2018 and found that PCBs in the channel were present at much higher levels than previously identified during the limited sampling conducted in 2015 and 2018. During this effort at least one location was determined to contain PCBs above the 50-ppm threshold triggering TSCA PCB regulatory applicability. In a letter from 2023, US EPA assumes oversight of the remediation efforts at A24a due to the soils meeting the definition of PCB remediation waste under TSCA, where VADEQ does not have regulatory authority.

In 2024, Fort Belvoir continued coordination with US EPA Region III to develop a site characterization plan which included proposed sampling, primarily focused on the hotspot identified as a 200 x 60-foot area of the channel where it is flat (not incised) where deposition was most likely to occur. Although the focus for this effort would be the hotspot, under this characterization sampling would also occur at 100-foot intervals in the channel both east and west of the hotspot, three (3) locations within the wetland portion of the Accotink Bay, and in 12 locations between A24 and the channel. Sampling occurred in November 2024 and as of February 2025, a report of findings was in the process of being drafted.

- **Conclusion:** the site is being investigated under TSCA in coordination with EPA Region III. It is also located downstream of all MS4 and ISW permitted outfalls, so no stormwater characterization sampling is recommended under this TMDL Action Plan. The MS4 Program will monitor progress of ongoing TSCA investigations and remediation of the channel; PCB sampling results for intermittent channel (A24a), a summary of any findings from investigations, and status of any remediation will be included in MS4 Annual Report.

- **MP11:** MP11 is within the designated direct drainage area where PCB WLA are applicable. It flows south to an unnamed tributary of Accotink Bay. The site is located outside of the MS4 Service Area but is within the drainage area for Representative outfall (RO) 005 under the ISW Permit No.VA092771.

  This site is associated with an area used to store PCB-containing transformers within the fenced area for building 1495. Staining from transformer leaks were noted in 2012 when the units were being prepared for disposal. Soil sampling was completed in 2012 and 2013 which confirmed the presence of PCBs. Due to confirmed presence of PCBs in soils on site, MP11 was included in the monitoring plan established in 2013 PCB TMDL Action Plan with the first stormwater characterization sample taken in November 2013.

  In July and August 2014 two separate areas of impacted soils around the building were identified and removed during renovations to building 1495. The northeastern portion of the parking lot and the lot was then asphalted creating a cap over any residual PCBs.

  The Fort Belvoir Restoration Program completed field sampling for a RCRA Facility Investigation (RFI) to determine the nature and extent of PCB contamination at MP11, evaluating if off-site migration of PCBs has occurred, and evaluating potential human health and ecological risk of exposure to PCBs in 2018. All investigations and remediation were done in accordance with the 2015 Fort Belvoir Part B Permit Corrective Action module IV

The study concluded that human health and ecological risks are negligible and recommended the site for No Further Action. On 18 June 2020, Fort Belvoir received a letter for No Further Action or Investigation for MP11 from VADEQ based on anticipated land use.

Although the site has received closure under the RCRA program, it should be noted that sampling methodologies used are different than those procedures outlined in VADEQ's TMDL Guidance Memo No. 14-2004, which are utilized in this Action Plan. Additionally, stormwater sampling continues to exhibit detections above WQC.

While the new asphalt acts as a cap on a portion of the historic spill area and is surrounded by grass, there are drainage channels North, South and Northeast of the site. Two channels are grass lined, impeding the transport of residual PCBs to impaired waters, while the northern channel is concrete lined which would further facilitate sediment transport due to the higher concentrated flow rates. Additionally, Building 1495 is also used as a <90-day hazardous waste storage facility, and due to the presence of solvents PCB migration may be more likely in case of a release. Since PCBs are still being presented in stormwater samples from the site and there are nearby drainage features, continued monitoring is recommended to confirm the downward trend continues.

Conclusion: Even though the site has received No Further Action under RCRA, it has been noted that site characterization under RCRA uses different sampling methodologies that are not directly comparable to those used for PCB TMDL monitoring. Therefore, sampling will continue at MP11 per the sampling plan in Section 7, until the WQC is met for two consecutive sampling events, or another metric is met in coordination with VADEQ. Results from sampling and any identified corrective actions and status will be reported in the MS4 Annual Report. Because this site is within the Drainage area for RO-005, covered by the ISW Permit, a copy of the annual report will also be provided to the VADEQ industrial stormwater program.

- **MP13:** MP13 is within the designated direct drainage area where PCB WLA are applicable. It flows south to an unnamed tributary of Gunston Cove. The site is located outside of the 2020 Census Urban Area but receives drainage from the MS4 via area for Representative outfall (RO) 005 under the ISW Permit No.VA092771.

  PCBs were confirmed at MP13 after Restoration Program conducted an initial site assessment brought upon when stained soils and odor were noted while inspecting an active construction project in 2015. Vehicles and equipment from the construction efforts were being washed within the unpaved area between Warren, Theote, and Marrow roads. The site was fully vegetated with the presence of shrubs, the stockpile locations are still noticeable along Warren Road. The area was being used as a laydown area and wash yard.

  A RCRA facility investigation was conducted in 2018 to determine the limits and extent of contamination and found negligible risk to ecological and human receptors. VADEQ concurred with the findings of this investigation and approved a no further action determination in 2021. This investigation did not include sampling for PCBs as it was eliminated as a contaminant of concern under the RCRA Program since detections in the initial sampling were below all screening levels.

  After the investigation, in March 2019, to address other contaminates in the surface soil MP13, the Directorate of Public Works (DPW) excavated an approximately 149,000 square foot area at the site to a depth of 0.5 feet and removed all stockpiles and

construction debris. Post excavation confirmation sampling was completed which included eight (8) within the footprint of the excavation area with the highest PCB detection of 0.034 mg/kg. Additionally, six (6) soil samples were collected from the stockpiled (bermed) soil prior to disposal, which had a similar detection with a high of 0.03 mg/kg.

Although the site is considered closed under RCRA, it should be noted that sampling methodologies used are different than those procedures outlined in VADEQ's TMDL Guidance Memo No. 14-2004, which are utilized in this Action Plan.

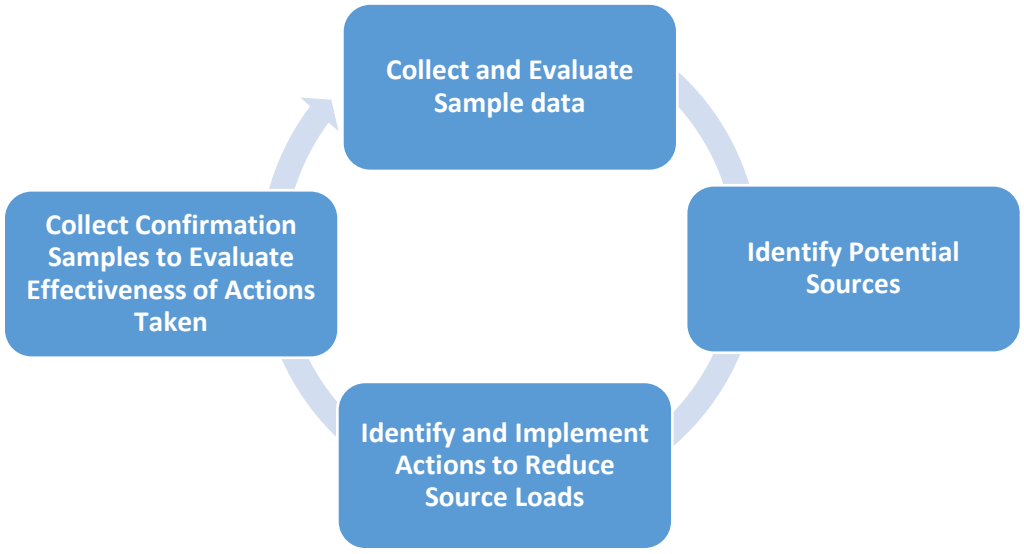
In 2022, a separate investigation was completed of a portion of the site which utilized the same laboratory methods used in this TMDL Action Plan. These results showed PCBs were present in soils at much higher levels with the lowest detection being 0.2 mg/kg and highest being 4.4 mg/kg. Since PCBs are currently being detected in stormwater samples collected above the water quality criteria. There is also a direct stormwater drainage feature onsite, which is a likely pathway to impaired waters therefore, continued monitoring is recommended to confirm the downward trend toward WQC continues.

Conclusion: Even though the site has received No Further Action under RCRA, it has been noted that site characterization under RCRA uses different sampling methodologies that are not directly comparable to those used for PCB TMDL monitoring. Therefore, sampling will continue at MP13 per the sampling plan in Section 7, until the WQC is met for two consecutive sampling events, or another metric is met in coordination with VADEQ. Results from sampling and any identified corrective actions and status will be reported in the MS4 Annual Report.

7. SAMPLING AND ANALYSIS PLAN

The PCB source analysis identified two (2) sites where PCB impacts are known and where monitoring of stormwater runoff should be conducted to demonstrate progress towards meeting the WQC and WLA in the PCB TMDL. These were the only two sites located with the Direct Drainage defined in the PCB TMDL which were found to discharge through an MS4 or ISW Outfall. Although both sites have undergone multiple corrective actions and have had RCRA Investigations and Risk Assessments completed, stormwater sampling has indicted persistent detections of tPCBs above the WQC.

The purpose of the Sampling Plan is to monitor compliance progress towards meeting WQC and WLA in the TMDL and provide data to assist in making decisions as a part of an iterative process designed for long term effectiveness. The iterative process is composed of the following stages:



The cycle should be repeated, as necessary, until discharges are below applicable WQC and WLA or otherwise demonstrates to VADEQ that the sites are no longer a source of PCBs in stormwater discharges that impacts the impaired waterways. Under this Sampling Plan, Stormwater runoff monitoring will continue at sites MP11 and MP13 until the current Virginia WQC for tPCBs based on human health risks (580 ρg/L) are met for at least two sampling events unless otherwise approved by VADEQ.

7.1. SAMPLE LOCATIONS AND FREQUENCIES

PCBs accumulate in fish tissue more slowly than seasonal fluctuations occur, and the increases do not correspond to seasonal variations. As PCBs bio-accumulate over time, annual variations may be considered more important than seasonal variations, particularly if a fish tissue target is used (U.S. EPA, 2011). Therefore, MP11 and MP13 will be sampled **at least once annually** during critical conditions when heavier more intense rain is expected to displace the most sediment; this usually occurs during the summer months but can occur during any season.

As per Part IV.A of the MS4 general permit and Part II.A of the 2025 ISW Permit (Draft), all Samples and measurements taken for the purpose of monitoring shall be representative of the monitoring activity and taken at the permit designated or approved location. Sampling locations for MP11 was initially determined during the development of the 2013 PCB Action Plan. Sampling locations for MP13 was determined during the 2018 PCB Action Plan update.

These four (4) locations have been historically used to monitor these sites and should be maintained throughout implementation of this plan to ensure data obtained can be compared to previous results to assess progress. Therefore, during each sampling event, grab samples will be collected from the two sampling locations at MP11 (ISW-PCB-1495-SW1 and ISW-PCB-1495-SW3) and two locations at MP13 (MS4-PCB-Warren-1 and MS4-PCB-Warren-2).

Table 4 provides a summary of the sampling frequencies and sample location IDs for each site. Figure 4 and Figure 5 provide maps of the sites showing the sampling locations.

Table 4: Summary of Sites Undergoing Monitoring under the 2025 PCB TMDL Action Plan

SWMU IDs	Site Descriptions	Permit	Sample Frequency	Sampling Locations
MP11	Building 1495 Outdoor Transformer Storage Area	ISW Permit VA0092771	Annual	SW-1 and SW-3
MP13	Theote Road/Warren Road Wash Yard	MS4 General Permit VAR040093	Annual	Warren -1 and Warren -2

Figure 4: Sampling Locations at Site MP11 (Former Outdoor Transformer Storage Area at Building 1495)

Figure 5: Sampling Locations at MP13 (Theote Road/Warren Road Wash Yard Area)

7.2. SAMPLE COLLECTION AND ANALYSIS REQUIREMENTS

Both the MS4 and ISW Permits require that monitoring be conducted in accordance to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless otherwise specified. Although the MS4 permit does not provide specifics, VADEQ guidance manual (GM) No. 09-2001 and the ISW details the following for all stormwater monitoring: A minimum of one instantaneous grab sample shall be collected from a storm event that results in a discharge from the site, providing the interval from the preceding measurable storm event is at least 72 hours. Where a grab sample is defined as an individual sample collected in less than 15 minutes. A measurable event shall be determined by field observations and will be documented for each attempted sampling event.

Grab samples shall be collected within the first 30 minutes or as soon thereafter as practical, but not to exceed one hour, of when the runoff or snowmelt begins discharging from the facility. The required 72-hour storm interval can be waived if documentation that less than a 72-hour interval was representative for local storm events during the sampling period. Documentation on each individual sample collected will include a sample ID, outfall identifier, the date and duration of the storm event sampled, the rainfall amount (in inches), and the interval between the storm event sampled and the end of the previous storm event.

Each sample shall consist of a minimum 2-liter volume of unfiltered runoff that is collected into two 1-liter or one 2.5-liter amber glass jar that are certified PCB free and provided by the laboratory completing the analysis. The sampling event will be recorded on a laboratory provided Chain-of-Custody form to accompany all samples from the time of initial generation through delivery to the analytical laboratory. The samples will be placed in a hard-sided shipping cooler, properly preserved on ice, protected from breakage or loss, and shipped to the laboratory completing the analysis immediately following the sampling event.

Analyses performed according to test procedures approved under 40 CFR Part 136 shall be performed by an environmental laboratory certified under regulations adopted by the Department of General Services (1VAC30-45 or 1VAC30-46). Therefore, the samples will be analyzed by a Virginia Environmental Laboratory Accreditation Program (VELAP) certified laboratory included in the VADEQ list of laboratories performing low level PCB congener analysis (Method 1668) (VADEQ, 2012). The samples will be analyzed by EPA Method 1668A for PCB congeners (GM 09-2001). The unadjusted and appropriately qualified individual PCB congener analytical results, laboratory and field QA/QC documentation, and results shall be reported. Total PCBs are to be computed as the summation of the reported, quantified congeners following the procedures outlined in VADEQ's TMDL Guidance Memo No. 14-2004. Table 5 below summarizes the sampling requirements.

Table 5: Summary of Sampling Requirements

Analysis and Method Number	PCBs by EPA Method 1668A*
Preservatives	Chill to ≤6˚C within 15 minutes, but not frozen
Analytical Holding Time	365 days
Sample Volume/ Sample Container	2 x 1 liter ***or*** 1 x 2.5 liter Amber Glass Jar

*****Any equivalent method shall be submitted to DEQ-NRO for review and approval prior to sampling and analysis.

7.3. HISTORIC SAMPLING RESULTS AND RESULTS ACHIEVED FROM CORRECTIVE ACTIONS

In the Tidal Potomac watershed, loads from the regulated NPDES stormwater outfalls were expressed as a single stormwater WLA for each impaired water body, as discussed in Section 4. EPA recognized that available data and information are usually not detailed enough to determine WLAs for NPDES regulated stormwater discharges on an outfall-specific basis. As the stormwater WLAs were calculated for the total direct drainage areas discharging to the impaired bodies EPA recommended that effluent limits should be expressed as Best Management Practices (BMPs) or other similar requirements, rather than as numeric effluent limits (U.S. EPA, 2002).

9VAC25-260-140 lists the current numerical Water Quality Criteria (WQC), effective April 18, 2023, for total PCBs (tPCBs) based on human health risk at 0.00058 ppb or 580 picograms/L (ρg/L). This reflects a drop from the previous acceptable total PCB levels of 640 ρg/L. The WQC represents concentration in the water column where the bioaccumulation of tPCBs in fish is minimized to be protective of fish consumption, by humans. To evaluate the effectiveness of the BMPs implemented through this Action Plan, to meet the WLA for the Tidal Potomac PCB TMDL, individual sample results are compared to the listed WQC.

As described above, The samples collected are used in decision making to determine what and where corrective actions are necessary. Since the original PCB Action Plan was finalized, Fort Belvoir has implemented a monitoring program and associated corrective actions targeting sites where PCB detections in stormwater have occurred. The following sections describe historic sampling, the results achieved through implemented actions, and progress toward meeting WQC.

7.3.1. MP11 - BUILDING 1495 FORMER OUTDOOR TRANSFORMER STORAGE AREA

MP11 was included in the Final PCB TMDL Action Plan dated March 2013 and at that time was recommended for stormwater characterization. Sampling as per the 2013 Action plan began in November 2013 when the first water quality sampling event occurred at MP11 and is used as the baseline in analysis. During each sampling event, grab samples were collected from the two sampling locations, described in Section 7.1. All sampling results are summarized in Table 6. Below is a timeline of sample findings, corrective actions taken, and results.

2014 – Corrective Action: No sampling occurred in 2014 due to the active soil removal and remediation that was occurring as a part of the building 1495 renovations.

2015 – **Sample (April):** After two rounds of soil removal in the vicinity of building 1495, sampling resulted in significantly higher concentrations of PCBs when compared to those in the 2013 baseline. This was attributed to the large amount of soil disturbance due to construction in the area, that would have disturbed subsurface soils impacted by the PCB spill.

2015 – **Sample (September)**: These results showed a dramatic drop after the site had been fully stabilized and the final asphalt cap was in place, which confirmed the effectiveness of the corrective actions implemented in 2014.

2017 – **Sample (February):** These results had detections closer to those seen in 2013. During sampling, it was noted that sediment accumulation was apparent in both in the channel (SW1) and the culvert outlet (SW3). The sediment at these locations may still contain residual PCBs because soil removal done in 2014 did not occur within the stormwater conveyance system.

2018 – **Corrective Actions:** No sampling occurred in 2018 as the site was undergoing investigations under the RCRA Corrective Action Program, to determine the full limits and

extent of contamination, evaluate if off-site migration of PCBs has occurred, and evaluate potential human health and ecological risk of exposure to PCBs. The study concluded that ecological risks are negligible and therefore, there is no need for remediation under the RCRA Program.

Note: sampling under RCRA and stormwater programs differ in EPA analysis methodologies. RCRA samples have higher detection levels and is selective toward PCB Aroclor analysis.

2019 – Sampling (February/March): Results showed that tPCBs were detected below or near WQC bringing some uncertainty to the 2017 increase.

2019 – Corrective Action: In Mid-2019 repairs to upstream channels along Sharon Lane Road began and the project was completed in early 2020. These repairs consisted of regrading channels to increase capacity and prevent runoff from topping the road and lining them with riprap to slow runoff preventing sediment deposition. The uphill ditches were repaired to ensure that the stormwater enters a concrete channel which diverts runoff to the stream on the north side of Building 1495, as opposed to coming downhill towards the impacted areas or allowing for infiltration which was contributing to a groundwater seep on the hill side. It is anticipated that the repairs will restore the downward trajectory of PCBs in stormwater to meet the WQC.

2019– Sampling (November): Sampling occurred at just SW3 (channel on south side) which resulted in a small spike which could be attributed to ongoing uphill work.

2020 – Sampling (April): Sampling occurred at just SW1 (channel on north side) which showed results below WQC, potentially due to the completed project which diverted uphill runoff away from the area.

2021 – Sampling (March/November): Sampling results showed levels of tPCBs at both SW1 and SW3 being above WQC.

2022 – Sampling (April/November): Sampling results showed levels of tPCBs at both SW1 and SW3 being above WQC but at lower level than 2021.

2023 - Sampling (November): Sampling results showed that levels of tPCBs continued to drop, at both locations but particularly at SW1 which dropped below WQC.

2024 – Sampling (N/A): No sampling occurred; multiple visits were made to the site with no discharges noted due to a particularly dry year with little measurable events

2025 – Sampling (January): Sampling showed that detections at SW3 continued to drop towards WQC but there was an extreme spike in detections at SW1. Site inspections in early February showed a trickle flow at the channel (over 72 hours) after the event, indicating that groundwater continues to contribute to discharges at this location.

Based on sampling results since the last round of corrective actions at the site (2020-2025), there have been major fluctuations in tPCB detections as shown on Figure 6. These were not found to directly correlate with rain intensity since both high and low intensity event resulted in spikes. Aside from the spike at SW1 in early 2025 – a downward trend was seen at both sites. Of note:

- SW3 has started to stabilize at approximately 1,000 pg/L. It should be noted that SW3 is earthen channel where soils that may contain residual PCBs may be contributing to loads, corrective actions targeting this channel will be considered.
- SW1 is a concrete channel which would only be impacted by active erosion or potentially the groundwater seep on the hill side, further investigation of this would need to be completed to determine actions that could be taken.

Table 6: Summary of PCB Sampling Completed at MP11

Sample Date	SW1 tPCBs (ρg/L)	SW3 tPCBs (ρg/L)	WQC for tPCBs (ρg/L)
11/27/2013[1]	**4,470**	**910**	640
4/30/2015[1]	**93,100**	**12,300**	640
9/29/2015[1]	**328**	**1,680**	640
2/28/2017	**2,237**	**3,029**	640
2/28/2019	-	**475**	640
3/31/2019	**678**	-	640
11/22/2019	-	**667**	640
4/23/2020	**391**	-	640
3/24/2021	**3,887**	**2,949**	640
10/29/2021	**2,334**	**1,137**	640
4/18/2022	-	**2,816**	640
11/11/2022	**860**	**1,232**	640
11/21/2023	**401**	**1,087**	580
1/31/2025	**5,897**	**942**	580

Results presented are 'censored' data, corrected using method blank using Supplemental to TMDL Guidance Memo 14-2004. Note: Data presented is based on actual spreadsheets and not the summaries for each event, as discrepancies were noted in summaries (i.e. censored vs uncensored results)
[1] Calculations sheets from GM 14-2004 was not available for these events; it is uncertain whether these are censored or uncensored results

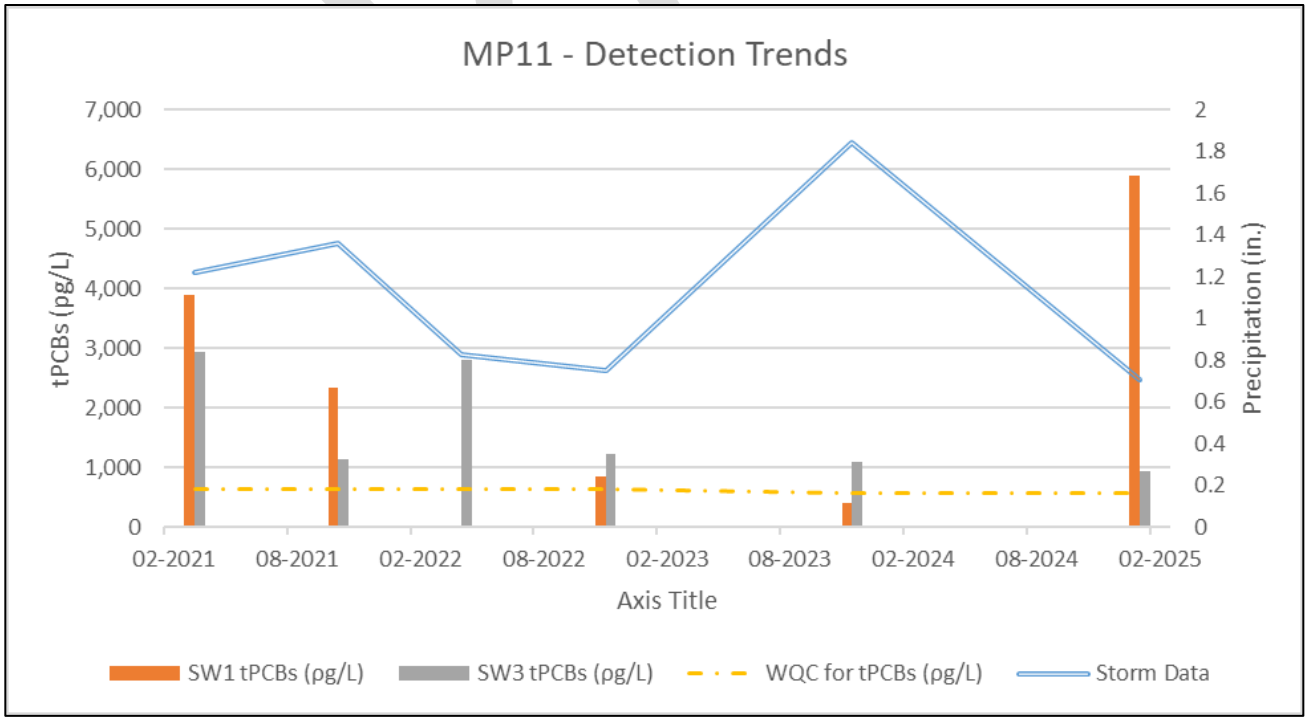


Figure 6: tPCBs Detection Trend at MP11 since Corrective Action

7.3.2. MP13 – WARREN ROAD AND THEOTE ROAD WASH YARD

MP13 was included in the Final PCB TMDL Action Plan dated January 2018 and at that time was recommended for stormwater characterization. Sampling as per the 2018 Action plan began in August 2017, during development of the 2018 plan, when the first water quality sampling event occurred at MP13 and is used as the baseline in analysis. During each sampling event, grab samples were collected from the two sampling locations, described in Section 7.1. All sampling results are summarized in Table 7. Below is a timeline of sample findings, corrective actions taken, and results.

2017 – **Sample (August):** Results showed detections over WQC at Warren-2 and slightly over WQC at Warren-1. It was noted that the outfall pipe for Warren-2 is partially buried which is allowing water to pool and leads to heavy sedimentation buildup. The sediment accumulation at this location may be the reason for substantially higher concentrations leaving the site via the southeastern outfall.

2018 – **Corrective Actions:** No sampling occurred in 2018 as the site was undergoing investigations under the RCRA Corrective Action Program, to determine the full limits and extent of contamination. The study did not sample for PCBs as it was not a as a contaminant of concern under the RCRA Program, but concluded that ecological risks are negligible and therefore, there is no need for remediation under the RCRA Program.

Note: sampling under RCRA and stormwater programs differ in EPA analysis methodologies. RCRA samples have higher detection levels and is selective toward PCB Aroclor analysis.

2019 – Sample (January): Results showed detections over WQC at Warren-2 and below WQC at Warren-1. A similar relationship was seen when compared to 2017, confirming that outfall designated as Warren-2 is discharging the bulk of the impacted sediment offsite.

2019 – **Corrective Actions:** The Restoration Program completed an Interim Soil Removal at the Warren and Theote Road Yard in March 2019. The removal included the disposal of a large soil stockpile at the middle of the site, disposal of concrete debris across the site, and the disposal of the top 6 inches of soil from across the site. Following the removal completed in September 2019, the site was regraded and stabilized to be a fully open grassed recreational area. It was anticipated that the restoration of the site and its vegetative cover will encourage a downward trajectory of PCBs being transported in stormwater towards meeting the WQC.

2020 – **Sampling (May):** Results from samples taken post soil removal, showed a continued decrease in detections at Warren-1 with detections nearing zero (0), although there was a dramatic increase in detections at Warren-2. It was noted that little runoff was seen at warren-1. The increase at Warren-2 was found to be attributed to the recent disturbance to surface and subsurface soils, and the fact the site was not yet fully stabilized.

2021 – **Sampling (October):** Results as Warren-2 saw a significant decrease, although still above WQC, when compared to 2020, potentially attributed to the site being fully stabilized. No sample was taken at Warren-1 due to no flow. Site investigations have shown that the regrading and stabilization of the site has led to less runoff and more infiltration.

2022 – **Sampling (March):** Results at Warren-2 were seen to substantially increase and were found to be comparable to those seen in 2020. The previous high detections were thought to be due to disturbance, but based on this event may indicate that PCB impacted soils may be within the pipe leading to Warren-2 or within the pool itself. No sample was taken at Warren-1 due to no flow.

2022 – Investigation: A limited investigation was completed around the area around Warren-2 sampling point which included soil sampling in the drainage channels prior to the pipe, and a sediment and surface water sample post the outfall discharge point. This sampling was conducted using EPA methodologies equivalent to those used by the stormwater program (1668A) to provide comparable results. This study indicated that soils in the channel on the south side of the site and sediment post outfall had tPCBs detections higher than the EPA screening level of 0.23 mg/kg (0.23 ppm) for total PCBs in residential soils. Soils in the eastern channel were at the screening level. This study may be used to determine where future corrective actions should be prioritized.

2023 – **Sampling (November):** Results at Warren-2 were seen to drop below WQC. It was noted that this storm event produced significantly higher precipitation. This supports the theory that PCB impacted sediment in the pool at Warren-2 may be reflected in samples taken during low flow events where sediment disturbance during collection is more likely. No sample was taken at Warren-1 due to no flow.

2024 – **Sampling (January):** Results at Warren-2 rose above WQC but were magnitudes lower than those seen in 2020 or 2022 (low flow events). It was noted that this storm event produced significantly higher precipitation. This supports the theory that PCB impacted sediment in the pool at Warren-2 may be reflected in samples taken during low flow events where sediment disturbance during collection is more likely. No sample was taken at Warren-1 due to no flow.

2025 – **Sampling (January):** Results at Warren-2 were seen to once again drop below WQC. No sample was taken at Warren-1 due to no flow.

Based on sampling results since the last round of corrective actions at the site (2020-2025), there have been major fluctuations in tPCB detections as shown on Figure 6. These were found to directly correlate with rain intensity with tPCBs spiking when sampling occurs during low precipitant events. A strong downward trend can be seen at Warren-2. Of note:

- Warren-1 has not been sampled since 2020 due to no flow being observed in channel post regrading of the site, although detections at this location were at or below WQC prior.
- Warren-2 has not yet stabilized. It should be noted that earthen channels leading to the outfall and the receiving channel may have soils that contain residual PCBs and are contributing to loads, corrective actions targeting these channels and any accumulation in the pipe itself will be considered.

Table 7: Summary of PCB Sampling Completed at MP13

Sample Date	Warren-1 tPCBs (pg/L)	Warren-2 tPCBs (pg/L)	WQC for tPCBs (pg/L)
8/7/2017	**692**	**2,468**	640
1/24/2019	**495**	**10,456**	640
5/22/2020	**11**	**39,526**	640
10/29/2021	-	**2,421**	640
3/17/2022	-	**34,362**	640
11/21/2023	-	**627**	580
1/9/2024	-	**6,181**	580
1/31/2025	-	**344**	580

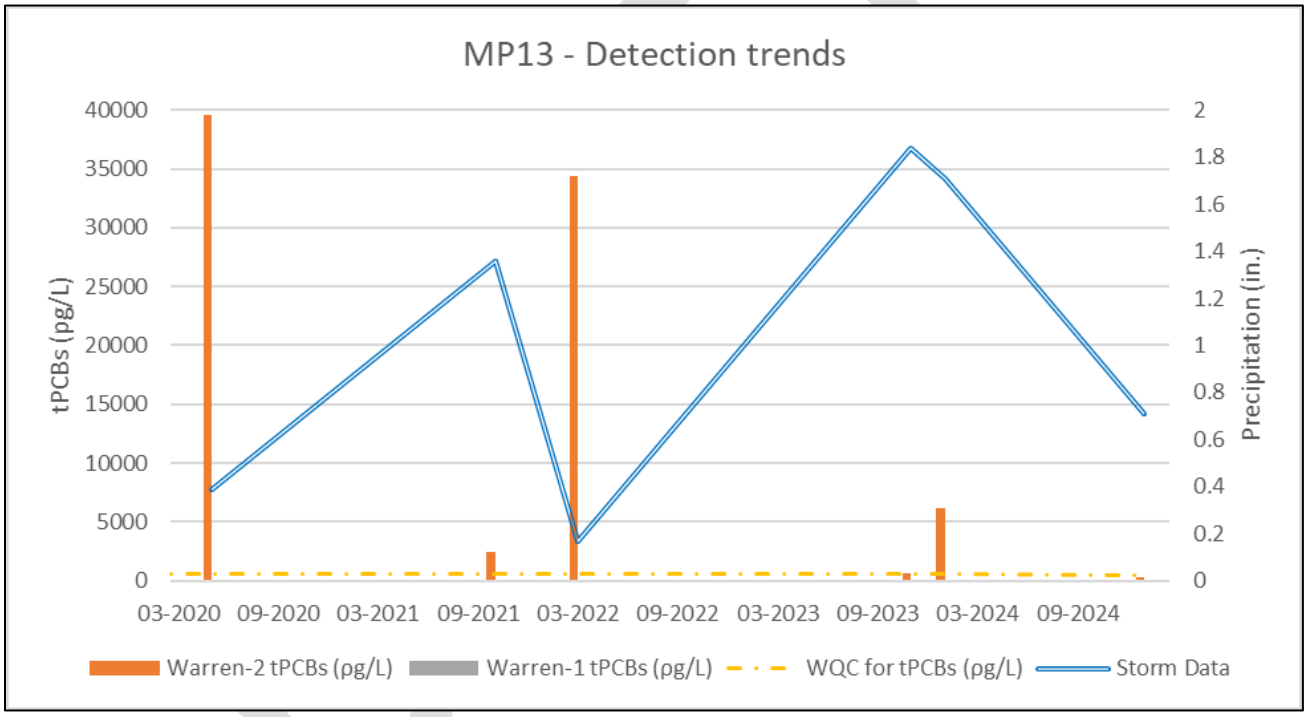


Figure 7: tPCBs Detection Trend at MP13 since Corrective Action

8. BEST MANAGEMENT PRACTICES (BMPS) ANALYSIS AND IMPLEMENTATION PLAN

Guidance Memo 16-2006 requires that existing or new management practices, control techniques, and system design and engineering methods, that have been or will be implemented as part of the MS4 Program Plan to reduce pollutant sources, such as PCBs, be addressed in the Action Plan. The 2023-2028 MS4 general permit Part II.B.1.a. requires an evaluation of the results achieved in the previous action plan and identification of any adaptive management strategies incorporated into the current plan. The sections below provide these assessments.

8.1. EXISTING BMP EVALUATION

The term BMP is commonly used with reference to stormwater when discussing practices that can be implemented to alter quality and/or quantity of stormwater by preventing, controlling, or treating stormwater discharges. The BMP analysis documented below evaluates practices that have been implemented at Fort Belvoir to prevent exposure of PCBs to precipitation and provides recommendations for additional BMPs if they are warranted.

BMPs are commonly organized into two major groups: 1) structural and 2) non-structural practices as exemplified in Table 8. Structural BMPs can be man-made engineering controls or sometimes naturally occurring features such as a wetland. Non-structural BMPs are generally actions that can be taken to influence discharge quality or quantity, usually in the form of operational controls.

Table 8: Examples of Structural and Non-Structural BMPs

Structural BMPs	Non-Structural BMPs
• Infiltration systems • Detention systems • Retention systems • Constructed wetlands • Filtration systems • Vegetated systems • Minimizing directly connected impervious surface • Miscellaneous and vendor-supplied systems, existing oil/water separators, and hydrodynamic devices • Concrete or Soil Caps	• Good Housekeeping o Proper storage and disposal of wastes (automotive, pet, yard, hazardous) o Street Sweeping • Preventative Maintenance: o Regular Inspection o Maintenance Schedules o Road and Ditch Maintenance • Detecting and eliminating illicit discharges • Storm Drain Stenciling • Running educational and outreach programs o Training o Guidance sheets o Brochures

The Exiting BMP analysis is broken up into three sections where BMPs associated and/or implemented through the MS4, ISW, or Restoration Programs were evaluated for their effectiveness and applicability to the PCB TMDL.

8.1.1. EVALUATION OF EXISTING MS4 PROGRAM BMPS

The MS4 permit requires development and implementation of BMPs that address six different categories of practices that influence stormwater management. The Fort Belvoir MS4 Program Plan, Revised June 2024, outlines the BMPs in place for each of the following minimum control measures (MCMs) described in 9VAC25-890-40 Part I.E:

- Public Education and Outreach (BMP 1.1)
- Public Involvement/Participation (BMP 2.1-2.2)
- Illicit Discharge Detection and Elimination (BMP 3.1 – 3.3).
- Construction Site Stormwater Runoff Control (BMP 4.1 – 4.3)
- Post-Construction Stormwater Management in New Development (BMP 5.1 – 5.2)
- Pollution Prevention/Good Housekeeping for Municipal Operations (BMP 6.1 – 6.4)

In addition to the BMPs executed to satisfy the MCMs, the MS4 Program plan incorporates multiple BMPs to meet the special conditions of the permit as per 9VAC-25-890-40 Part I.B and I.C. Table 9 below summarizes the existing Fort Belvoir MS4 Program Plan BMPs which are applicable to addressing PCB concerns, their effectiveness, results achieved during previous action plan implementation and recommendations for addressing PCBs where applicable.

BMPs established under the MS4 program are implemented installation wide, with the intent to reach the entirety of Fort Belvoir's 'Public' defined as "the resident and employee population within the fence line of the facility" which includes all contractors performing short or long-term projects on the installation.

Table 9: Summary of 2024 MS4 Program Plan BMP Evaluation

Existing MS4 Program BMPs		**Evaluation and Recommendations**
Minimum Control Measure #1: Public Education and Outreach on Stormwater Impacts		
BMP 1.1	Implement a Public Education and Outreach Plan	**Evaluation:** the 2024 Program Plan identifies PCBs as a high-priority issue and utilizes various communication media (newspaper, Facebook, email mass notification, fact sheets) and is designed to reach target audiences. **Results Achieved:** During the implementation of previous Action Plan Fort Belvoir developed PCB Fact Sheets and Brochures for distribution to a target audience which includes hunters and fisherman which should be advised of any fishing advisories or may encounter PCB transformers in remote areas of the installation. The information is posted on the iSportsman website where hunters and fisherman must obtain permits and approval for participating in these activities. **Recommendation:** Continue to maintain the most current PCB Fact sheet/brochure developed on the iSportman Page to inform this target audience and provide information on reporting any suspect sources.

Existing MS4 Program BMPs		Evaluation and Recommendations
Minimum Control Measure #2: Public Involvement/Participation		
BMP 2.1	Maintain a webpage dedicated to the MS4 Program and Stormwater Pollution Prevention	**Evaluation:** The MS4 Stormwater Program utilizes the Fort Belvoir Environmental Website to provide public access to all MS4 Program documents required under Part I.E.2.b of the Permit and to elicit for public comment. **Results Achieved:** All approved plans are currently posted to the Fort Belvoir Environmental Documents website for public comment and accessibility, including the most recent PCB TMDL Action Plan and BMP factsheet: PCB Awareness. **Recommendation:** Publish the 2025 PCB TMDL Action Plan for public comment and then upon finalization. Maintain information on the BMP factsheet: PCB Awareness, particularly regarding reporting of suspected PCB sources current, through the annual review and update process.
Minimum Control Measure #3: Illicit Discharge Detection and Elimination		
BMP 3.1	Develop and Maintain an Accurate MS4 Map and Information Table	**Evaluation:** Developing, implementing, updating and supporting GIS data layers provide the opportunity to develop and upkeep a PCB specific GIS data layer. **Results Achieved**: None – layers associated with historical PCB sites are maintained under a different department where MS4 program has no control. But as evidenced in the figures and appendices contained in this 2025 Action Plan, the layers are well maintained and available. **Recommendation:** Coordinate, as needed, with Restoration and Army GIS departments for access to the most recent data on these sites.
BMP 3.3	Maintain and Implement an Illicit Discharge Detection and Elimination (IDDE) Plan	**Evaluation:** The standard methods in place to detect illicit discharges apply to detecting potential PCB contamination. **Results Achieved:** Annual screenings have been successful in identifying pollutant concerns, although none were attributed to PCBs. **Recommendation:** Continue annual screenings under the IDDE Plan.
Minimum Control Measure #6: Pollution Prevention/Good Housekeeping for Municipal Operations		
BMP 6.1	Develop and Maintain Written Procedures for Operations and Maintenance Activities	**Evaluation:** Written Procedures developed under this BMP includes BMP Fact Sheet: PCB Awareness which includes reporting procedures for suspected PCB contamination or equipment.

Existing MS4 Program BMPs		Evaluation and Recommendations
		Results Achieved: BMP Fact Sheet: PCB Awareness has been posted on the Environmental Webpage and distributed audiences including those involved in Operations and Maintenance (O&M) activities. Contract language which includes requirements for proper handling and disposal of PCB articles is incorporated into O&M and/or engineering contracts, as needed. **Recommendation:** Continue to maintain BMP Fact Sheet: PCB Awareness , particularly regarding reporting of suspected PCB sources current, through the annual review and update process.
BMP 6.2	Develop and Implement Stormwater Pollution Prevention Plans (SWPPP)	**Evaluation:** This involves evaluating facilities for processes effecting stormwater runoff, including past and present PCB spills. **Results Achieved:** None – Assessment for high-priority facilities within the MS4 Service area have not identified anywhere past or present use of PCBs may be a source of pollutants. **Recommendation:** Include PCB fact sheets in MS4 SWPPPs for new high priority facilities where past and present PCB contamination is determined to be a source of pollutants to waterways.
BMP 6.4	Revise and Implement Written Training Plan	**Evaluation:** The current Training Plan includes PCB TMDL information in training materials that provide opportunities to increase awareness of PCB sources, hazards, and reporting procedures at Fort Belvoir. One of the target audiences identified in the Training Plan includes *Employees working in and around maintenance, public works, or recreational facilities.* **Results Achieved:** The MS4 training program has been successful in bringing awareness to PCB as a pollutant source, to those responsible for operation, maintenance, of construction activities where there is a chance to encounter PCB articles. Greater awareness of the issue by staff presents opportunities for better management of any potential sources encountered. **Recommendation:** Continue administering a Training Program which incorporates information pertinent to the PCB TMDL
PCB TMDL for the Potomac River		
PCB.1	Distribute Educational Materials about PCBs	**Evaluation:** PCB fact sheets and brochures have been produced to include basic information on PCBs, their hazards, identification of PCB containing equipment, and reporting procedures. **Results Achieved:** During the implementation of previous Action Plan Fort Belvoir developed PCB Fact Sheets and Brochures for

Existing MS4 Program BMPs		Evaluation and Recommendations
		distribution to a target audience which includes hunters and fisherman which should be advised of any fishing advisories or may encounter PCB transformers in remote areas of the installation. The information is posted on the iSportsman website where hunters and fisherman must obtain permits and approval for participating in these activities. The MS4 Stormwater Program also utilizes the Fort Belvoir Environmental Website to provide public access to all MS4 Program documents including all approved plans for public comment and accessibility, including the most recent PCB TMDL Action Plan and BMP factsheet: PCB Awareness. **Recommendation:** Maintain information on the PCB Brochure and BMP factsheet: PCB Awareness, particularly regarding reporting of suspected PCB sources current, through the annual review and update process. Continue to maintain the most current PCB Fact sheet/brochure developed on the iSportman and Environmental Page to inform target audiences and provide information on reporting any suspect sources.
PCB.2	Implement PCB Sampling Plan	**Evaluation:** This and previous PCB Action Plans include a sampling plan for sites requiring monitoring or stormwater characterization due to known historic PCB contamination. Additionally, this BMP calls for the MS4 Program to monitor efforts under the Restoration Program which may identify and/or remediate historic contamination. The Sampling plan it meant to be an iterative process designed for long term effectiveness. The plan is composed of the following stages: Collect sample, evaluate data, identify actions, implement actions, collect confirmation samples, evaluate effectiveness, repeat as necessary until discharges are below applicable water quality criteria (WQC). **Results Achieved:** As detailed in Section 8 of this 2025 Action Plan, sampling has allowed Fort Belvoir to directly quantify discharges from facilities and has used that data to identify corrective actions to minimize or eliminate historic PCB contamination as a source at each site. Although WQC goals have not been reached, downward trends have been seen due to implemented Corrective Actions. **Recommendation:** Continue to implement the iterative process of the sampling plan, until WQC is reached at both MP11 and MP13. Monitor TSCA investigation of site A24a. Report progress and any action taken in MS4 annual report.

Existing MS4 Program BMPs		Evaluation and Recommendations
PCB. MP13	Maintain Vegetative Cap at Historical PCB Site MP-13	**Evaluation:** Current BMP calls for periodic windshield inspections to inspect the site for erosion and bare areas and address as an illicit discharge. **Results Achieved:** None – Windshield inspections have not identified any signs of erosion or bare areas since the soil removal project was completed and the site stabilized. Due to the infrequent use of the site and the fact that full stabilization has been achieved so no impacts to the vegetative cap are expected aside from active development of the area which would utilize heavy machinery. **Recommendation:** Utilize the NEPA project review process to analyze projects that may impact the vegetive cap. Provide project specific requirements, as needed, to minimize or eliminate PCB contaminated runoff from the site. See Revised 2025 BMPs in Section 7.2.

8.1.2. EVALUATION OF EXISTING ISW PROGRAM BMPS

The ISW Major Permit (VA0092771), effective 1 January 2017, detailed the conditions and requirements for the management of industrial stormwater from 32 Representative Outfalls (RO) and their associated drainage areas across the installation. In this 2025 Action Plan update, as mentioned in Section 1, changes due to the reissuance of the 2025 ISW Permit, expected in April 2025 was considered. Although major changes in the 2025 ISW Permit resulted in the removal and transfer of regulatory requirements for some sites to installation's MS4 permit (VAR040093), none of the sites transferred affected implementation of this Action Plan, since RO-005 which covers discharges from site MP11 was retained.

The ISW permit sets general requirements, applicable to all outfalls, which may be considered BMPs in regard to this PCB Action Plan. In addition to the general requirements, a Stormwater Pollution Prevention Plan (SWPPP) is implemented for each facility. The SWPPP is intended to document the selection, design, and installation of control measures, including BMPs to eliminate or reduce the pollutants in all stormwater discharges from the facility and to meet applicable water quality standards (VADEQ, 2016).

BMPs established under the ISW program are implemented at specific sites, associated with seven (7) RO that were retained after the reissuance (based on Draft Permit). As shown in Figure 1, this includes:

- RO-002 (Davison Army Airfield – East)
- RO-003 (Davison Army Airfield – South)
- RO-005 (HazWaste Facility - <90 days) i.e. Building 1495
- RO-012 (Mosby Reserve Center)
- RO-016 (Dogue Creek Marina)
- RO-022 (300 Area – Marina)
- RO-034 (Meade Road Contractor Lot)

As noted in the PCB source analysis in Section 6, only one (1) of these permitted ISW outfalls, RO-005, was identified as being downstream of a historical PCB contamination site. Table 10 below summarizes the ISW Permit required BMPs that directly address PCB concerns and provides recommendations for addressing PCBs at ISW permitted facilities, where applicable.

Table 10: Summary of 2025 (Draft) ISW Permit BMP Evaluation

ISW Permit Requirements for BMPs		Evaluation and Recommendations
General Permit Requirements – Applicable to All Representative Outfalls		
Part I A.1 – A.7	Semi-Annual Monitoring	**Evaluation:** No PCB sampling is required as a part of the Semi-annual monitoring for the 7 outfalls. **Recommendation:** None
Part I C.2	Material Handling/Storage	**Evaluation:** This BMP requires the proper handling, storage, and disposal of materials and waste. Details for handling of PCB wastes can be found the Fort Belvoir 2023 Hazardous Waste Management and Minimization Plan (HWMMP) **Recommendation:** Include material handling and storage requirements, consistent with the current HWMMP, in the facility SWPPPs, training slides, and fact sheets.
Part I C.8	Polychlorinated Biphenyls (PCB) Monitoring	**Evaluation:** This requires that Fort Belvoir collect one (1) sample for PCBs at SW1 (Solid Waste Management Unit MP11), SW2 (Solid Waste Management Unit MP11), Warren-1 (Solid Waste Management Unit MP13), Warren-2 (Solid Waste Management Unit MP13), RO-016, and RO-022 during the fourth year of the permit term. Data should be submitted with the next application for reissuance. **Recommendation:** Ensure Sampling Plan contained in this 2025 Action Plan aligns with requirements for sampling and analysis found in the Permit.
Part I C.9	PCB Annual Report	**Evaluation:** This requires that Fort Belvoir submit to DEQ no later than October 1 of each year (beginning in 2025) an annual report providing the results of any sampling conducted at SW1, SW2, Warren-1, and Warren-2 and the status on the implementation of the PCB TMDL Action Plan to reduce loadings for the pollutant of concern below the Waste Load Allocation. **Recommendation:** Ensure the annual report developed to fulfill the requirements of the MS4 permit satisfies these requirements.
Part III D	Stormwater Pollution Prevention Plans (SWPPP)	**Evaluation:** This involves evaluating facilities for processes effecting stormwater runoff, including past and present PCB spills. **Recommendation:** Identify PCB as a Potential Pollutant Sources, as appropriate, Incorporate PCB TMDL Action plan

ISW Permit Requirements for BMPs		Evaluation and Recommendations
		requirements into facility SWPPPs; Include PCB fact sheets where historical PCB contamination is known.
Facility SWPPP Requirements – Applicable to All Representative Outfalls		
Part III D.2.d (2)(a)	Good Housekeeping	**Evaluation:** This requires keeping a clean facility and performing routine inspections for leaks and conditions of drums, tanks and containers that may hold PCBs. **Recommendation:** None.
Part III D.2.d (2)(b)	Eliminating and Minimizing Exposure	**Evaluation:** This involves conducting operations in a manner to prevent exposure to rain, snow, snowmelt, and runoff; including the storage of PCB containing materials and equipment. **Recommendation:** Ensure operations including storage of PCB containing materials and equipment occur inside and/or under cover.
Part III D.2.d (2)(d)	Spill Prevention and Response	**Evaluation:** Standard spill response preparedness would help prevent future potential PCB contributions by ensuring that in the event of a potential future PCB spill, the spill would be reported and cleaned up in a timely manner to reduce the chance of exposure to precipitation. **Recommendation:** Include Spill Response Procedures in Facility SWPPPs and annual training.
Part III C.2.d (2)(g)	Employee Training	**Evaluation:** Training covers the components and goals of the SWPPP, and include such topics as spill response, good housekeeping, material management practices, control measure operation and maintenance. **Recommendation:** Include PCB TMDL, reporting and proper handling, storage and disposal of PCB containing equipment in annual training.
Part III D.2.d (2)(h)	Sediment and Erosion Control	**Evaluation:** Since erosion of soils, impacted by PCBs, is known to be the main contributor of PCBs in discharges, this is likely to be the most effective form of corrective actions at historically impacted PCB sites. **Recommendation:** Utilize monitoring information from the implementation of the Sampling Plan in Section 8 to identify and implement structural, vegetative, and stabilization control measures to prevent or control on-site and off-site erosion and sedimentation.
Part III C.2.e	Routine Facility Inspections	**Evaluation:** Quarterly inspections conducted by the facilities allows opportunities to identify sources for PCBs and/or erosion issues at a facility. **Recommendation:** Ensure inspections are completed and special attention is given to assessment sediment deposition at known PCB impacted areas (MP11)

8.1.3. EVALUATION OF EXISTING SITE SPECIFIC BMPS

The most common BMPs at past and present PCBs sites at Fort Belvoir include site remediation in the form of soil removal, installation of a cap (vegetated or concrete) over area, and annual inspections of cap. As discussed in Section 6, of the 15 historic PCB storage sites evaluated in this plan, 10 of them were determined to have to no impact to the environment and are therefore not considered sources of PCBs.

Five (5) sites – A23, A24, A24a, MP11, and MP13 – have undergone investigations, remediation, and/or corrective actions to address potential PCB concerns. This section analyzes the site specific BMPs currently in use at each of these sites. Table 11 provides a summary of this analysis with BMPs distinguished as structural or non-structural. Following each analysis, a conclusion is provided establishing if the existing BMPs are sufficient to address PCB concerns or not. If not sufficient, recommendations are made for site specific BMPs.

Table 11: Summary of Site-Specific BMPs at Historic PCB Spill Sites

Structural BMPs	Non-Structural BMPs	Evaluation and Recommendations
A23 - Former Coal Storage Area		
• ***Concrete cap*** exists where historical PCB spill occurred. • ***Concrete berm*** separates the capped area from the wooded stream to the east.	• Extensive remediation • Annual cap inspections • No operations occur at the site	**Evaluation**: Existing BMPs are sufficient. **Recommendation:** No additional site specific BMPs recommended.
A24 - Former DPDO Storage Area		
• ***Heavy natural vegetation*** with thick brush and mature trees within fence line of the site preventing soil erosion/PCB migration. • ***Soil cap*** exists where historical PCB spill occurred.	• Extensive remediation • Annual cap inspections • No operations occur at the site	**Evaluation**: Existing BMPs are sufficient. **Recommendation:** No additional site specific BMPs recommended.
A24a - Receiving Channels – from DPDO Storage Yard		
• ***None*** – Instream sediment has been identified as a potential concern	• Area is being investigated under TSCA in coordination with EPA to determine PCB impacts	**Evaluation:** Extent of PCB contamination is currently unknown **Recommendation:** monitor progress of investigations and report any implications of findings in the MS4 annual report

Structural BMPs	Non-Structural BMPs	Evaluation and Recommendations
MP11 - Former Building 1495 Outdoor Transformer Storage Area		
• ***Asphalt cap*** exists over a portion of where historical PCB ***spill*** occurred. • ***Diversion*** of stormwater flows from uphill areas to a stream running on the north side of the site prevents disturbance of the site.	• ***Weekly Inspections*** by Hazwaste Program • Annual training and evaluation Facility operating records • ***PCB monitoring*** as per Section 8 of this 2025 PCB Action Plan	**Evaluation**: Stormwater samples continue to detect PCBs above WQC **Recommendation:** No additional site specific BMPs recommended at this time. Continue monitoring of stormwater discharges and implementation iterative corrective actions, as needed, until WQC is met for two consecutive sampling events
MP13 - Theote Road/Warren Road Wash Yard		
• ***Soil Removal*** was completed and the top 6' of soil was removed and disposed of in March of 2019. • ***Vegetated Cap*** was used to stabilize the site after soil removal and regrading.	• No operations occur at the site • ***PCB monitoring*** as per Section 8 of this 2025 PCB Action Plan	**Evaluation**: Stormwater samples continue to detect PCBs above WQC **Recommendation:** Perform cleanout of outlet pipe and possible area downstream of sample point Warren-2. Continue monitoring of stormwater discharges and implementation iterative corrective actions, as needed, until WQC is met for two consecutive sampling events.

8.2. NEW/REVISED BMPS FOR IMPLEMENTATION OF THE 2025 ACTION PLAN

After completing an updated source analysis and evaluating the existing practices and results achieved through the implement of the previous Action Plan, the following BMPs were updated to reflect how Fort Belvoir

BMP ID	BMP Description	Implementation and Reporting Schedule
PCB.1	DISTRIBUTE EDUCATIONAL MATERIALS ABOUT PCBS Continue Education and Outreach Program to increase awareness and understanding of BMPs among organizations and communities at Fort Belvoir.	During the implementation of previous Action Plan Fort Belvoir developed PCB Fact Sheets and Brochures include basic information on PCBs, their hazards, identification of PCB containing equipment, and reporting procedures. Training slides on the PCB TMDL have been developed, highlighting identification and reporting of possible PCB leaks, and have been incorporated into MS4 and ISW training slides. **Implementation:** PCB brochures will be distributed target audiences which includes hunters and fisherman which should be advised of any fishing advisories or may encounter PCB transformers in remote areas of the installation. The information will continue to be posted on the iSportsman website where hunters and fisherman must obtain permits and approval for participating in these activities. BMP Fact Sheets: PCB Awareness will be included in all facility SWPPPs and continue to be posted to the Fort Belvoir Environmental Website to provide for public access. Training slides on the PCB TMDL will continue to be presented **Measurable Goal:** Annually review brochure, factsheet, and training slides for necessary changes and updates. Post any revisions to the iSportsman and Environmental Webpage. Update Appendix E with any revised or new educational materials developed **Reporting:** Provide a narrative on any revisions made to educational materials. Provide confirmation that up-to-date materials are posted, distributed, or used in training sessions, as appropriate.

BMP ID	BMP Description	Implementation and Reporting Schedule
PCB.2	IMPLEMENT PCB SAMPLING PLAN Continue monitoring of sites until WQC is met for all sites impacted by PCBs including sites MP11, MP13.	The PCB Sampling Plan was developed as a part of this Action Plan and is provided in Section 8. **Implementation:** Continue to implement the iterative process of the sampling plan, until WQC is reached at both MP11 and MP13. Monitor TSCA investigation of site A24a. The Sampling Plan is meant to be an iterative process designed for long term effectiveness. The plan is composed of the following stages: Collect sample, evaluate data, identify actions, implement actions, collect confirmation samples, evaluate effectiveness, repeat as necessary until discharges are below applicable water quality criteria (WQC). **Measurable Goal:** The Sampling Plan will be implemented throughout the 5-year MS4 permit cycle and will include at least one sample for tPCBs per year at the identified sample locations where discharges occur. Use data to identify corrective actions, as needed. **Reporting:** Provide a summary of results from annual sampling completed at MP11 and MP13 (SW1, SW2, Warren-1, and Warren-2) and progress towards meeting WQC. Provide a summary of any corrective actions identified and/or taken to minimize or eliminate discharges of PCB and the status of implementation. Provide a status of TSCA investigations at site A24a and any progress toward remediation.

BMP ID	BMP Description	Implementation and Reporting Schedule
PCB. MP13	MAINTAIN A VEGETATIVE CAP AT HISTORICAL PCB SITE MP-13 Utilize the NEPA process to analyze projects that may impact the PCB cap.	Soil removal project was completed at the site in 2019, and the site has been fully stabilized. Due to the infrequent use of the site and the fact that full stabilization has been achieved so no impacts to the vegetative cap are expected aside from active development of the area which would utilize heavy machinery. **Implementation:** Utilize the NEPA project review process to analyze projects that may impact the vegetive cap. Provide project specific requirements, as needed, to minimize or eliminate PCB contaminated runoff from the site. **Measurable Goal:** Review all proposed projects for impacts that may occur within the footprint of MP13. **Reporting:** Provide a summary of projects, if any, that are proposed within the footprint for MP13 along with actions to be taken during the project to prevent PCB contaminated runoff.

9. REPORTING

Implementing this action plan supports Fort Belvoir compliance with the PCB TMDL requirements applicable to the MS4 General Permit VAR040093. Per Part I.D.5 and Part II.B of the 2023-2028 MS4 General Permit, the MS4 Annual Report will include:

- Status on the implementation of the BMPs presented in Section 8.2 of this Action Plan including revisions to the plan.
- Evaluation of the BMPs listed in Section 8.2 for their effectiveness in meeting water quality standards
- The results of any monitoring conducted as a part of the PCB Sampling Plan or by the Restoration Program as a part of remediation efforts
- Any Corrective Actions identified for sites being monitored and the status of implementation.
- Update to TSCA site investigation and/or remediation status for site A24

In addition, Part II.B.7.b. of the 2023-2028 MS4 General Permit requires that:

> *If at any time during the term of this permit, the permittee discovers a previously unidentified significant source of PCBs within the permittee's MS4 regulated service area, the permittee shall notify DEQ in writing within **30 days** of discovery.*

The 2025 ISW Permit (Draft) also requires submittal on a PCB Annual Report, no later than October 1 of each year (beginning in 2025) covering the previous year from July 1 to June 30, which provides:

> *the results of any sampling conducted at SW1, SW2, Warren-1, and Warren-2 and the status on the implementation of the PCB TMDL Action Plan to reduce loadings for the pollutant of concern below the Waste Load Allocation.*

Condition Part I.C.9 allows that for this requirement to be fulfilled by reports completed under the MS4 Permit. Therefore, copies or excerpts of the MS4 Annual Report will be submitted to the VADEQ Industrial Stormwater Program annually.

In addition to the annual reporting completed through the MS4 program, all sample results for MP11, the Building 1495 PCB site originally associated with ISW RO-005 will be moved to the MS4 Permit with the reissuance of the 2025 ISW Permit.

The submittal of all results shall include the unadjusted and appropriately qualified individual PCB congener analytical results and laboratory and field QA/QC documentation. Total PCBs are to be computed as the summation of the reported, quantified congeners as per guidance memo 14-2004. The results of all sampling completed during the initial five-year term of the ISW Permit were submitted to VADEQ along with an updated version of this plan on 30 June 2021. The current ISW Permit expired on 31 December 2021 but has been administratively continued until Fort Belvoir receives the new ISW Permit. In addition, reporting requirements for the ISW will continue per the ISW factsheet. Sampling and analysis will be conducted in accordance with requirements specified below.

- Monitoring and analysis shall be conducted in accordance with the most current version of the EPA Method 1668 or other equivalent methods capable of providing low-detection level, congener specific results (all 209 congeners). PCB data generated using Method 1668 revisions A, B C are acceptable however data using version A is preferred.

- Any equivalent method shall be submitted to the DEQ for review and approval prior to sampling and analysis. It is the responsibility of the permittee to ensure that proper QA/QC protocols are followed during the sample gathering and analytical procedures.
- The permittee shall collect 1 sample from each of the above locations and outfalls during the fourth year of the permit term.
- The data shall be submitted to the DEQ electronically with the next application for reissuance which is due at least 180 days prior to the expiration date.

10. PUBLIC COMMENT

Part II B.9 of the General Permit requires that Fort Belvoir provides an opportunity for receipt and consideration of public comment regarding the proposed actions to meet the local TMDL for no less than 15 days. The EPA states in Federal Register Volume 64, No. 235, page 68,750 on 8 December 1999, regarding "public" and its applicability to MS4 programs, the following:

> *"EPA agrees with the suggested interpretation of 'public' for DOD facilities as 'the resident and employee population within the fence line of the facility.' The department recommends that nontraditional MS4 operators, such as state and federal entities and local school districts, utilize this statement as guidance when determining their applicable 'public' for compliance with this permit."*

Therefore, Fort Belvoir has adopted this definition and defines the "public" as anyone who lives or works within the jurisdictional boundary of the Garrison as shown in Figure 1.

The PCB TMDL Action Plan was originally developed by Fort Belvoir in March 2013 and later updated in 2016 to account for requirements under the Individual VPDES Industrial Stormwater (ISW) Major Permit (VA0092771). In 2020 additional updates were made as required by the 2018-2023 MS4 General Permi. The 2020 Update to the PCB TMDL Action Plan, finalized in March 2020, the public comment period involved the posting of the Draft plan on the Fort Belvoir Home Page under Environmental Documents for Stormwater (http://www.belvoir.army.mil/environdocs.asp) on 16 March 2020. A Notice of Availability for the document was:

- Posted on the main Fort Belvoir Facebook page on 16 and 18 March 2020.
- Published in the Fort Belvoir newspaper, The Belvoir Eagle, which is available in print and online at http://www.belvoireagleonline.com on 19 March and 9 April 2020.

Fort Belvoir provided for the public comment period to be open until 15 April 2020 allowing for at least 15 days for public comment as required under Part II.A.12. Fort Belvoir DPW did not receive any comments during this period therefore, this is the only section updated prior to submittal of the Final 2020 PCB TMDL Action Plan to VADEQ due on 28 April 2020.

For the 2023 Update to the PCB TMDL Action Plan, finalized in August 2023, the public comment period involved the posting of the Draft plan on the Fort Belvoir Home Page under Environmental Documents for Stormwater (http://www.belvoir.army.mil/environdocs.asp) on 24 July 2023. A Notice of Availability for the document was additionally posted on the main Fort Belvoir Facebook page on 28 July 2023.

This 2025 PCB TMDL Action Plan for the Tidal Potomac was updated to include an evaluation of the previous plan as required by Part II.B.2 of the 2023-2028 MS4 Permit. The Draft Action Plan was posted for public comment on the Fort Belvoir Home Page under Environmental Documents for Stormwater in [Month] 2025 with A Notice of Availability on [Date] 2025.

Fort Belvoir provided for the public comment period to be open until 31 April 2025 and formally addressed the [number] comments received in this Final Bacteria TMDL Action Plan. Table 12 below summarized the comments received and how they were addressed, further details are available upon request.

Table 12. Public Comments on Draft 2025 PCB TMDL Action Plan

Comment	Response

[number] comments were received during this comment period and [formally responded to] therefore, the plan was finalized. The Final 2025 PCB Action Plan will continue to be available on the public facing website throughout the permit term, allowing for the public to submit comments at any point in time. If any comments are received, Fort Belvoir will evaluate the need for updating the plan and provide a formal response to the commenter. Any comments received and changes made in the plan will be reported in the MS4 annual status report as required under Part II.D.5.

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APPENDIX A:
DETAILED DEVELOPMENT OF HISTORICAL PCB USE INVENTORY

DEVELOPMENT OF HISTORICAL USE INVENTORY

Ine the 2013 PCB TMDL Plan, Tidewater completed the initial inventory of sites where PCBs are currently or have been historically stored, transferred, transported, or spilled in a manner that would expose it to precipitation. The following steps were taken:

1. Several lists of sites were provided by the Fort Belvoir DPW-ENRD. Tidewater collected the various lists and compared them for consistency. This concluded in the identification of 10 original sites known or thought to have managed PCBs.
2. A site walk for outfall reconnaissance inventory was completed on November 5, 2012, for 10 sites identified in Step 1. During the reconnaissance, notes were taken regarding each site's status, pictures were taken, and proximity of each site to an outfall to surface waters was reviewed.
3. An internet search for "PCB and Fort Belvoir" was completed to recover any other sources referencing PCBs at Fort Belvoir to ensure the list of sites provided by DPW-ENRD was comprehensive. This search results in finding of two reports:
    - A 1994 GAO report was recovered that highlights the need for DOD to better identify and monitor equipment containing PCBs (GAO, 1994), and
    - Fairfax County Comprehensive Plan, 2011 Edition Springfield Planning District, Area IV which noted the presence of three (3) PCB transformers in the predeveloped area now associated with Fort Belvoir North Area.

    Neither report resulted in the identification of any additional sites.
4. The Fairfax County Planning department was contacted to follow up on a PCB site reference recovered during the internet search. Fairfax county personnel were unable to provide additional details on the notation from the 2011 plan and were unsure of its existence or if it has been dealt with in conjunction with redevelopment of the area. Therefore, no additional sites were added to the inventory
5. Information was requested and received from Virginia Department of Environmental Quality (VDEQ) regarding a site referenced in the Potomac River Watershed PCB TMDL Study Report. A review of the information found that the sites were already captured as the 10 identified in step 1, although site N13 was also mentioned in an email and was therefore added for consideration.

In 2018, SES Construction and Fuel Services (SCF) completed updates to the 2013 plan which included a full review of all previous historical use inventories. SCF took the following steps

1. A review of the status of all relevant sites identified in the 2013 Plan with special consideration given to any additional remediation completed at each site. During this review an additional three (3) sites, discovered between 2012 and 2018, were identified and added into the historical use analysis.
2. Site visits were conducted to evaluate current onsite conditions. Characteristics such as site drainage, potential PCB conveyance, existing structural Best Management Practices (BMPs), public access prevention, and the potential for stormwater to drain to a permitted stormwater outfall were assessed. Site specific BMPs were also recommended during these site visits.

Table A-1 below summarizes the inventory developed through the efforts undertaken in 2012 and 2018/

Table A-1: Historic Use Inventory

Site ID	2018 ENRD Review	2013 PCB TMDL Action Plan	2012 ENRD Review	2008 Potomac Watershed PCB	2006 DEQ Correspondence - Long	2006 DEQ Correspondence - Short	Description	PCB Concern
A04	X	X			X		Former Coal Storage Area	Smaller area within A23 where a onetime PCB spill occurred
A23	X	X	X	X	X	X	Former Coal Storage Area	One time PCB Spill
A24	X	X	X		X	X	Former DPDO Storage Area	One time PCB Spill
B03	X	X	X		X		Former BLDG632 Hazardous Waste Storage Area	Included PCB contaminated materials
B04	X	X	X		X		Former BLDG633 Hazardous Waste Storage Area	Included PCB contaminated materials
B09	X	X	X		X	X	Former Building 1430 Transformer Storage Area	Transformers contained PCBs
B10	X	X	X		X		Building 190 Former Indoor Storage Room	PCB containing material stored in room
L03	X	X	X		X		Former Asphalt Storage Pad near Building 2596	Transformers possibly contained PCBs
L04	X	X	X		X	X	Hangar 3126 Former outdoor concrete pad transformer storage area	Transformers contained PCBs
L47	X	X	X		X		Former Concrete Pad Transformer Storage Area	Transformers contained PCBs
N13	X	X			X		Building 1490 Hazardous Material Storage Area	Included drums of PCB oils
MP11	X	X	X				Building 1495 Outdoor Transformer Storage Area	Transformers contained PCBs
MP12	X						249th Motorpool Area Stream Contamination	Drums contaminated with PCBs
MP13	X						Theote Road/Warren Road Wash Yard Area	Area used as a PCB Wash Yard
MP14	X						Building 2476 Former Hazmat Storage Locker	Included PCB contaminated materials

SUMMARY OF RCRA CLOSURE REVIEW AND SITE ANALYSIS

In this 2025 Update, Aerostar completed a review of all investigations completed under the Fort Belvoir RCRA Permit of the historic PCB storage areas described in PCB Source Analysis section of the 2025 PCB TMDL Action Plan and shown on Table A-1 above. This analysis found documentation for site closeout for 14 sites previously identified and was used to update the information and rubrics in Appendix B. One (1) additional site was identified as a result of sampling completed between 2018 and 2025, bring the inventory to 15 total sites.

14 sites were determined to require no further action under the Fort Belvoir Restoration Program as site investigations under RCRA determined that there is no risk to human health or the environment through sampling, risk assessments, and/or remediation. Table A-2 below provides a summary of closure justifications, current site status, and any controls in place that ensure any residual PCBs at the sites do not pose a risk of contributing PCBs to impaired water bodies through stormwater discharge.

Table A-2: RCRA Site Closure Dates and Justifications

Site name	SWMU ID	Closure Date	SWMU Status and Closure Justification
Former Coal Storage Area	**A23**	3/17/2014 8/5/2016	- No Further Action (2014) - Concrete Cap installed and Land Use Controls in place (2016) - Annual cap inspection (ongoing)
Former Defense Property Disposal Office (DPDO) Storage Area	**A24**	3/17/2014 8/5/2016	- No Further Action (2014) - Soil Cap Assessment and Land Use Controls in place (2016) - Annual cap inspections (ongoing)
Former Defense Property Disposal Office (DPDO) Ephemeral Channel	**A24a**	N/A TSCA Site	- Investigation of channel A24a to identify limits and extent for hotspot removal (ongoing)
Former Building 632 Hazardous Waste Storage Area	**B03**	9/3/1997 9/21/2012	- Site closed in accordance with VADEQ approved closure plan - Contents of buildings were properly disposed - Buildings demolished and materials properly disposed - Concrete slab floorings and 2ft of underlying material excavated and properly disposed - Eight soil samples collected at each site, all non-detect for PCBs - Excavation backfilled (Fort Belvoir, 1996a and 1996b)
Former Building 633 Hazardous Waste Storage Area	**B04**	9/3/1997 9/21/2012	

Site name	SWMU ID	Closure Date	SWMU Status and Closure Justification
Former Building 1430 Transformer Storage Area	**B09**	7/6/2012	- An environmental investigation was performed in 1997 where soil samples were collected and analyzed for the presence of PCBs around former Building T-1430. Laboratory results showed that none of the soil samples had concentrations of PCBs above the laboratory's detection limits. (Fort Belvoir, 2012b)
Building 190 Former Indoor Storage Room	**B10**	5/21/1999 7/6/2012	- No documented spills or releases related to the storage of PCBs - Major renovations of the building including the storage area were completed in 2002-2003 (Fort Belvoir, 2012b)
Former Asphalt Storage Pad near Building 2596	**L03***	12/17/2013	- Associated building was demolished and land repurposed as asphalted parking lot and field - Three subsurface soil samples, all non-detect for PCBs (Fort Belvoir, 2013a) ***Note: L03 is considered a "legacy site" due to the fact that this parcel of land is no longer a part of Fort Belvoir, is not included in Belvoir's land use inventory and is not covered by either the MS4 or ISW permits. HECSA has owned and operated this area since 1981.***
Hangar 3126 Former outdoor concrete pad transformer area	**L04**	7/6/2012	- Soil samples collected at the site did not indicate impact to the environment - The transformers and associated pads have been removed (Fort Belvoir, 2012b)
Former Concrete Pad Transformer Storage Area	**L47**	12/17/2013	- Six soil boring samples be collected from three soil borings - PCBs were not detected in the samples collected indicating that the former activities at the site have not affected the soils (Fort Belvoir, 2013b)
Building 1490 Hazardous Material Storage Area	**N13**	7/6/2012 9/17/2019	- No documented spills or releases into the environment, Indoor storage area limiting potential for exposure to precipitation - Facility stopped receiving waste in 2011 - Facility was decontaminated in April 2019 as per the Closure plan as required by the 2015 RCRA Part B Permit - Received approval for closure, under the Part B RCRA permit, by VADEQ in September 2019 - The facility was demolished in May 2020

Site name	SWMU ID	Closure Date	SWMU Status and Closure Justification
Building 1495 Former Outdoor Transformer Storage Area	**MP11**	6/18/2020	- Soil Removal occurred near building 1495 in 2014, and confirmation samples were non-detect for PCBs - Additional soil removal and asphalting in the NW corner of the parking lot. - Investigations concluded that there was negligible risk to ecological and human receptors from PCBs - Received approval for no further action or investigation based on anticipated land use from VADEQ in June 2020 ***Note: Although site has received closure under RCRA, stormwater samples continue to exhibit PCB detections above WQC – this is attributed to the difference in sampling methodologies (RCRA – EPA Method 8082A ; Stormwater - EPA Method 1668A) between the two regulatory programs.***
249th Motorpool Area Stream Contamination	**MP12**	8/24/2020	- PCBs not detected in soil samples collected at the site - Drums were removed as a part of investigations - Received approval for no further investigation from VADEQ in August 2020
Theote Road/Warren Road Wash Yard	**MP13**	1/4/2021	- Interim Soil Removal Completed March 2019 - Investigations concluded that there was negligible risk to ecological and human receptors from PCBs - Received approval for no further action with groundwater use prohibited through an administrative LUC from VADEQ in January 2021 ***Note: Although site has received closure under RCRA, stormwater samples continue to exhibit PCB detections above WQC – this is attributed to the difference in sampling methodologies (RCRA – EPA Method 8082A ; Stormwater - EPA Method 1668A) between the two regulatory programs.***
Building 2476 Former Hazmat Storage Locker	**MP14**	9/18/2020 8/12/2021	- PCBs not detected in soil samples collected at the site - Received approval for no further action or investigation based on anticipated land use from VADEQ in September 2020 - To be redeveloped under upcoming military construction (MILCON) project

Detailed site maps for individual sites can be seen in Appendices A-1 through A-15. The Subsections below provides complete site histories, a summary of historic sampling data, detailed site maps, and available RCRA closure documentation for all 15 historical PCB storage areas considered in this Action Plan.

2025

APPENDIX A-1

A23: FORMER COAL STORAGE AREA, PCB SPILL SITE

FORT BELVOIR
2025 PCB TMDL ACTION PLAN

FORMER COAL STORAGE AREA (A23)

- Stormwater from Site A23 flows to an unnamed tributary (intermittent at the area closest to the site) to Gunston Cove.
- The site falls within the PCB TMDL direct drainage area.
- The site was covered under the ISW Permit No. VA0092771 as representative outfall 007 from 2017-2025. With the 2025 reissuance, the site will be transitioned for coverage under the installation's MS4 permit and addressed as a high-priority facility in the Program Plan, although it is located outside of the MS4 service Area as defined by the 2020 Census urbanized area.

Description and History

Site A23 was first identified as a release of approximately 197 liters of dielectric transformer coolant that contained PCBs from two vandalized transformers on a concrete pad that were in the old coal storage yard. The release was reported to US EPA in 1979, and sampling was conducted between August and October 1980. Remedial actions took place in October 1982 and included the removal of 2,700 square feet of concrete and affected soil near the slab and the adjoining drainage ditch. The site was remediated to PCB concentrations below 50 mg/kg per the Toxic Substance Control Act. The site was backfilled with clean fill and covered with a concrete cap.

In 2012 - The site was being used as a materials recycling sorting and storage area and several stormwater drains located within the concrete sorting area. The natural drainage channel to the West of the site referenced in historical documents was difficult to locate. Drainage channels to the East and to the South were identified. The spill area was remediated in the early 1980s and there is no longer evidence of the PCB spill at the site. Due to the extensive site remediation, it was concluded that this site would not be likely to be a source of PCBs but should be given special consideration in the site analysis.

A fate and transport study were later conducted to determine the potential impact to groundwater from residual concentrations of Aroclor 1260 at SWMU A-23. Based on information from the study, Fort Belvoir recommended No Further Action with Land use controls for SWMU A-23. EPA Region III granted conditional approval of this determination, upon evaluation of the integrity of the concrete cap, in a letter dated March 17, 2014. In 2015, an inspection of the concrete cap was conducted which found the cap to be in good condition, with adequate thickness to prevent contact with, or migration of, underlying soil that may contain residual PCBs.

A Land Use Control Implementation Plan (LUCIP) was developed in 2016 which included a prohibition of residential development, maintenance and annual inspection of the existing concrete cap, and Excavation restrictions and notifications for any intrusive or construction activities. VADEQ approved the LUCIP in a letter dated August 5, 2016.

In 2018 - The site was used as a materials storage and recycling sorting area. A concrete berm separating the recycling area from the wooded stream to the east and a grass berm separating the sorting area and the concrete cap over the historical PCB spill are currently in use on the site. Annual cap inspections are conducted and a dump permitting process is in place to regulate accepted materials onsite. There were multiple (four) inlets located in the middle of the facility. An additional project has been submitted for the design and construction of a covered area for material handling and stormwater management structures. The current BMPs along with the proposed projects were determined to be sufficient and no further actions were recommended.

- Table A-2 provides historical PCB sampling results for site A23
- Figure A-1 provides the site boundaries for site A23

Conclusions

Although Site A23 is the site of a historic PCB release, it has undergone extensive remediation. Based on excavation and backfill information, any residual PCB contamination would be deeper than two feet below ground surface (bgs) preventing exposure to precipitation. Additional monitoring, and as necessary, maintenance/repair to the existing concrete cap is conducted annually as per the approved LUCIP (EA, 2016b). Therefore, it is unlikely that any residual PCBs present at the site would discharge to impaired water bodies.

In support of this conclusion, sampling completed in 2011 in conjunction with an industrial discharge permit application showed non-detect for PCB constituents at Outfall 007. Outfall 007 receives inflow from the two drains located at site A23. Additionally, PCBs are carried primarily by sediment and the partially wooded nature of the site would reduce potential for such sediment travel.

No Further Action under this PCB TMDL Plan

Table A-3: A23 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
Background Sediment 4-PCB Spill Site 2	Unknown	Soil	NA	1.1	NA	NA	NA	NA	NA	NA	NA
1	5/22/1979	NA	NA	42.6	NA	NA	NA	NA	NA	NA	NA
2	5/22/1979	NA	NA	777	NA	NA	NA	NA	NA	NA	NA
3	5/22/1979	NA	NA	28.1	NA	NA	NA	NA	NA	NA	NA
4	5/22/1979	NA	NA	36.3	NA	NA	NA	NA	NA	NA	NA
5	5/22/1979	NA	NA	1179	NA	NA	NA	NA	NA	NA	NA
6	5/22/1979	NA	NA	21.1	NA	NA	NA	NA	NA	NA	NA
7	5/22/1979	NA	NA	297	NA	NA	NA	NA	NA	NA	NA
8	5/22/1979	NA	NA	19.3	NA	NA	NA	NA	NA	NA	NA
9	5/22/1979	NA	NA	442	NA	NA	NA	NA	NA	NA	NA
10	5/22/1979	NA	NA	87	NA	NA	NA	NA	NA	NA	NA
11	5/22/1979	NA	NA	619	NA	NA	NA	NA	NA	NA	NA
12	5/22/1979	NA	NA	1.4	NA	NA	NA	NA	NA	NA	NA
1	7/1/1979	NA	NA	<1	NA	NA	NA	NA	NA	NA	NA
2	7/1/1979	NA	NA	255	NA	NA	NA	NA	NA	NA	NA
3	7/1/1979	NA	NA	226	NA	NA	NA	NA	NA	NA	NA
4	7/1/1979	NA	NA	834	NA	NA	NA	NA	NA	NA	NA
5	7/1/1979	NA	NA	414	NA	NA	NA	NA	NA	NA	NA
Site 1	8/23/1979	NA	NA	3393	NA	NA	NA	NA	NA	NA	NA
Sediment A Surface	8/23/1979	Soil	NA	170	NA	NA	NA	NA	NA	NA	NA
Sediment A 1 1/2 inch	8/23/1979	Soil	NA	176	NA	NA	NA	NA	NA	NA	NA
Sediment A 3 1/2 inch	8/23/1979	Soil	NA	369	NA	NA	NA	NA	NA	NA	NA
Sediment A 4 inch	8/23/1979	Soil	NA	134	NA	NA	NA	NA	NA	NA	NA
Sediment B Surface	8/23/1979	Soil	NA	219	NA	NA	NA	NA	NA	NA	NA
Sediment B 1 inch	8/23/1979	Soil	NA	152	NA	NA	NA	NA	NA	NA	NA
Sediment B 2 inch	8/23/1979	Soil	NA	98	NA	NA	NA	NA	NA	NA	NA
Sediment B 3 inch	8/23/1979	Soil	NA	134	NA	NA	NA	NA	NA	NA	NA
Sediment B 4 inch	8/23/1979	Soil	NA	34	NA	NA	NA	NA	NA	NA	NA
Background 1	8/23/1979	NA	NA	105	NA	NA	NA	NA	NA	NA	NA

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
Background 2	8/23/1979	NA	NA	2724	NA	NA	NA	NA	NA	NA	NA
Background 3	8/23/1979	NA	NA	57.6	NA	NA	NA	NA	NA	NA	NA
Background Sediment 1-1-2	1/10/1980	Soil	NA	0.55	NA	NA	NA	NA	NA	NA	NA
Background Sediment 5	1/10/1980	Soil	NA	0.56	NA	NA	NA	NA	NA	NA	NA
Background Soil 1	1/10/1980	Soil	NA	<0.4	NA	NA	NA	NA	NA	NA	NA
Surface soil drainage area	1/10/1980	Soil	NA	99 - 495	NA	NA	NA	NA	NA	NA	NA
Sediment drainage channel	1/10/1980	Soil	NA	4.7 - 38	NA	NA	NA	NA	NA	NA	NA
SP-4508	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	ND
SP-4509	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	0.47
SP-4510	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	11
SP-4511	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	27.1
SP-4512	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	547.6
1-SP-4513	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1090
2-SP-4514	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	24.3
3-SP-4515	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	3
4-SP-4516	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1.4
5-SP-4517	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1.2
6-SP-4518	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1.2
7-SP-4519	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	4.7
8-SP-4520	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	181
9-SP-4521	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	2990
10-SP-4522	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	12698
11-SP-4523	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	255
12-SP-4524	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	21.3
13-SP-4525	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	4.6
14-SP-4526	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	3218
15-SP-4527	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	2855
16-SP-4528	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	2209
17-SP-4529	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1051
18-SP-4530	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	875

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
19-SP-4531	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	178
20-SP-4532	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	5984
21-SP-4533	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	24.9
22-SP-4534	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	27
23-SP-4535	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	22.5
SP-4753	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	663
SP-4754	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	209
SP-4755	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	136
SP-4756	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	28
SP-4757	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	18.5
Old Coal Yard 1	11/1/1982	Soil	NA	NA	NA	NA	NA	<1	NA	<1	8
Old Coal Yard A	11/4/1982	Soil	NA	NA	NA	NA	NA	<1	NA	<1	210
Old Coal Yard B	11/4/1982	Soil	NA	NA	NA	NA	NA	<1	NA	<1	29
Old Coal Yard C	11/4/1982	Soil	NA	NA	NA	NA	NA	<1	NA	<1	9
Old Coal Yard D	11/4/1982	Soil	NA	NA	NA	NA	NA	<1	NA	<1	27
Old Coal Yard E	11/4/1982	Soil	NA	NA	NA	NA	NA	<1	NA	<1	51
Site A Old Coal Yard: Drainage Ditch	6/7/1983	Soil	NA	NA	NA	NA	NA	<1	NA	<1	37
Site B Old Coal Yard: Drainage Ditch	6/7/1983	Soil	NA	NA	NA	NA	NA	<1	NA	<1	2
Outfall 7	12/22/2011	Water	NA	NA	ND	ND	ND	ND	ND	ND	ND

NA: Not Available
ND: Not Detected
*Results calculated per Webb, R.G. McCall, A.C., Journal of Chromatographic Science, 11, 366 (1973)
The source of the data: Final version of Visual Site Inspection (TetraTech, 2008).

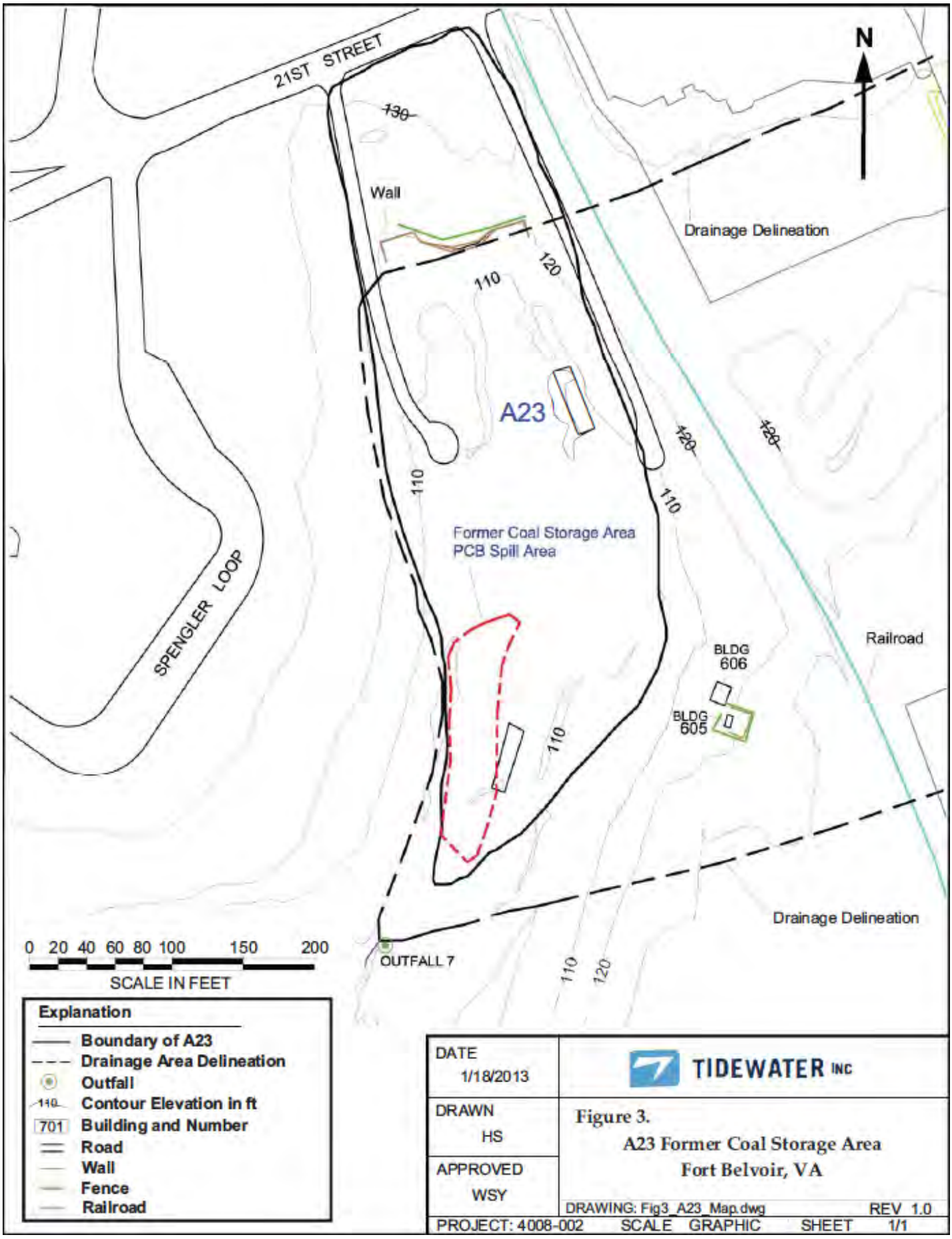


Figure A-1: Site A23 Site Boundaries

2025

APPENDIX A-2

A24: FORMER DPDO STORAGE AREA

FORT BELVOIR
2025 PCB TMDL ACTION PLAN

FORMER DPDO STORAGE AREA (A24)

- Stormwater runoff from Site A24 flows west to an unnamed tributary to Accotink Bay.
- The site falls within the PCB TMDL direct drainage area.
- There is no stormwater infrastructure at A24 which relies on overland flows to an ephemeral channel and then intermittent stream.
- It is located outside of the MS4 service Area as defined by the 2020 Census urbanized area.

Description and History

A24 was the site of a one-time PCB spill that was reported to U.S. EPA in March 1979. According to records, 163 liters of PCB coolant spilled from improperly stored electrical transformers contaminating the surrounding soils (Fort Belvoir, 1997). Extensive remediation of the site took place during 1982-1983 that included delineation of PCB contaminated areas within the DPDO yard, onsite containment, and excavation of contaminated soil. Based on contamination delineation, soil was excavated to four feet in the areas of highest contamination. The entire area of the PCB spill was covered with at least two feet of clean earth fill and vegetated. No excavation of stream sediment was required as all PCB concentration detections from stream sediments were below 50 ppm (Fort Belvoir, 1981). The 1981 letter from the U.S. EPA approved the proposed cleanup plan for the A24 DPDO yard. The remediation efforts resulted in the site being cleaned up to a level in accordance with the CWA and TSCA regulations (Fort Belvoir, 1983).

A Fate and Transport study was conducted at site A24 to determine the potential impacts to groundwater and surface waters due to the residual concentrations of Aroclor 1260. The study found that there was little probability of vertical migration to groundwater but possible transport of the congener in the aquatic system is slightly possible via in the intermittent stream 120 feet northwest of the site; however, affected soil was also removed from the DPDO storage yard and backfilled with clean earth, which acts as a natural cap and restricts runoff of residual PCB affected soils. Based on this, Fort Belvoir recommended the site for NFA (Tetra Tech, 2014b). U.S. EPA gave conditional approval of the NFA with LUCs status pending evaluation of the existing soil cap and repairs to the physical barriers (signage and fencing) in a letter dated 17 March 2014.

In 2015 an inspection of the soil cap, vegetative cover, and physical barriers was conducted for A24. The site was found to be heavily vegetated with no evidence of erosion, the fence had been damaged at a couple locations and signage was found to be faded at the time. A hand auger was used to determine the approximate thickness of the soil cap at eight locations, the cap was found to be in good condition, with adequate cover over native soils containing residual PCBs. In February of 2016, site barrier repairs were conducted, as per the recommendations from the 2015 site inspection. This included repairs to fence areas noted as damaged, replacement of access gates, and installation of LUC signage. U.S. EPA concurred in a letter dated 8 February 2016, the site reached a NFA with LUC status and a LUCIP was developed.

In 2015, as a condition of closure for A24, Four soil/sediment samples were also taken from the intermittent drainage channel to the northwest to further evaluate the migration of residual PCBs. The PCBs found in the drainage ditch soil did not exceed the TSCA threshold but did exceed EPA's Regional Screening Level for industrial use and ecologic screening for Aroclor 1260 (U.S. EPA, 2016). As required by the 8 February 2016 letter from USEPA, the intermittent channel will be investigated under a separate action by the Fort Belvoir Remediation Program under SWMU A24a.

- Table A-3 provides historical PCB sampling results for site A24
- Figure A-2 provides the site boundaries for site A24 along with the spill locations
- Figure A-3 shows where soil removal occurred and locations where PCB sampling triggered actions under Site A24a, described in Appendix A-3

Conclusions

Although site A24 is the site of a PCB release, it has undergone extensive remediation. Based on excavation and backfill information, any residual PCB contamination would be below two feet bgs preventing exposure to precipitation. PCBs are carried primarily by sediment and the thickly wooded nature of the site would reduce potential for such sediments to travel off site. Therefore, it is unlikely that any residual PCBs present at the site would discharge to impaired water bodies.

Although low level PCBs were detected in the intermittent channel (A24a), the site is being investigated under a separate program and is located downstream of all permitted outfalls, so no stormwater characterization sampling is required at A24.

No Further Action under this PCB TMDL Plan

Table A-4: A24 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/L)	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
Soil 1-PCB Spill Site 2	4/4/1979	Soil	NA	NA	156	NA	NA	NA	NA	NA	NA
Soil 2-PCB Spill Site 2	4/4/1979	Soil	NA	NA	495	NA	NA	NA	NA	NA	NA
Soil 3-PCB Spill Site 2	4/4/1979	Soil	NA	NA	151	NA	NA	NA	NA	NA	NA
Soil 4-PCB Spill Site 2	4/4/1979	Soil	NA	NA	99	NA	NA	NA	NA	NA	NA
Soil 5-PCB Spill Site 2	4/4/1979	Soil	NA	NA	301	NA	NA	NA	NA	NA	NA
Soil 6-PCB Spill Site 2	4/4/1979	Soil	NA	NA	118	NA	NA	NA	NA	NA	NA
Soil 7-PCB Spill Site 2	4/4/1979	Soil	NA	NA	287	NA	NA	NA	NA	NA	NA
Soil 8-PCB Spill Site 2	4/4/1979	Soil	NA	NA	165	NA	NA	NA	NA	NA	NA
Soil 9-PCB Spill Site 2	4/4/1979	Soil	NA	NA	110	NA	NA	NA	NA	NA	NA
Soil 10-PCB Spill Site 2	4/4/1979	Soil	NA	NA	142	NA	NA	NA	NA	NA	NA
Soil 11-PCB Spill Site 2	4/4/1979	Soil	NA	NA	572	NA	NA	NA	NA	NA	NA
Soil 12-PCB Spill Site 2	4/4/1979	Soil	NA	NA	219	NA	NA	NA	NA	NA	NA
Soil 13-PCB Spill Site 2	4/4/1979	Soil	NA	NA	33	NA	NA	NA	NA	NA	NA
Soil 14-PCB Spill Site 2	4/4/1979	Soil	NA	NA	1210	NA	NA	NA	NA	NA	NA
Soil 15-PCB Spill Site 2	4/4/1979	Soil	NA	NA	2,605	NA	NA	NA	NA	NA	NA
Soil 16-PCB Spill Site 2	4/4/1979	Soil	NA	NA	1,679	NA	NA	NA	NA	NA	NA
Soil 17-PCB Spill Site 2	4/4/1979	Soil	NA	NA	244	NA	NA	NA	NA	NA	NA
Soil 18-PCB Spill Site 2	4/4/1979	Soil	NA	NA	136	NA	NA	NA	NA	NA	NA
Soil 19-PCB Spill Site 2	4/4/1979	Soil	NA	NA	356	NA	NA	NA	NA	NA	NA
Water Sample 2-2-2	4/4/1979	Water	NA	0.0023	NA	NA	NA	NA	NA	NA	NA
Soil 2-3-3	4/4/1979	Soil	NA	NA	<25	NA	NA	NA	NA	NA	NA
Soil 2-10-2	4/4/1979	Soil	NA	NA	95	NA	NA	NA	NA	NA	NA
Soil 2-2-2	4/4/1979	Soil	NA	NA	646	NA	NA	NA	NA	NA	NA
Soil 2-3-2	4/4/1979	Soil	NA	NA	<5	NA	NA	NA	NA	NA	NA
Soil 2-4-2	4/4/1979	Soil	NA	NA	1,000	NA	NA	NA	NA	NA	NA
Soil 2-5-2	4/4/1979	Soil	NA	NA	96	NA	NA	NA	NA	NA	NA
Soil 2-7-2	4/4/1979	Soil	NA	NA	1,483	NA	NA	NA	NA	NA	NA
Soil 2-8-2	4/4/1979	Soil	NA	NA	1,550	NA	NA	NA	NA	NA	NA
Soil 2-6-2	4/4/1979	Soil	NA	NA	18	NA	NA	NA	NA	NA	NA
Soil 2-1-3	4/4/1979	Soil	NA	NA	174	NA	NA	NA	NA	NA	NA

Soil 2-1-2	4/4/1979	Soil	NA	NA	3,295	NA	NA	NA	NA	NA	NA
Soil 2-12-2	4/4/1979	Soil	NA	NA	<5	NA	NA	NA	NA	NA	NA
Soil 2-13-2	4/4/1979	Soil	NA	NA	<5	NA	NA	NA	NA	NA	NA
Soil 2-14-2	4/4/1979	Soil	NA	NA	<5	NA	NA	NA	NA	NA	NA
Sediment 1-PCB Spill Site	4/4/1979	Soil	NA	NA	7.2	NA	NA	NA	NA	NA	NA
Sediment 2-PCB Spill Site	4/4/1979	Soil	NA	NA	4.7	NA	NA	NA	NA	NA	NA
Sediment 3-PCB Spill Site	4/4/1979	Soil	NA	NA	38	NA	NA	NA	NA	NA	NA
Absorbent pre Site 2	5/22/1979	NA	NA	NA	31,910	NA	NA	NA	NA	NA	NA
Absorbent 1 Site 2	5/22/1979	NA	NA	NA	31,962	NA	NA	NA	NA	NA	NA
Absorbent 2 Site 2	5/22/1979	NA	NA	NA	52,784	NA	NA	NA	NA	NA	NA
Absorbent 3 Site 2	5/22/1979	NA	NA	NA	4,445	NA	NA	NA	NA	NA	NA
Hexane wash pre Site 2	5/22/1979	NA	NA	NA	864	NA	NA	NA	NA	NA	NA
Hexane wash 1 Site 2	5/22/1979	NA	NA	NA	2,205	NA	NA	NA	NA	NA	NA
Hexane wash 2 Site 2	5/22/1979	NA	NA	NA	5,048	NA	NA	NA	NA	NA	NA
Hexane wash 3 Site 2	5/22/1979	NA	NA	NA	41	NA	NA	NA	NA	NA	NA
Site 2	8/23/1979	NA	NA	NA	25,570	NA	NA	NA	NA	NA	NA
Sediment 1	unknown	Soil	NA	NA	27	NA	NA	NA	NA	NA	NA
Sediment 2	1/10/1980	Soil	NA	NA	0.33	NA	NA	NA	NA	NA	NA
Sediment 3	1/10/1980	Soil	NA	NA	0.28	NA	NA	NA	NA	NA	NA
Sediment 4	1/10/1980	Soil	NA	NA	0.22	NA	NA	NA	NA	NA	NA
Sediment 6	unknown	Soil	NA	NA	0.5	NA	NA	NA	NA	NA	NA
Soil 2	unknown	Soil	NA	NA	<15	NA	NA	NA	NA	NA	NA
Soil 3	unknown	Soil	NA	NA	<15	NA	NA	NA	NA	NA	NA
Soil 4	unknown	Soil	NA	NA	<15	NA	NA	NA	NA	NA	NA
Soil 5	unknown	Soil	NA	NA	20	NA	NA	NA	NA	NA	NA
Soil 6	unknown	Soil	NA	NA	2,445	NA	NA	NA	NA	NA	NA
Soil 7	unknown	Soil	NA	NA	28	NA	NA	NA	NA	NA	NA
Background Sediment 5	unknown	Soil	NA	NA	0.56	NA	NA	NA	NA	NA	NA
Woodchips	unknown	NA	NA	NA	4	NA	NA	NA	NA	NA	NA
Background Soil 1	unknown	Soil	NA	NA	<0.4	NA	NA	NA	NA	NA	NA
Spill Site A	unknown	NA	NA	NA	68,503	NA	NA	NA	NA	NA	NA
Spill Site B	unknown	NA	NA	NA	10,714	NA	NA	NA	NA	NA	NA

Absorbent pre Site 1	4/23/1980	NA	NA	NA	57,340	NA	NA	NA	NA	NA	NA
Absorbent 2 Site 1	4/23/1980	NA	NA	NA	16,299	NA	NA	NA	NA	NA	NA
Absorbent 3 Site 1	4/23/1980	NA	NA	NA	64,141	NA	NA	NA	NA	NA	NA
Hexane wash pre Site 1	4/23/1980	NA	NA	NA	2,273	NA	NA	NA	NA	NA	NA
Hexane wash 2 Site 1	4/23/1980	NA	NA	NA	3,145	NA	NA	NA	NA	NA	NA
Hexane wash 3 Site 1	4/23/1980	NA	NA	NA	99	NA	NA	NA	NA	NA	NA
HexWashBin#1-5385	10/9/1981	Water	NA	22.57	NA	NA	NA	NA	NA	NA	NA
HexWashBin#2-5386	10/9/1981	Water	NA	268.09	NA	NA	NA	NA	NA	NA	NA
HexWashBin#3-5387	10/9/1981	Water	NA	44.07	NA	NA	NA	NA	NA	NA	NA
HexWashBin#4-5388	10/9/1981	Water	NA	30.59	NA	NA	NA	NA	NA	NA	NA
HexWashPad#1-5389	10/9/1981	Water	NA	12	NA	NA	NA	NA	NA	NA	NA
HexWashPad#2-5390	10/9/1981	Water	NA	15	NA	NA	NA	NA	NA	NA	NA
HexWashPad#3-5391	10/9/1981	Water	NA	5.85	NA	NA	NA	NA	NA	NA	NA
HexWashPad#4-5392	10/9/1981	Water	NA	6	NA	NA	NA	NA	NA	NA	NA
HexWashPad#5-5393	10/9/1981	Water	NA	9.2	NA	NA	NA	NA	NA	NA	NA
HexWashPad#6-5394	10/9/1981	Water	NA	5.5	NA	NA	NA	NA	NA	NA	NA
HexWashPad#7-5395	10/9/1981	Water	NA	4.31	NA	NA	NA	NA	NA	NA	NA
HexWashPad#8-5396	10/9/1981	Water	NA	4.19	NA	NA	NA	NA	NA	NA	NA
HexWashPad#9-5397	10/9/1981	Water	NA	2.47	NA	NA	NA	NA	NA	NA	NA
HexWashPad#10-5398	10/9/1981	Water	NA	40.5	NA	NA	NA	NA	NA	NA	NA
HexWashPad#11-5399	10/9/1981	Water	NA	15.3	NA	NA	NA	NA	NA	NA	NA
HexWashPad#12-5400	10/9/1981	Water	NA	1.74	NA	NA	NA	NA	NA	NA	NA
HexWashPad#13-5401	10/9/1981	Water	NA	6.1	NA	NA	NA	NA	NA	NA	NA
HexWashPad#14-5402	10/9/1981	Water	NA	8.25	NA	NA	NA	NA	NA	NA	NA
HexWashPad#15-5403	10/9/1981	Water	NA	35.18	NA	NA	NA	NA	NA	NA	NA
Road1-5291	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,287.9
M11-5335	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.8
M12-5336	10/20/1981	NA	NA	NA	NA	NA	NA	NA	1,244	NA	NA
M13-5337	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.7
M22-5341	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.3
M23-5342	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.5
M31-5345	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	28.0
M32-5346	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.6
M34-5348	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	51.5
M35-5349	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	36.6

M41-5350	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.1
M42-5351	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	63.4
O15-5319	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	55
O21-5320	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	28.8
O22-5321	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.6
O24-5323	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.3
O31-5325	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	45.6
O32-5326	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	136.7
O33-5327	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	47.8
O35-5329	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	106.6
P31-5381	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.8
P33-5380	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.4
P34-5382	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	7
R11-5295	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	168.6
R14-5298	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	145
R43-5312	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.2
T14-5358	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	33.8
T13-5357	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,371.5
T23-5362	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.2
T32-5366	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	242
T33-5367	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	152.3
T43-5372	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	2454
X1-SP 5286	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	36.6
X2-5287	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.4
X3-5288	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.1
X4-5289	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.98
X5-SP 5290	NA	NA	NA	NA	2.0	NA	NA	NA	NA	NA	NA
Y1-5282	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.2
Y2-SP 5283	10/20/1981	NA	NA	NA	40	NA	NA	NA	NA	NA	NA
Y3-SP 5284	10/20/1981	NA	NA	NA	25.1	NA	NA	NA	NA	NA	NA
Y4-SP 5285	NA	NA	NA	NA	12.9	NA	NA	NA	NA	NA	NA
Rd2-5292	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	108.6
Rd3-5293	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.1
Rd4-5294	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.2
R12-5296	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	46.8

R13-SP 5297	NA	NA	NA	NA	53.6	NA	NA	NA	NA	NA	NA
R15-5299	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	33.33
R21-5300	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.1
R22-5301	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	38.6
R23-SP 5302	NA	NA	NA	NA	20.7	NA	NA	NA	NA	NA	NA
R24-5303	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5
R25-5304	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.7
R31-5305	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	33
R32-5306	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.6
R33-SP 5307	NA	NA	NA	NA	24.3	NA	NA	NA	NA	NA	NA
R34-5308	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	61.68
R35-5309	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.9
R41-5310	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.6
R42-5311	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.6
R44-SP 5313	NA	NA	NA	NA	33.4	NA	NA	NA	NA	NA	NA
R45-5314	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.5
O11-4315	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	72.8
O12-5316	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	54
O13-SP 5317	NA	NA	NA	NA	8.5	NA	NA	NA	NA	NA	NA
O14-5318	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	252.63
O23-SP 5322	NA	NA	NA	NA	16.2	NA	NA	NA	NA	NA	NA
O25-5324	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	34.6
OP34-SP 5328	NA	NA	NA	NA	62.9	NA	NA	NA	NA	NA	NA
O41-5330	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.9
O42-5331	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	63.8
O43-SP 5332	NA	NA	NA	NA	32.3	NA	NA	NA	NA	NA	NA
O44-5333	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.6
O45-5334	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.3
M14-5338	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	45
M15-5339	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.5
M21-5340	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.8
M24-5343	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
M25-5344	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.6
M33-SP 5347	NA	NA	NA	NA	39.8	NA	NA	NA	NA	NA	NA
M43-SP 5352	NA	NA	NA	NA	21.6	NA	NA	NA	NA	NA	NA

M45-5354	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.4
T11-5355	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	47.2
T12-5356	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	121.8
T15-5359	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	166.19
T21-5360	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	149.4
T22-5361	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	42.3
T24-5363	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	233
T25-5364	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	90
T31-5365	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	33
T34-5368	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	148.5
T35-5369	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,370.6
T41-5370	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	122.4
T42-5371	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	137.3
T44-5373	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	45.8
T45-5374	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	50.7
R11-SP 5375	NA	NA	NA	NA	69	NA	NA	NA	NA	NA	NA
P14-5376	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	37.9
P22-SP 5377	NA	NA	NA	NA	18.9	NA	NA	NA	NA	NA	NA
P25-5378	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.5
P13-5379	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	266.66
P42-5383	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.99
P45-5384	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.7
PDO-02	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-03	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-04	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-05	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-06	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-07	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	7
PDO-08	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	23*	<1	<1
PDO-09	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-10	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-11	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	11
PDO-12	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	17
PDO-13	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
DPDO-14	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	140

PDO-15	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	52
PDO-16	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	53
PDO-17	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	70
PDO-18	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	39
PDO-19	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	48
PDO-20	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	34
PDO-21	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	34
PDO-22	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	99
PDO-23	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	82
PDO-24	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	30
PDO-25	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	67
PDO-26	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	96
PDO-27	11/3/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	85
PDO-28	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	12
PDO-29	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	360
PDO-30	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	290
PDO-31	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	140
PDO-32	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	160
PDO-33	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	800
PDO-34	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	62
PDO-35	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	68
PDO-36	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	190*	74
PDO-37	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	200
PDO-38	11/9/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	53
PDO-39	11/4/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	16
PDO-40	11/4/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	97
PDO-41-3	11/4/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	8
PDO-42-6	11/4/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	18
PDO-43-6	11/4/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	11
PDO-F	11/4/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	59
PDO-G	11/4/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	44
PDO-H	11/4/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	7
PDO-50	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	75
PDO-51	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	31
PDO-52	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	67

PDO-53	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-54	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	51
PDO-55	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	140
PDO-56	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-57	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	3,000
PDO-58	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	29
PDO-59	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	730
PDO-60	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	220
PDO-61	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	320
PDO-62	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	95
PDO-63	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	15	<1	24
PDO-64	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	100
PDO-65	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	15
PDO-66	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	240
PDO-67	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	68
PDO-68	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	11
PDO-69	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	38
PDO-70	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-71	11/19/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	5
PDO-72	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	5
PDO-73	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	18
PDO-74	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	9
PDO-75	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	98
PDO-76	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	190
PDO-77	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	63
PDO-78	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	95
PDO-79	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-80	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	23
PDO-81	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	95
PDO-82	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	97
PDO-83	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	54
PDO-84	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	4
PDO-85	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	21
PDO-86	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-87	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	9

PDO-88	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	7
PDO-89	12/10/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	30
PDO-90	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-91	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	4
PDO-92	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-93	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	130
PDO-94	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	110
PDO-95	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	520
PDO-96	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	470
PDO-97	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	65
PDO-98	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	140
PDO-99	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	18
PDO-100	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	71
PDO-101	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	83
PDO-102	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	150
PDO-103	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	36
PDO-104	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-105	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	180
PDO-106	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	95
PDO-107	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	9
PDO-108	12/29/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	6
PDO-109	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-110	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	23
PDO-111	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	240
PDO-111 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	32.1
PDO-111 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	24.2
PDO-111 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	10
PDO-111 D	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-111 E	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-111 F	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-112	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	85
PDO-112 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	300.6
PDO-112 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	59.1
DPO-112 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	6
DPO-112 D	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	6

DPO-112 E	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
DPO-112 F	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	11
PDO-113	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	68
PDO-113 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	134.9
PDO-113 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	129.9
PDO-113 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	220
PDO-113 D	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-113 E	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-113 F	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-114	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	71
PDO-114 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	916
PDO-114 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	139.7
PDO-114 C	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	40
PDO-114 D	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	4
PDO-114 E	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-114 F	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-115	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	74
PDO-115 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	130.9
PDO-115 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	31.2
PDO-115 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-115 D	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-115 E	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	4
PDO-116	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	51
PDO-116 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	156.9
PDO-116 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	13.2
PDO-116 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-116 D	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-116 E	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-117	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-117 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	0.6
PDO-117 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	131.2
PDO-117 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	100
PDO-117 D	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	10
PDO-117 E	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-118	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	63

PDO-118 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	44.4
PDO-118 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	50.3
PDO-118 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	110
PDO-118 D	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	20
PDO-118 E	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	15
PDO-119	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	56
PDO-119 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	20.2
PDO-119 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	180.5
PDO-119 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	89
PDO-119 D	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	63
PDO-119 E	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	5
PDO-120	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-120 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	81.3
PDO-120 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	56.9
PDO-120 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	9
PDO-120 D	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	8
PDO-120 E	3/22/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-121	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	3
PDO-121 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	423.7
PDO-121 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	286.2
PDO-121 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	57
PDO-121 D	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	36
PDO-121 E	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	43
PDO-121 F	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-122	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	55
PDO-122 3-6"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	9.1
PDO-122 6-9"	2/1/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	7.2
PDO-122 C	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-122 D	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-122 E	3/13/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
PDO-123	1/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	6
PDO-111x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	12
PDO-112x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	4
PDO-113x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	18
PDO-114x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	210

PDO-115x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-116x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	20
PDO-117x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	85
PDO-118x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	35
PDO-119x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	71
PDO-120x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	210
PDO-121x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	90
PDO-122x	4/5/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	25
PDO-111y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	65
PDO-112y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	13
PDO-113y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-114y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	200
PDO-115y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	3
PDO-116y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-117y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-118y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	250
PDO-119y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2,300
PDO-120y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	420
PDO-121y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-122y	4/14/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	7
PDO-111z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-112z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-113z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	5
PDO-114z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	12
PDO-115z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	6
PDO-116z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-117z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	2
PDO-118z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
PDO-119z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	70
PDO-120z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	88
PDO-121z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	33
PDO-122z	4/28/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	6
PDO-111z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	<1
PDO-112z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	2
PDO-113z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	3

PDO-114z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	25
PDO-115z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	11
PDO-116z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	4
PDO-117z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	3
PDO-118z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	120
PDO-119z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	85
PDO-120z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	94
PDO-121z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	25
PDO-122z	5/12/1983	Soil	EPA 600	NA	NA	NA	NA	NA	NA	NA	<1
118 xx	5/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	1
119 xx	5/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	120
120 xx	5/19/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	4
119 yy	6/7/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	5
PDO Stream No. 1	6/7/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	32
PDO Stream No. 2	6/7/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO Stream No. 3	6/7/1983	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
A24-SD-01	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	0.482
A24-SD-02	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	2.610
A24-SD-02-DUP	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	2.58
A24-SD-03	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	2.860
A24-SD-04	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	1.650

NA: Not Available
ND: Not Detected
*Results calculated per Webb, R.G. McCall, A.C., Journal of Chromatographic Science, 11, 366 (1973).
The source of the data: Final version of Visual Site Inspection (TetraTech, 2008). ;
Site Summary Report Addendum for Sites CC-A04A23: Former Coal Storage Area/PCB Spill Site and CC-A24: Former DPDO Storage Area/PCB Spill Site (EA Engineering, Science, and Technology, Inc., 2016).

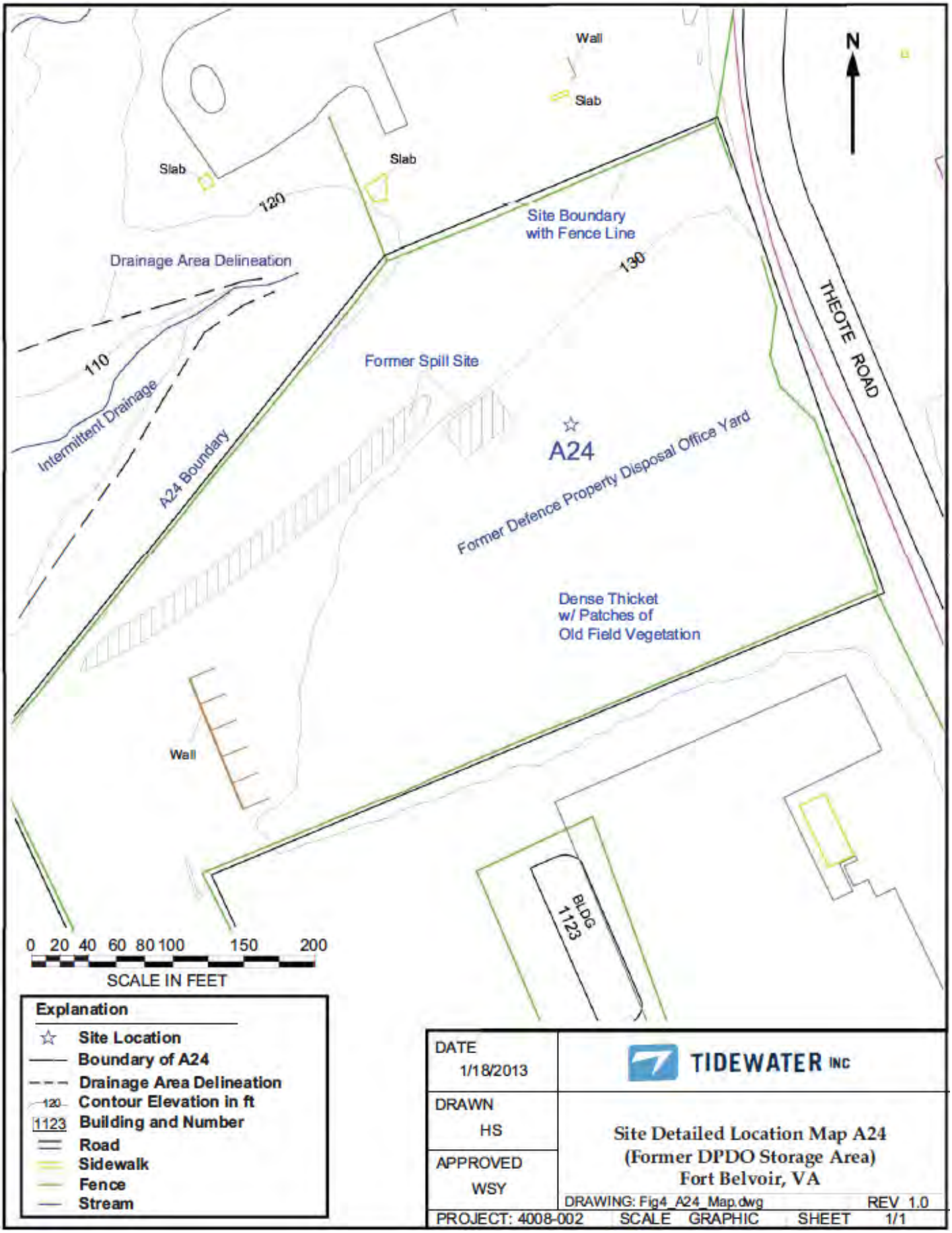


Figure A-2: A24 Site Boundaries and PCB spill location

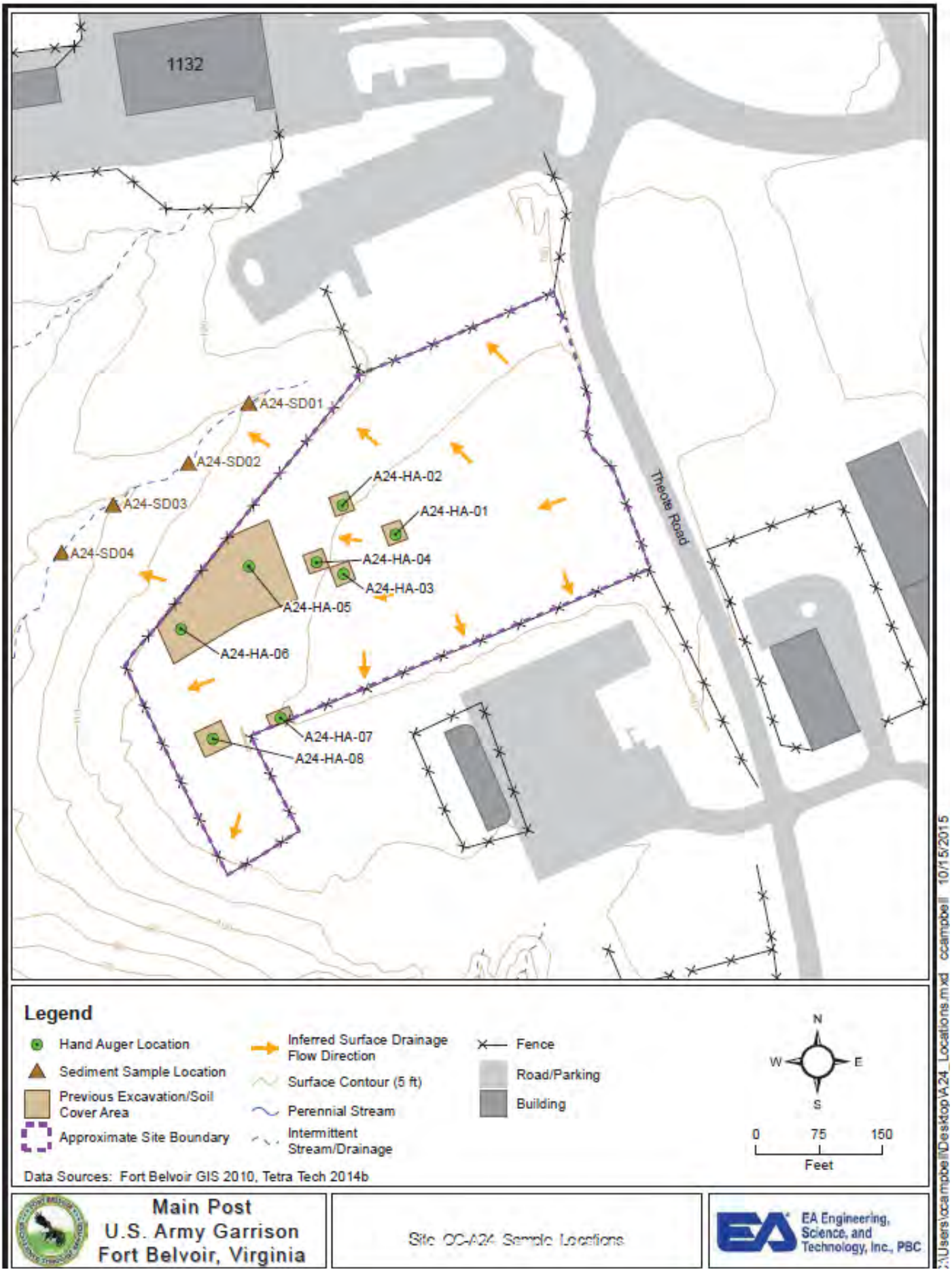


Figure A-3: A24 Excavated Area, Soils Cap Investigation, and Stream Sampling

2025

APPENDIX A-3

A24a: RECEIVING STREAM – FROM DPDO STORAGE YARD

FORT BELVOIR
2025 PCB TMDL ACTION PLAN

RECEIVING CHANNELS FROM DPDO STORAGE YARD (A24a)

- Site A24a has been classified as a 3,000-foot ephemeral channel flowing east to west towards Accotink Bay
- The site falls within the PCB TMDL direct drainage area.
- The site is an instream location with no stormwater infrastructure
- It is located outside of the MS4 service Area as defined by the 2020 Census urbanized area.

Description and History

Per the conditions for closure of site A24; Site A24a was opened following low level PCB detections in the receiving channel during a 2015 study which did not exceed the TSCA threshold of 50 mg/kg but exceeded the USEPA Region 3 recognized ecological screening level of 0.000332 mg/kg for soil and USEPA's Regional Screening Level (RSL) protective of human health under industrial use (USEPA, 2016b). Following this study EPA recommended further evaluation of drainage features located outside of the A24 delineated area.

In 2018 nine (9) samples were collected as a part of an investigation of the downgradient channel. The samples identified a singular location in the channel, approximately 800 feet from A24, where PCB detections were above the USEPA screening levels. To address this, a hot spot removal action was recommended for the area. Prior to initiation of a hot spot removal action, a pre-remediation investigation to define the extent of the hot spot removal and establish a cleanup goal had to be completed.

In 2022 a corrective measures study was conducted to obtain data needed to delineate the horizontal and vertical extent of PCB contamination for hotspot soil removal within the channel. The study looked at 10 locations within the hotspot identified in 2018 and found that PCBs in the channel were present at much higher levels than previously identified during the limited sampling conducted in 2015 and 2018. During this effort at least one location was determined to contain PCBs above the 50-ppm threshold triggering TSCA PCB regulatory applicability. In a letter from 2023, US EPA assumes oversight of the remediation efforts at A24a due to the soils meeting the definition of PCB remediation waste under TSCA, where VADEQ does not have regulatory authority.

In 2024 Fort Belvoir continued coordination with US EPA Region III to develop a site characterization plan and further sampling at the site. Sampling was initiated in November 2024 and, as of February 2025, a report was pending.

- Table A-4 provides available historical PCB sampling results for site A24a
- Figure A-4 provides the site boundaries for site A24a

Conclusions

Site A24a is in the early stages of investigation under TSCA in coordination with EPA Region III. It is also located downstream of all MS4 and ISW permitted outfalls, so no stormwater characterization sampling is recommended under this TMDL Action Plan.

The MS4 Program will monitor progress of ongoing TSCA investigations and remediation of the channel; PCB sampling results for intermittent channel (A24a), a summary of any findings from investigations, and status of any remediation will be included in MS4 Annual Report.

Monitor Progress of Remediation under TSCA and Provide Summary in Annual Report

Table A-5: A24a Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/L)	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
A24-SD-01	12/27/2018	Solid	8082A	NA	0.243	NA	NA	NA	NA	NA	NA	0.243
A24-SD-02	12/27/2018	Solid	8082A	NA	0.148	NA	NA	NA	NA	NA	NA	0.148
A24-SD-03	12/27/2018	Solid	8082A	NA	0.610	NA	NA	NA	NA	NA	NA	0.610
A24-SD-04	12/27/2018	Solid	8082A	NA	0.374	NA	NA	NA	NA	NA	NA	0.374
A24-SD-05	12/27/2018	Solid	8082A	NA	1.480 J	NA	NA	NA	NA	NA	NA	1.480 J
A24-SD-06	12/27/2018	Solid	8082A	NA	0.122 J	NA	NA	NA	NA	NA	NA	0.122 J
A24-SD-07	12/27/2018	Solid	8082A	NA	0.0756 J	NA	NA	NA	NA	NA	NA	0.0756 J
A24-SD-08	12/27/2018	Solid	8082A	NA	0.026 J	NA	NA	NA	NA	NA	NA	0.026 J
A24-SD-09	12/27/2018	Solid	8082A	NA	0.0396 UJ	NA	NA	NA	NA	NA	NA	0.0396 UJ
A24-01-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	3.40	NA	NA	NA	NA	NA	NA	3.400
A24-01-0.5-1.5-120122	12/1/2022	Solid	8082A	NA	0.12	NA	NA	NA	NA	NA	NA	0.120
A24-02-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	3.70	NA	NA	NA	NA	NA	NA	3.700
A24-02-0.5-2.0-120122	12/1/2022	Solid	8082A	NA	1.80	NA	NA	NA	NA	NA	NA	1.800
A24-03-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	3.90	NA	NA	NA	NA	NA	NA	3.900
A24-03-0.5-1.5-120122	12/1/2022	Solid	8082A	NA	7.50	NA	NA	NA	NA	NA	NA	7.500
A24-04-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	3.40	NA	NA	NA	NA	NA	NA	3.400
A24-04-0.5-2.0-120122	12/1/2022	Solid	8082A	NA	1.40	NA	NA	NA	NA	NA	NA	1.400
A24-05-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	1.50	NA	NA	NA	NA	NA	NA	1.500
A24-05-0.5-2.0-120122	12/1/2022	Solid	8082A	NA	6.20	NA	NA	NA	NA	NA	NA	6.200
A24-06-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	6.20	NA	NA	NA	NA	NA	NA	6.200
A24-06-0.5-2.0-120122	12/1/2022	Solid	8082A	NA	2.80	NA	NA	NA	NA	NA	NA	2.800
A24-07-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	0.32	NA	NA	NA	NA	NA	NA	0.320
A24-07-0.5-2.0-120122	12/1/2022	Solid	8082A	NA	0.01	NA	NA	NA	NA	NA	NA	0.01
A24-08-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	20.00	NA	NA	NA	NA	NA	NA	20.00
A24-08-0.5-2.0-120122	12/1/2022	Solid	8082A	NA	26.00	NA	NA	NA	NA	NA	NA	26.00
A24-09-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	65.00	NA	NA	NA	NA	NA	NA	65.00
A24-09-0.5-2.0-120122	12/1/2022	Solid	8082A	NA	19.00	NA	NA	NA	NA	NA	NA	19.00
A24-10-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	2.10	NA	NA	NA	NA	NA	NA	2.10
A24-10-0.5-1.5-120122	12/1/2022	Solid	8082A	NA	0.64	NA	NA	NA	NA	NA	NA	0.64
A24-11-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	0.69	NA	NA	NA	NA	NA	NA	0.69

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/L)	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
A24-11-0.5-2.0-120122	12/1/2022	Solid	8082A	NA	0.89	NA	NA	NA	NA	NA	NA	0.89
A24-12-0.0-0.5-120122	12/1/2022	Solid	8082A	NA	0.64	NA	NA	NA	NA	NA	NA	0.64
A24-12-0.5-2.0-120122	12/1/2022	Solid	8082A	NA	3.80	NA	NA	NA	NA	NA	NA	3.80

J: Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value
ND: Not Detected
NA: Not Available
All Total PCB (tPCB) data presented are adjusted ('censored') valves The source of this data: TestAmerica, 2015

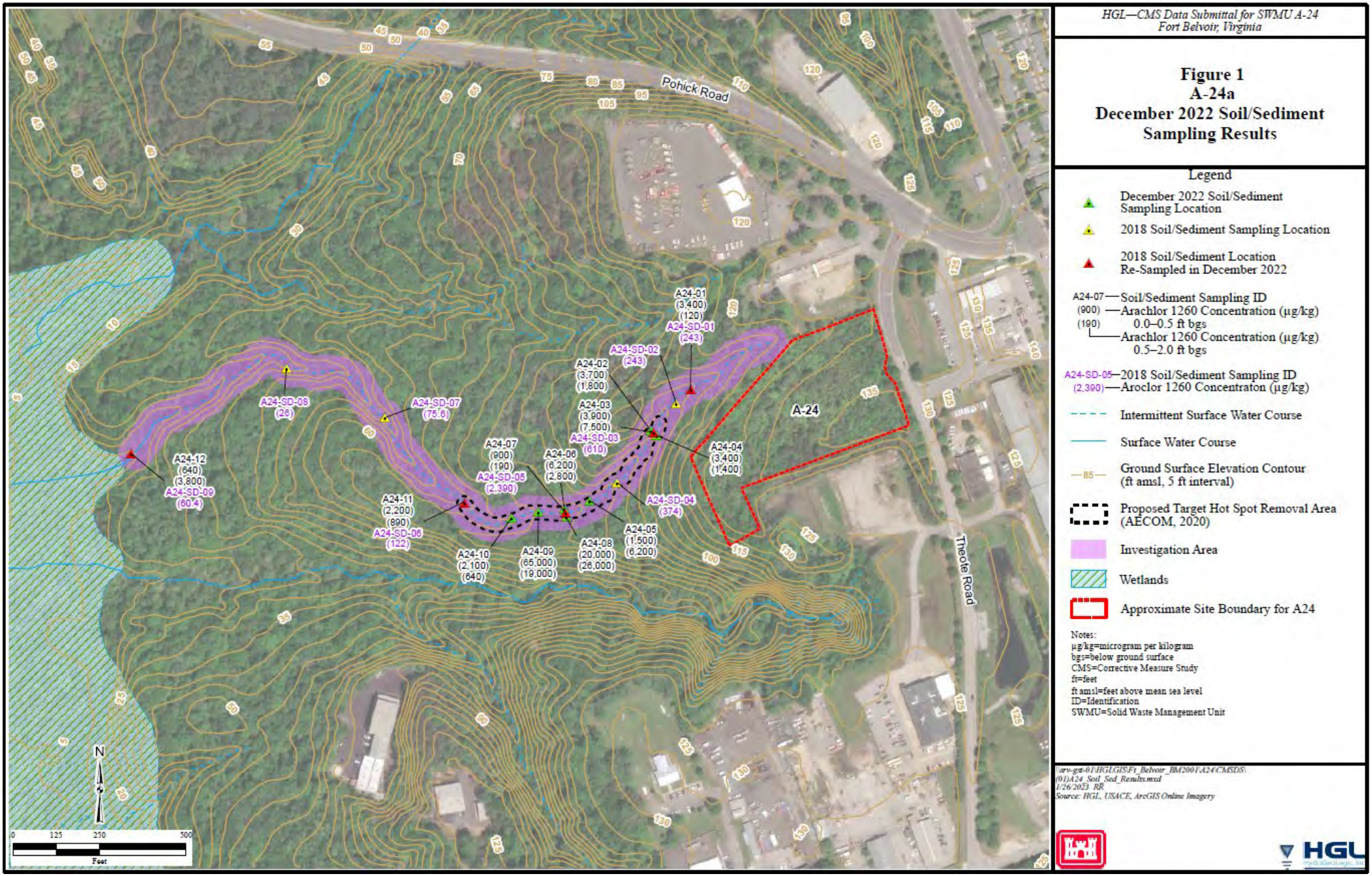


Figure A-4: Investigation Area for Site A24a

2025

APPENDIX A-4

B03: FORMER BUILDING 632 HAZARDOUS WASTE STORAGE AREA

FORT BELVOIR
2025 PCB TMDL ACTION PLAN

FORMER BUILDING 632 HAZARDOUS WASTE STORAGE AREA (B03)

- Stormwater runoff from Site B03 is not likely to discharge due to the area being heavily vegetated with no nearby infrastructure.
- The site falls within the PCB TMDL direct drainage area.
- The site it is located outside of the MS4 service Area as defined by the 2020 Census urbanized area.

Description and History

SWMU B03 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as an interim status 10 ft by 12 ft brick and concrete storage facility for hazardous waste, Building 632. The structure was used from the early 1980s to 1990 as a storage facility for hazardous wastes such as, waste oil/Freon mixture, trichlorofluoromethane, photo sludge, and PCB-contaminated wastes from numerous sources. No PCB releases were reported to have occurred at B03.

Storage Building 632 has been demolished and the site was remediated, a closure report was prepared and sent to VADEQ in 1996 that recommended no further action. VADEQ approved this recommendation in a letter dated 3 September 1997. U.S. EPA reviewed the NFA recommendation and concurred in a letter dated 21 September 2012 (Fort Belvoir, 2014).

- Table A-5 provides historical PCB sampling results for site B03
- Figure A-5 provides the site boundaries for site B03

Conclusions

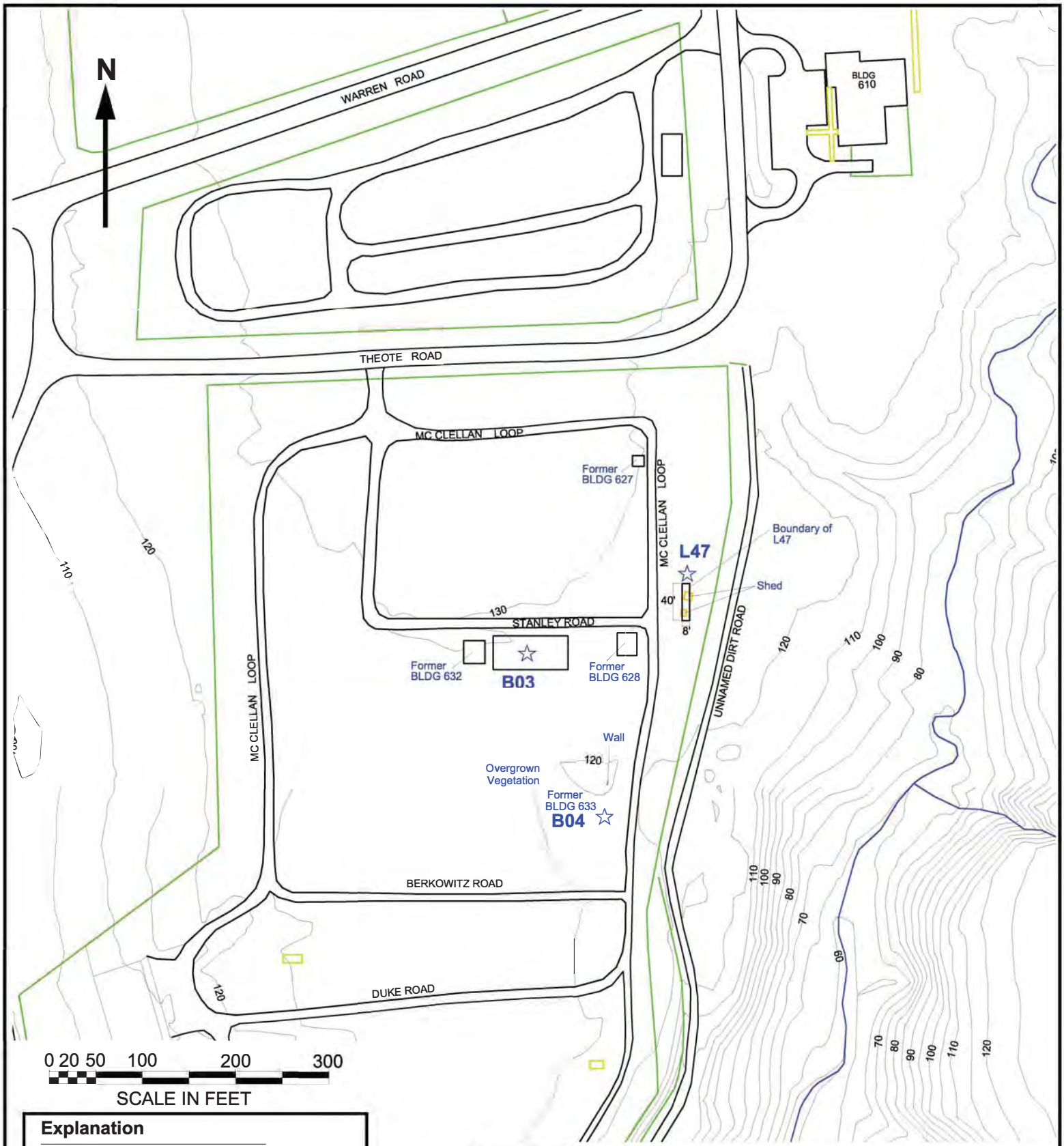
There are no stormwater drains nearby. Currently the site is wooded with substantial brush growth. It was concluded that this site would not be a likely source of PCBs as PCB items were kept indoors not exposed to precipitation, no evidence of the hazardous waste storage area during recent site visits, the site was remediated, re-vegetated, and there are no nearby storm drains.

No Further Action under this PCB TMDL Plan

Table A-6: B03 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
600-BG-01	2/8/1994	NA	8080	NA	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U
600-BG-02	2/8/1994	NA	8080	NA	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U
600-BG-03	2/8/1994	NA	8080	NA	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U
600-BG-04	2/8/1994	NA	8080	NA	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U	<0.021 U

NA: Not Available
U: Non-detect; below detection limit
The source of data: Building 632 Closure Report (Department of the Army, July 1996)



Explanation

- ☆ Site Location
- Boundaries of B03, B04, L47
- Drainage Area Delineation
- 90 Contour Elevation in ft
- 632 Building and Number
- Road
- Slab
- Fence
- Stream

DATE 1/17/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map for B03/B04/L47 Fort Belvoir, VA**
APPROVED WSY	DRAWING: Fig5_B03_B04_L47_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1

CLOSURE APPROVAL
5 @ 600 AREA

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

George Allen
Governor

Becky Norton Dunlop
Secretary of Natural Resources

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
http://www.deq.state.va.us

Thomas L. Hopkins
Director

(804) 698-4000
1-800-592-5482

September 3, 1997

Lt. Col. Stacey K. Hirata
Directorate of Public Works
U.S. Army Garrison, Fort Belvoir
9430 Jackson Loop, Suite 107
Fort Belvoir, Virginia 22060-5130

Re: Buildings 625, 627, 632, 633, and 634
EPA ID# VA7213720082

Dear Lt. Col. Hirata:

On August 15, 1997, the closure units associated with the above-referenced buildings at your facility were inspected by Khoa Nguyen, a representative of the Virginia Department of Environmental Quality (Department). The inspection and required certifications show that closure had been performed in accordance with the protocol specified in the approved closure plan. The Department concurs with the conclusion of the closure reports, dated July 1996, that clean closure of Buildings 625, 627, 632, 633, and 634 at your facility has been achieved. Please note, however, that the U.S. Environmental Protection Agency retains the authority to address possible corrective action of continuing releases pursuant to the Hazardous and Solid Waste Amendments of 1984.

If you have any questions regarding this letter, please contact Khoa Nguyen of my staff at (804) 698-4128.

Sincerely,

Leslie A. Romanchik
for Thomas L. Hopkins

c: Khoa Nguyen - DEQ
Sanjay Thirunagari - DEQ
Debbie Miller - DEQ
Claire Ballard - DEQ

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To Jeff Moran	From Khoa Nguyen
Co. Dewberry & Davis	Co. VDEQ
Dept.	Phone #
Fax # 703-849-0103	Fax # 804-6984234

Jon Ely - DEQ, NVRO
Robert Greaves - EPA Region III
Central Hazardous Waste File

Site: B-03 - Building 632 Hazardous Waste Storage Area

Description
SWMU B-03 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as an interim status 10 ft by 12 ft brick and concrete storage facility for hazardous waste. The structure was originally constructed in the 1930s to serve as a munitions storage bunker. The structure was then used from the early 1980s to 1990 as a storage facility for hazardous wastes such as, waste oil/Freon mixture, trichlorofluoroethane, photo sludge, and PCB-contaminated wastes from numerous sources.

Findings
During the closure activities at SWMU B-03, methylene chloride was found above screening levels; therefore, a health-based risk assessment was conducted and concluded that the risks associated with the maximum concentrations of methylene chloride were below risk-based standards for acceptable site closure. A closure report was prepared and sent to VDEQ in 1996 that recommended no further action.

Regulatory Response
A VDEQ letter dated September 3, 1997 affirmed that clean closure had been achieved for soils at the site. See **Attachment C** for a copy of the VDEQ closure letter and July 1996 Closure Report for Building 632.

SWMU Number	SWMU Name	Closure Report	NFA Closure Date
B-03	Building 632 Hazardous Waste Storage Area	Building 632 Closure Report, July 1996	VDEQ Letter September 3, 1997

2025

B04: Former Building 633 Hazardous Waste Storage Area

PCB TMDL ACTION PLAN – APPENDIX A-5

FORT BELVOIR

Former Building 633 Hazardous Waste Storage Area (B04)

SWMU B04 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as an interim status storage facility for hazardous waste. The unit was described a 20 ft by 24 ft structure constructed of masonry blocks, with a concrete floor. The structure was used from the early 1980s to 1990 as a storage facility for non-regulated wastes including PCB-contaminated waste, waste paint solids, and bromoform from numerous sources. No PCB releases were reported to have occurred at B04.

Storage Building 633 has been demolished and the site was remediated, with a closure report that documented the decontamination, demolition, sampling, characterization, and disposal of the unit submitted in July 1996. VADEQ approved this recommendation in a letter dated 3 September 1997. U.S. EPA reviewed the NFA recommendation and concurred in a letter dated 21 September 2012 (Fort Belvoir, 2014). Figure 6 shows the location of B04.

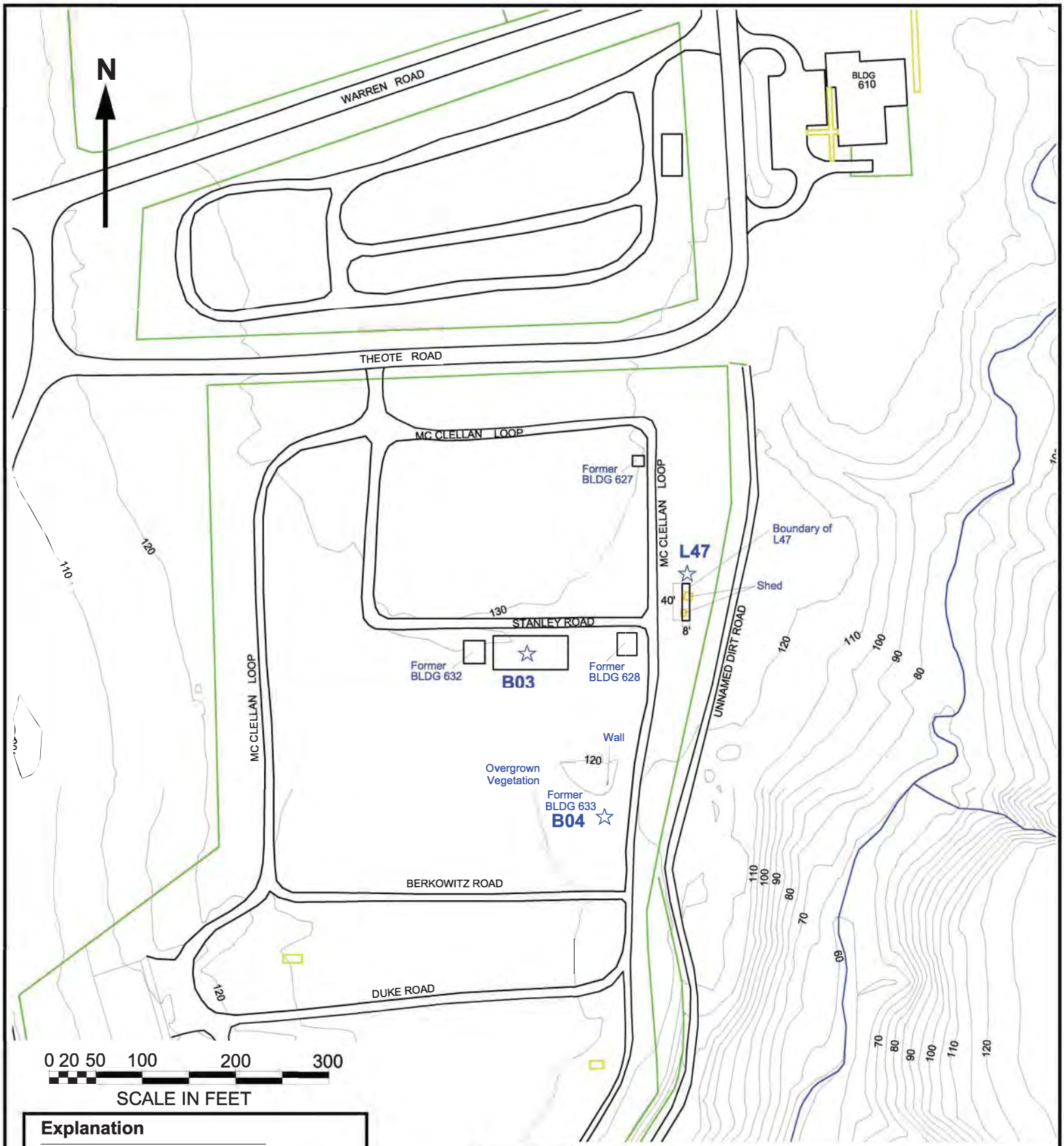
Much like B03, there are no stormwater drains nearby. Currently the site is wooded with substantial brush growth. It was concluded that this site would not be a likely source of PCBs as PCB items were kept indoors not exposed to precipitation, no evidence of the hazardous waste storage area during recent site visits, the site was remediated, re-vegetated, and there are no nearby storm drains.

Conclusion: No Further Action.

Tabe A-4: B04 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA: Not Available



Explanation

- ☆ Site Location
- Boundaries of B03, B04, L47
- Drainage Area Delineation
- 90 Contour Elevation in ft
- 632 Building and Number
- Road
- Slab
- Fence
- Stream

DATE 1/17/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map for B03/B04/L47 Fort Belvoir, VA**
APPROVED WSY	DRAWING: Fig5_B03_B04_L47_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1

CLOSURE APPROVAL
5 @ 600 AREA

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

George Allen
Governor

Becky Norton Dunlop
Secretary of Natural Resources

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
http://www.deq.state.va.us

Thomas L. Hopkins
Director

(804) 698-4000
1-800-592-5482

September 3, 1997

Lt. Col. Stacey K. Hirata
Directorate of Public Works
U.S. Army Garrison, Fort Belvoir
9430 Jackson Loop, Suite 107
Fort Belvoir, Virginia 22060-5130

Re: Buildings 625, 627, 632, 633, and 634
EPA ID# VA7213720082

Dear Lt. Col. Hirata:

On August 15, 1997, the closure units associated with the above-referenced buildings at your facility were inspected by Khoa Nguyen, a representative of the Virginia Department of Environmental Quality (Department). The inspection and required certifications show that closure had been performed in accordance with the protocol specified in the approved closure plan. The Department concurs with the conclusion of the closure reports, dated July 1996, that clean closure of Buildings 625, 627, 632, 633, and 634 at your facility has been achieved. Please note, however, that the U.S. Environmental Protection Agency retains the authority to address possible corrective action of continuing releases pursuant to the Hazardous and Solid Waste Amendments of 1984.

If you have any questions regarding this letter, please contact Khoa Nguyen of my staff at (804) 698-4128.

Sincerely,

Leslie A. Romanchik
for Thomas L. Hopkins

c: Khoa Nguyen - DEQ
Sanjay Thirunagari - DEQ
Debbie Miller - DEQ
Claire Ballard - DEQ

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 2

To Jeff Moran	From Khoa Nguyen
Co. Dewberry & Davis	Co. VDEQ
Dept.	Phone #
Fax # 703-849-0103	Fax # 804-6984234

Jon Ely - DEQ, NVRO
Robert Greaves - EPA Region III
Central Hazardous Waste File

Site: B-04 - Building 633 Hazardous Waste Storage Area

Description
SWMU B-04 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as an interim status storage facility for hazardous waste. The unit was described a 20 ft by 24 ft structure constructed of masonry blocks, with a concrete floor, and wood framed shingle roof that was originally constructed in the 1930s to serve as a munitions storage bunker. The structure was then used from the early 1980s to 1990 as a storage facility for non-regulated wastes (PCB-contaminated waste, waste paint solids, and bromoform from numerous sources.

Findings
Sampling during the closure activities conducted at the unit identified that chromium was statistically significant when compared to background samples. A health-based risk assessment was performed and concluded that the risks associated with the maximum concentrations of chromium were below risk-based standards of acceptability. A closure report that documented the decontamination, demolition, sampling, characterization, and disposal of the unit was submitted in July 1996.

Regulatory Response
A VDEQ letter dated September 3, 1997 affirmed that clean closure had been achieved for soils at the site
See **Attachment D** for a copy of the VDEQ closure letter and the July 1996 Closure Report for Building 633.

SWMU Number	SWMU Name	Closure Report	NFA Closure Date
B-04	Building 633 Hazardous Waste Storage Area	Building 633 Closure Report, July 1996	VDEQ Letter September 3, 1997

2025

B09: Former Building 1430 Transformer Storage Area

PCB TMDL ACTION PLAN – APPENDIX A-6

FORT BELVOIR

Former Building 1430 Transformer Storage Area (B09)

B09 was a former transformer storage area located at Building 1430 as shown in Figure 7. Transformers were stored both indoors and outdoors at this site. Building 1430 no longer exists and the area where the building once stood is now used as a storage area for trailers and large generators. Soil samples and wipe samples were collected in 1997 in accordance with the SWMU corrective action closure plan. The data summary is in Table A-5, Appendix A. All results were non-detect for PCBs, leading to the conclusion that the site had not been impacted and should be recommended for closure (Fort Belvoir DPW-ENRD, 2012). Figure 7 shows the location of B09.

An Administrative Closure Report was submitted recommending site closure under category AC-1 due to site investigation and corrective action being complete, and a closure report was prepared but not forwarded or approved by the regulatory agency. U.S. EPA reviewed the closure documentation and concurred in a letter dated 6 July 2012.

While transformers containing PCBs were stored at B09, secondary contaminant was present. Prior to 1991, secondary containment consisted of two metals pans where the transformers were stored. In 1991, the metals pans were replaced with the installation of secondary contaminant consisting of a concrete berm and sealed floor. Even though leaks were observed at the site, there is no indication that the environment was negatively impacted by PCBs due to the secondary containment. The area is fully paved and while there are no direct drainage swales, the closest stream is approximately 40 ft to the north-northwest, and is an unnamed tributary to Accotink Creek. The absence of PCBs at the site and lack of direct drainage leads to the conclusion that it is unlikely B09 would discharge PCBs to impaired water bodies.

Conclusion: No Further Action.

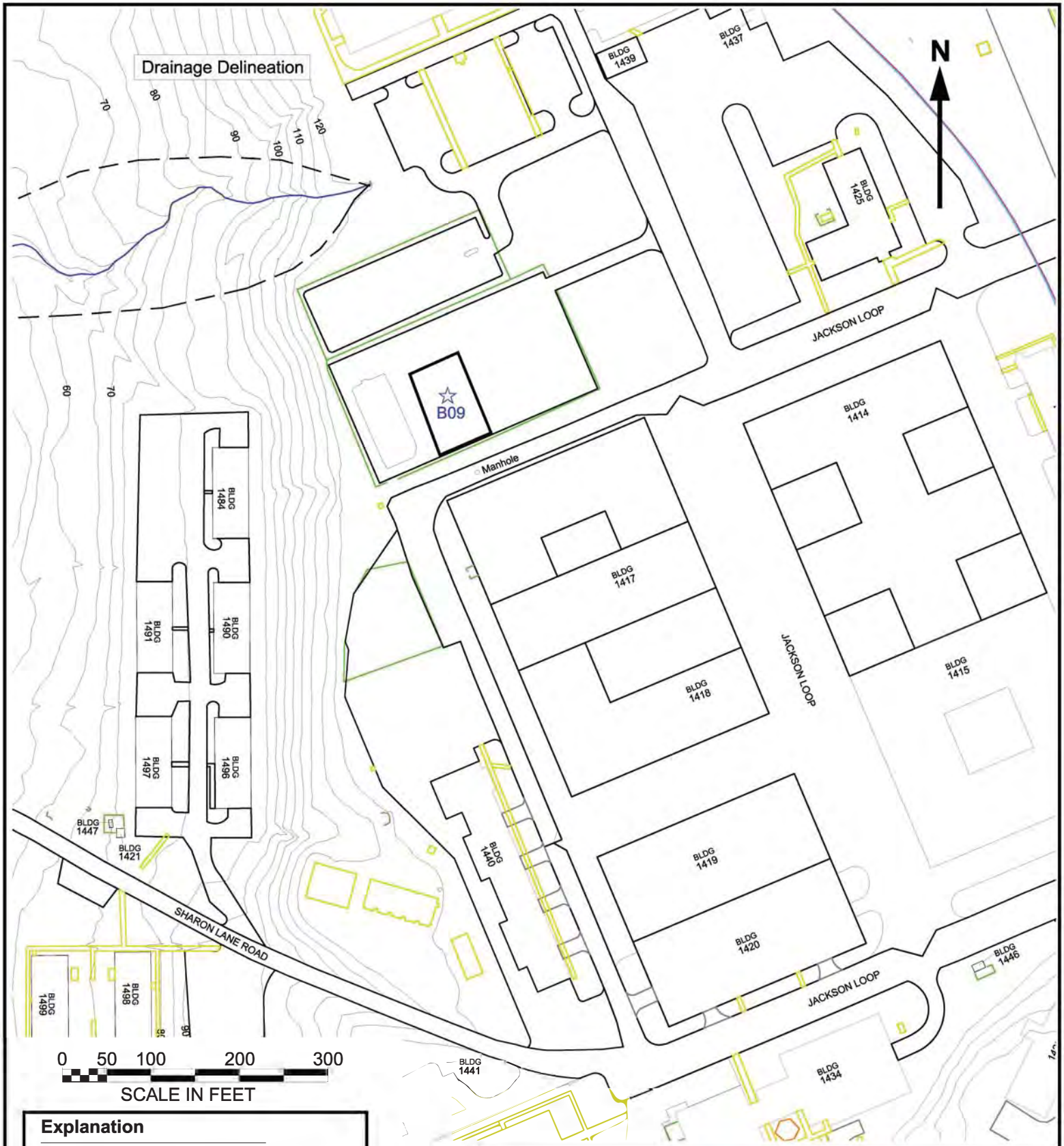
Tabe A-5: B09 Historical PCB Sampling Data

Sample ID	Sample Date	Analysis Method	Matrix	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
B1430-CONC1	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-CONC2	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-CONC3	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-CONC4	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-CONC5	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-CONC6	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL1	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL2	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL3	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL4	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL5	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL6	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL7	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL8	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL9	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL10	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL11	6/19/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
B1430-SOIL12	6/18/1997	EPA 8081	Soil	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U

PCB Wipes (1g/wipe)

Sample ID	Sample Date	Analysis Method	Matrix	Total PCBs (pg/L)	Aroclor 1016 (ug)	Aroclor 1221 (ug)	Aroclor 1232 (ug)	Aroclor 1242 (ug)	Aroclor 1248 (ug)	Aroclor 1254 (ug)	Aroclor 1260 (ug)
B1430W1	6/23/1997	EPA 600	Wipe	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
B1430W2	6/23/1997	EPA 600	Wipe	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
B1430W3	6/23/1997	EPA 600	Wipe	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
B1430W4	6/23/1997	EPA 600	Wipe	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
B1430W5	6/23/1997	EPA 600	Wipe	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
B1430W6	6/23/1997	EPA 600	Wipe	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U

U: Non-detect, Below Land Detection Limits
The source of the data: Final version of Visual Site Inspection (TetraTech, 2008).



Explanation

- ☆ Site Location
- Drainage Area Delineation
- ○ Manhole
- 50 Contour Elevation in ft
- 1492 Building Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/18/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map B09 (Former Bldg. 1430) Fort Belvoir, VA**
APPROVED WSY	DRAWING: Fig6_B09_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1

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

July 6, 2012

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval of: **Administrative Closure of 90 SWMUs Report, Main Post**, US Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Subject Report, dated October 2011 for the Administrative Closure of 90 Solid Waste Management Units (SWMUs). EPA's approval also includes the two SWMUs that were added to the Report later, SWMUs B-10 and F-05.

The reasons for eliminating listed SWMUs from further investigation includes: absence of field evidence and/or record of contaminant releases, investigation and closure under Virginia or other regulations, and SWMUs no longer existing among other reasons.

If you have any questions, feel free to contact me at 215-814-3434.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Durwood Willis, VADEQ

RCRA Corrective Action Administration Closure Report
Solid Waste Management Units
Main Post
U.S. Army Garrison Fort Belvoir, Virginia

SWMU Number	SWMU Title	Site Description	Admin Closure Category	Justification
B-09	Building T-1430 - PCB Storage Area	This former PCB storage area at T-1430 became operational in 1982. The building was designated as a storage area for PCB containing electrical transformers. The transformers were stored on two metal pans until 1991, when they were removed. A secondary spill containment system consisting of a concrete berm and a sealed floor were installed in their place. A 55 gallon drum leaking oil on bare ground was observed during the 1992 CH2M Hill SWMU Study. In 1997 the soil samples around and underneath Building T-1430 were collected and analyzed for PCBs; however, no PCBs were detected above the detection limit during the laboratory analysis. It is unknown if the Installation sent the results from the environmental investigation to VDEQ or the U.S. EPA to request NFA. According to the 2005 VSI the building was removed sometime after 1997 and the site is no longer used for storage of PCB containing generators, but for newer portable non-PCB containing generators and the building foundation is used for a secondary containment storage area since the concrete berm still exists.	**AC 1:** Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.	An environmental investigation was performed in 1997 at SWMU B-09. Soil samples were collected and analyzed for the presence of PCBs around former Building T-1430. Laboratory results showed that none of the soil samples had concentrations of PCBs above the laboratory's detection limits. This environmental investigation indicated the site had not been impacted. It is unknown to whether the results from the environmental investigation were ever sent to state or federal regulators to request closure for the site.

Administrative Closure Strategy
Solid Waste Management Units
Main Post
Fort Belvoir, Virginia

INTRODUCTION

Currently Fort Belvoir manages 204 Solid Waste Management Units (SWMUs) under a Corrective Action Program for SWMUs on Fort Belvoir's Main Post under a Resource Conservation and Recovery Act (RCRA) Part B, Permit# (EPA ID VA7213720082).

In 2006, Tetra Tech, Inc. was tasked by Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) to categorize each SWMU into one of the four corrective action classes based on the 2005 Visual Site Inspections (VSIs). All 204 SWMUs have been assigned one of four status categories based on the type action to be taken at each site. These categories include; No Further Action (NFA), Administrative Closure (AC), Confirmatory Sampling (CS), and Site Investigation (SI).

In 2009, Tetra Tech, Inc drafted the first volume of Administrative Closure Reports that included 15 separate SWMU sites, which was sent to and reviewed by U.S. EPA Region III Regulators for closure. The 15 sites all received closure between 2009 and 2010 and were removed from Fort Belvoir's RCRA Part B Permit.

During a meeting on December 7th, 2010 between representatives from Fort Belvoir DPW-ENRD, the U.S. Army Environmental Command (AEC), U.S. EPA Region III, and Tetra Tech agreed upon the drafting of a document that would briefly describe each of the 90 SWMUs that were deemed acceptable to be closed through the administrative closure process. Additionally, a brief justification for closure was included for each of the SWMU sites to support why each was categorized into one of six administrative closure categories listed below.

This second volume of Administrative Closures includes the 90 SWMU sites located on the Main Post of U.S. Army Garrison Fort Belvoir, VA that have been recommended to be closed through this administrative closure process. Below are the six administrative closure categories that each of the 90 SWMU sites fall into.

Administrative Closure (AC): SWMU sites that require action from Fort Belvoir and/or the regulators, however, all action is limited to report preparation, review, and approval for NFA. Six scenarios of site status belong in this recommendation category, as described below:

AC 1: Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.

AC 2: SWMU site no longer exists due to significant site disturbance as a result of re-grading and construction activity.

AC 3: A site component, such as historical infrastructure, needs to be removed from the SWMU site, but no sampling is required.

AC 4: The SWMU is being managed or addressed under a separate program, such as Fort Belvoir's Petroleum Management Program (PMP), Military Munitions Response Program (MMRP), Virginia Pollution Discharge Elimination System (VPDES), National Pollution Discharge Elimination System (NPDES), or Clean Water Act (CWA).

AC 5: The site is an active permitted facility.

AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.

SITE B-9

BUILDING T-1430 PCB STORAGE AREA

Description: This unit was used to store electrical transformers that contained PCBs. (See Figures 1 and 2). The metal pans described in the RCRA Facility Assessment in 1988 and the follow-up assessment of 1991 have been removed. A concrete berm (6x6-inch) and equipment ramp were added sometime after the 1991 visit to provide for spill containment. The floor, berm, and ramp were coated with some type of sealant that has deteriorated leaving large areas of the concrete floor bare. The floors are 6-inch poured concrete with 6x6-inch, 10/10 wire mesh.

The unit currently has three 55-gallon drums of PCB's and construction materials on pallets located in the designated PCB storage area. New materials such as paint, developer, acids, and corrosives are currently being stored in an adjacent area inside the building. Two empty rooms in the rear of the building may have been used for waste storage in the past. An outside storage area has transformers and partially full 55-gallon barrels sitting on wooden pallets. One transformer was observed to be leaking oil on the bare ground (see Plate 1-5).

History: The unit became operational in 1982 and was used to store electrical transformers that contained PCBs. The transformers were placed on two metal pans approximately 5-feet by 3-feet by 1/2-feet high. The pans rested directly on the concrete floor inside of Building T-1430. The waste PCB contaminated transformer oil was picked up and removed on an on-call basis by a contractor for off-site disposal. There was evidence oil leaking from a transformer onto the floor which at the time was unbermed and not sealed.

Action Plan:

Based on the above, the following actions shall be taken to close this Solid Waste Management Unit.

(1) All materials currently stored within the storage building shall be removed and placed in an authorized storage area. Any waste materials identified during this phase of the SWMU closure action shall be appropriately disposed of by Fort Belvoir personnel. Any PCB wastes or suspect PCB wastes shall be moved to the Fort Belvoir PCB storage/accumulation area at Building 1490.

(2) The concrete floor in each room of the storage building shall be visually inspected for cracks and stains.

(3) Six wipe samples shall be collected and analyzed for PCB's from the surface of the concrete pad inside the storage building and from the area within the bermed PCB storage area at the locations shown in Figure 3.

(4) Six sample sets shall be collected from the concrete pad and the underlying soils at the locations shown in Figure 4. Each sample set shall consists of one core sample of the

concrete pad and one plug sample from the first 6-inch interval immediately beneath the concrete pad.

(5) If the visual inspection of the concrete pad indicates the presence of stains or cracks (which could potentially lead to contamination of the soil underneath the concrete pad) the sample location closest to the stain or crack shall be adjusted to collect a sample from the midpoint of the crack.

(6) Six samples shall be collected from the soil surrounding the concrete pad at the locations shown in Figure 5. Each sample shall consist of one plug sample taken from the 6-inch to 12-inch interval below the ground surface.

(7) All samples collected under this Action Plan shall be analyzed for the following: PCB's by Method 8080 (PCB only).

(8) All samples collected under this Action Plan shall be analyzed for Hazardous Waste Characterization in accordance with the Virginia Hazardous Waste Management Regulations.

(9) If the results of the wipe and soil samples indicate contamination above acceptable levels, a decontamination/remediation plan for the storage building and surrounding area shall be developed.

(10) If analysis of the samples collected under this SWMU action plan indicates that no contamination is present then Fort Belvoir DPW shall place a placard above the entrance way to the storage area indicating that no waste materials or chemicals are to be stored within the facility.

2025

B10: Building 190 Former Indoor Storage Room

PCB TMDL ACTION PLAN – APPENDIX A-7

FORT BELVOIR

Building 190 Former Indoor Storage Room (B10)

SWMU B10 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as a 35 ft by 15 ft room located in Building 190, the Vehicle Repair Shop. The room was used to store PCB containing materials from 1980 to 1981. The PCB materials were in either drums or within the original equipment until the unit ceased to be operational in 1981. The concrete floor had an impervious epoxy coating and the doorway had secondary containment controls (curbing). According to the 1992 CH2M Hill SWMU Study the room had been decontaminated after all the PCB materials were removed sometime after 1981. Figure 8 shows the location of B10.

During the 2005 VSI of the unit, the room was observed to have been completely renovated and its dimensions had been decreased to 14.5 ft by 8.5 ft and new drywall had been installed. No evidence of the storage of PCBs was observed. There is no record noted in the file material of any reported release from this unit.

A Closure Report was completed in February 1998 and received concurrence from VADEQ in a letter dated 21 May 1999. An Administrative Closure Report was submitted recommending site closure under category AC-6 due to a review of historical documentation of this site, and there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions. U.S. EPA reviewed the closure documentation and concurred in a letter dated 6 July 2012.

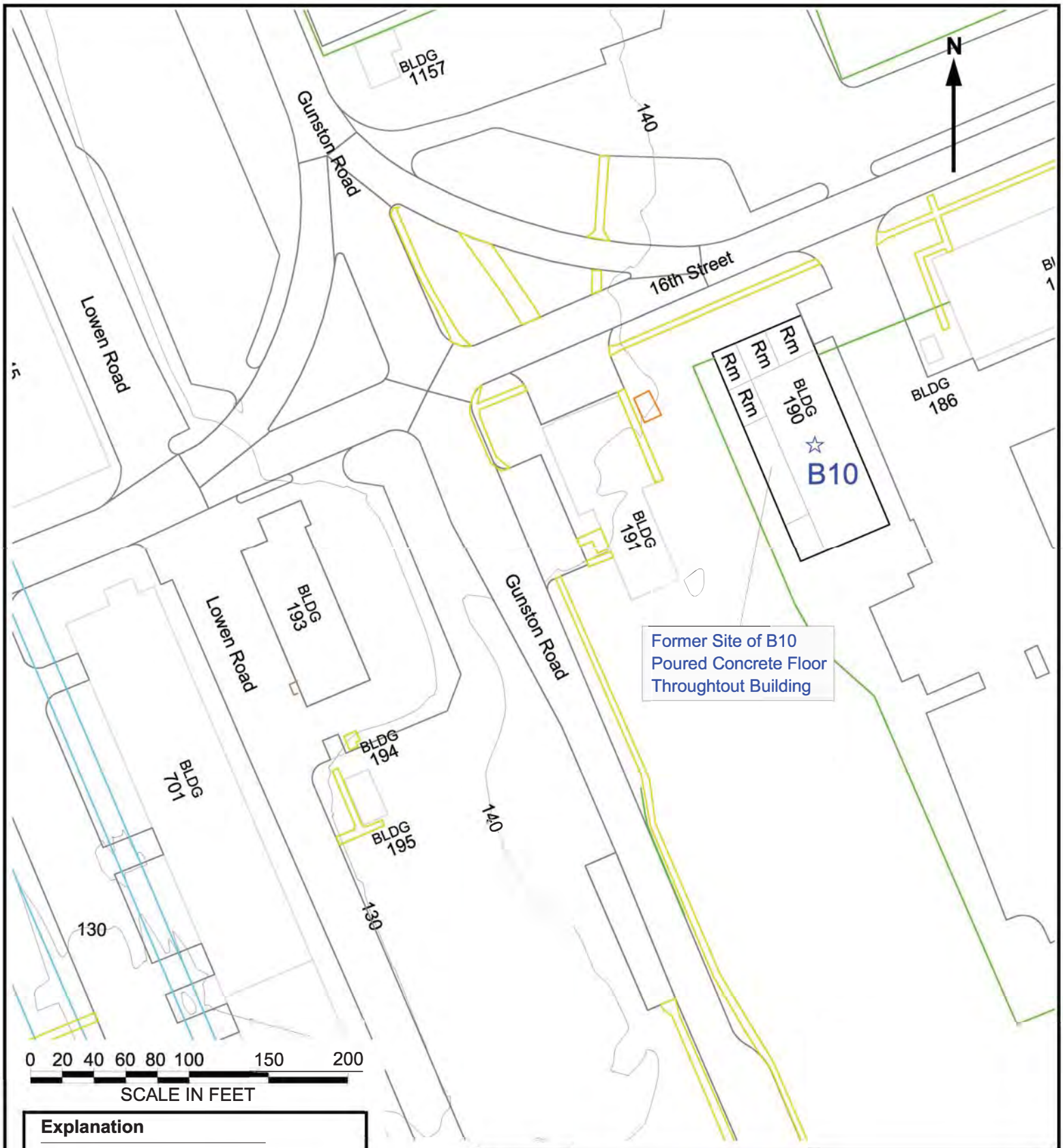
As any PCB containing equipment was stored indoors and not exposed to precipitation, secondary containment was present, the building was decontaminated and renovated, and regulatory closure was achieved; it is unlikely B10 would discharge PCBs to impaired water bodies.

Conclusion: No Further Action.

Tabe A-6: B10 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA: Not Available



Explanation

- ☆ Site Location
- Drainage Area Delineation
- Pavilion
- 130 Contour Elevation in ft
- 701 Building and Number
- Road
- Sidewalk
- Fence
- Railroad

DATE 1/18/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map B10 (Former Bldg. 190) Fort Belvoir, VA**
APPROVED WSY	DRAWING: Fig7_B10_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1

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

July 6, 2012

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval of: **Administrative Closure of 90 SWMUs Report, Main Post**, US Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Subject Report, dated October 2011 for the Administrative Closure of 90 Solid Waste Management Units (SWMUs). EPA's approval also includes the two SWMUs that were added to the Report later, SWMUs B-10 and F-05.

The reasons for eliminating listed SWMUs from further investigation includes: absence of field evidence and/or record of contaminant releases, investigation and closure under Virginia or other regulations, and SWMUs no longer existing among other reasons.

If you have any questions, feel free to contact me at 215-814-3434.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Durwood Willis, VADEQ

RCRA Corrective Action Administration Closure Report
Solid Waste Management Units
Main Post
U.S. Army Garrison Fort Belvoir, Virginia

SWMU Number	SWMU Title	Site Description	Admin Closure Category	Justification
B-10	Building 190 Former PCB Storage Room	SWMU B-10 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as a 35 ft by 15 ft room located in Building 190, the Vehicle Repair Shop. The room was used to store PCB containing materials from 1980 to 1981. The PCB materials were in either drums or within the original equipment until the unit ceased to be operational in 1981. The concrete floor had an impervious epoxy coating and the doorway had secondary containment controls (curbing). According to the 1992 CH2M Hill SWMU Study the room had been decontaminated after all the PCB materials were removed sometime after 1981. During the 2005 VSI of the unit, the room was observed to have been completely renovated and its dimensions had been decreased to 14.5ft by 8.5ft and new drywall had been installed. No evidence of the storage of PCBs was observed. There is no record noted in the file material of any reported release from this unit.	AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Historical records from SWMU B-10 indicate that there are no documented releases or spills related to the storage of PCBs from 1980 to 1981.Therefore, this site does not meet the definition of a SWMU. Additionally, Building 190 currently belongs to the Army Broadcasting Service, which moved into the building around 2002 - 2003 and did major renovations to it at that time.
B-11	**Building 317A - Hazardous Waste Storage Area**	SWMU B-11 was described as a three room cinderblock building that was used starting around 1985. The building was approximately 25 ft by 12 ft and was used for storage of waste solvents, acids, and gas cylinders generated by various laboratories and departments in the secured "300 Area". Only one room was used for the storage of the hazardous materials. The 1988 Phase II RFA indicted that there were no documented releases of spills related to the site and all waste materials were removed from Building 317's storage room in 1988. According to the VSI, Building 317 was demolished in the mid-1990s and a parking lot is now located on-site.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Historical records from SWMU B-11 indicate that there are no documented releases or spills related to the storage of the hazardous materials in the room located in Building 317A. Therefore, this site does not meet the definition of a SWMU. Additionally, Building 317A was demolished in the mid-1990s and a parking lot was built in its place.

Administrative Closure Strategy
Solid Waste Management Units
Main Post
Fort Belvoir, Virginia

INTRODUCTION

Currently Fort Belvoir manages 204 Solid Waste Management Units (SWMUs) under a Corrective Action Program for SWMUs on Fort Belvoir's Main Post under a Resource Conservation and Recovery Act (RCRA) Part B, Permit# (EPA ID VA7213720082).

In 2006, Tetra Tech, Inc. was tasked by Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) to categorize each SWMU into one of the four corrective action classes based on the 2005 Visual Site Inspections (VSIs). All 204 SWMUs have been assigned one of four status categories based on the type action to be taken at each site. These categories include; No Further Action (NFA), Administrative Closure (AC), Confirmatory Sampling (CS), and Site Investigation (SI).

In 2009, Tetra Tech, Inc drafted the first volume of Administrative Closure Reports that included 15 separate SWMU sites, which was sent to and reviewed by U.S. EPA Region III Regulators for closure. The 15 sites all received closure between 2009 and 2010 and were removed from Fort Belvoir's RCRA Part B Permit.

During a meeting on December 7th, 2010 between representatives from Fort Belvoir DPW-ENRD, the U.S. Army Environmental Command (AEC), U.S. EPA Region III, and Tetra Tech agreed upon the drafting of a document that would briefly describe each of the 90 SWMUs that were deemed acceptable to be closed through the administrative closure process. Additionally, a brief justification for closure was included for each of the SWMU sites to support why each was categorized into one of six administrative closure categories listed below.

This second volume of Administrative Closures includes the 90 SWMU sites located on the Main Post of U.S. Army Garrison Fort Belvoir, VA that have been recommended to be closed through this administrative closure process. Below are the six administrative closure categories that each of the 90 SWMU sites fall into.

Administrative Closure (AC): SWMU sites that require action from Fort Belvoir and/or the regulators, however, all action is limited to report preparation, review, and approval for NFA. Six scenarios of site status belong in this recommendation category, as described below:

> **AC 1:** Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.
>
> **AC 2:** SWMU site no longer exists due to significant site disturbance as a result of re-grading and construction activity.
>
> **AC 3:** A site component, such as historical infrastructure, needs to be removed from the SWMU site, but no sampling is required.

AC 4: The SWMU is being managed or addressed under a separate program, such as Fort Belvoir's Petroleum Management Program (PMP), Military Munitions Response Program (MMRP), Virginia Pollution Discharge Elimination System (VPDES), National Pollution Discharge Elimination System (NPDES), or Clean Water Act (CWA).

AC 5: The site is an active permitted facility.

AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.

Soil Closure Approval
@ 19 sites

COMMONWEALTH of VIRGINIA

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
http://www.deq.state.va.us

Dennis H. Treacy
Director

(804) 698-4000
1-800-592-5482

May 21, 1999

Lt. Col. Stacey K. Hirata
Director of Installation Support
U.S. Army Garrison, Fort Belvoir
9430 Jackson Loop, Suite 107
Fort Belvoir, Virginia 22060-5130

Re: U.S. Army Garrison, Fort Belvoir
EPA ID# VA7213720082 and VA1210080906

Dear Lt. Col. Hirata:

On May 28, 1998, November 9, 1998, and May 3, 1999, several closure units at your facility, referenced above, were inspected by Khoa Nguyen, a representative of the Virginia Department of Environmental Quality (Department). The inspection and required certifications show that closure had been performed in accordance with the protocol specified in the approved closure plans.

The Department has also completed a review of the following closure submittals:

- Closure reports for Buildings 363 and 714, dated December 1996;
- Closure reports for Buildings 308, 322, 1957, 2021, and the Fire Training Area at Davison Army Airfield, dated November 1997;
- Closure reports for the Marina and Buildings 357A, 707, 1949/1950, dated December 1997;
- Closure reports for Buildings 181 and 324, dated January 1998;
- Closure reports for Buildings 190, 677, 1116, 1146, 2034, and 2585, dated February 1998;

- Supplementaries to the closure reports transmitted by Fort Belvoir letters dated August 4, 1998, November 20, 1998, February 24, 1999, and May 3, 1999.

The available information and the closure certifications indicate that the performance standards for clean closure have been achieved for soils at Buildings 181, 190, 308, 322, 324, 357A, 363, 677, 707, 714, 1116, 1146, 1949/1950, 1957, 2021, 2034, 2585, the Marina, and Davison Army Airfield.

Please note, however, that the U.S. Environmental Protection Agency retains the authority to address possible corrective action of continuing releases pursuant to the Hazardous and Solid Waste Amendments of 1984.

If you have any questions regarding this letter, please contact Khoa Nguyen of my staff at (804) 698-4128. Thank you for your cooperation during the closure process.

Very truly yours,

Leslie A. Romanchik
for Dennis H. Treacy

c: Khoa Nguyen - VDEQ
Sanjay Thirunagari - VDEQ
Charlotte Carroll -VDEQ
Jon Terry - VDEQ, NVRO
Claire Ballard - VDEQ
Melissa Porterfield - VDEQ
Robert Greaves - EPA Region III
Central Hazardous Waste File

SITE B-10

FORMER PCB STORAGE ROOM (BUILDING 190)

Description: This inactive unit is a 15- by 35 foot room within Building 190 (see Figures 1 and 2) that was modified for PCB storage. Modification reportedly included an epoxy coating over the concrete floor and construction of a concrete berm around the perimeter of the room. Currently, the room has been divided into two storage areas. The northern half of the unit is used for the storage of food service equipment and cleaning supplies while the southern half is used for the storage of miscellaneous radio broadcasting equipment. The remainder of Building 190 was reportedly used as a vehicle repair shop, but is currently used only for vehicle storage. The concrete berm noted in previous visits was not present during this site visit (see Plate 1).

History: This unit became operational in 1980 and ceased operations in 1981. During this time, PCBs were reportedly stored here in either drums or within the original equipment items (like electrical transformers or ballasts). According to previous reports, the epoxy coating on the floor is impervious to PCBs, and since the area was bermed, small releases would have been contained. Previous reports also indicate that the room was decontaminated after the PCB-containing materials were removed, although no closure sampling data were located to confirm decontamination. There is no record of any reported release from this unit noted in the file material.

Action Plan:

Based on the above, the following actions shall be taken to close this Solid Waste Management Unit:

1. All materials currently stored within the storage rooms shall be removed and placed in an authorized storage area. Any waste materials identified during this phase of the SWMU closure action shall be appropriately disposed of by Fort Belvoir personnel. Any PCB wastes or suspect PCB wastes shall be moved to the Fort Belvoir PCB storage/accumulation area at Building 1490.

2. The concrete floor in each of the storage rooms shall be visually inspected for stains and structural cracks.

3. Eight wipe samples shall be collected and analyzed for PCBs from the surface of the concrete pad inside the storage building and from the area within the bermed PCB storage area at randomly determined locations.

4. If the visual inspection of the concrete pad (within the storage rooms) indicates the presence of stains and structural cracks (which could potentially lead to contamination of the soil underneath the concrete pad), a sample set shall be collected from the midpoint of the crack or stain. Each sample set shall consist of one core sample of the

concrete pad and one plug sample from the first 6-inch interval immediately beneath the concrete pad.

5. All wipe samples collected under this Action Plan shall be analyzed for the following: PCBs by Method 8080 (PCB only).

6. All soil samples collected under this Action Plan shall be analyzed for PCBs by Method 8080 (PCB only) and Hazardous Waste Characterization in accordance with the Virginia Hazardous Waste Management Regulations.

7. If the results of the wipe and soil samples indicate contamination above acceptable levels, a Decontamination/Remediation plan for the storage building and surrounding area shall be developed.

8. If analysis of the samples collected under this SWMU action plan indicates that no contamination is present, Fort Belvoir DPW shall place a placard above the entrance way to the storage area indicating that no waste materials or chemicals are to be stored within the facility and this SWMU shall be considered closed.

Note: Information reviewed during the development of this Closure Action Plan was selected from the following sources (where possible): the 1988 U.S. EPA RCRA Facility Assessment by A.T. Kearny, Inc; the 1992 Solid Waste Management Unit Study by CH2M Hill; site specific reports and analytical data from the Fort Belvoir Directorate of Public Works, Environmental and Natural Resource Division; facility personnel interviews; and site reconnaissance.

2025

L03: Former Asphalt Storage Pad; Building 2596

PCB TMDL ACTION PLAN – APPENDIX A-8

FORT BELVOIR

Former Asphalt Storage Pad near Building 2596 (L03)

L03 was not considered as an official PCB storage area. In 1988, transformers were reported as being located at the site and the presence of fluid staining the asphalt was noted (Kearney, 1988). However, no known sampling occurred at the site and there is no documentation of PCB contamination at the site as presented in Figure 9.

The area that was once the asphalt pad has been demolished and redeveloped as part of a parking lot for Humphreys Engineering Center. This area would drain to stormwater swales, to an unnamed tributary, to the wetlands in Jackson Miles Abbott Wetland Refuge, to Mulligan Pond, and to Dogue Creek. It is unlikely the area described by L03 would discharge PCBs to impaired water bodies and therefore the site is recommended for No Further Action.

Environmental soil sampling as part of the Phase I investigation work was started at L03 in winter 2012 and was completed in August of 2013. Field activities included the collection of six soil boring samples from three soil borings. The soil boring locations were selected based upon the historical description and location of the former drum, debris, and transformer storage area. The three soil borings were advanced to a depth of 4.5 bgs due to the asphalt access road and associated fill that was situated on the former storage site. No PCBs were detected in any of the subsurface soil boring samples collected during the investigation at SWMU L03.

Based on the findings in the Phase I investigation, Fort Belvoir recommended No Further Action at

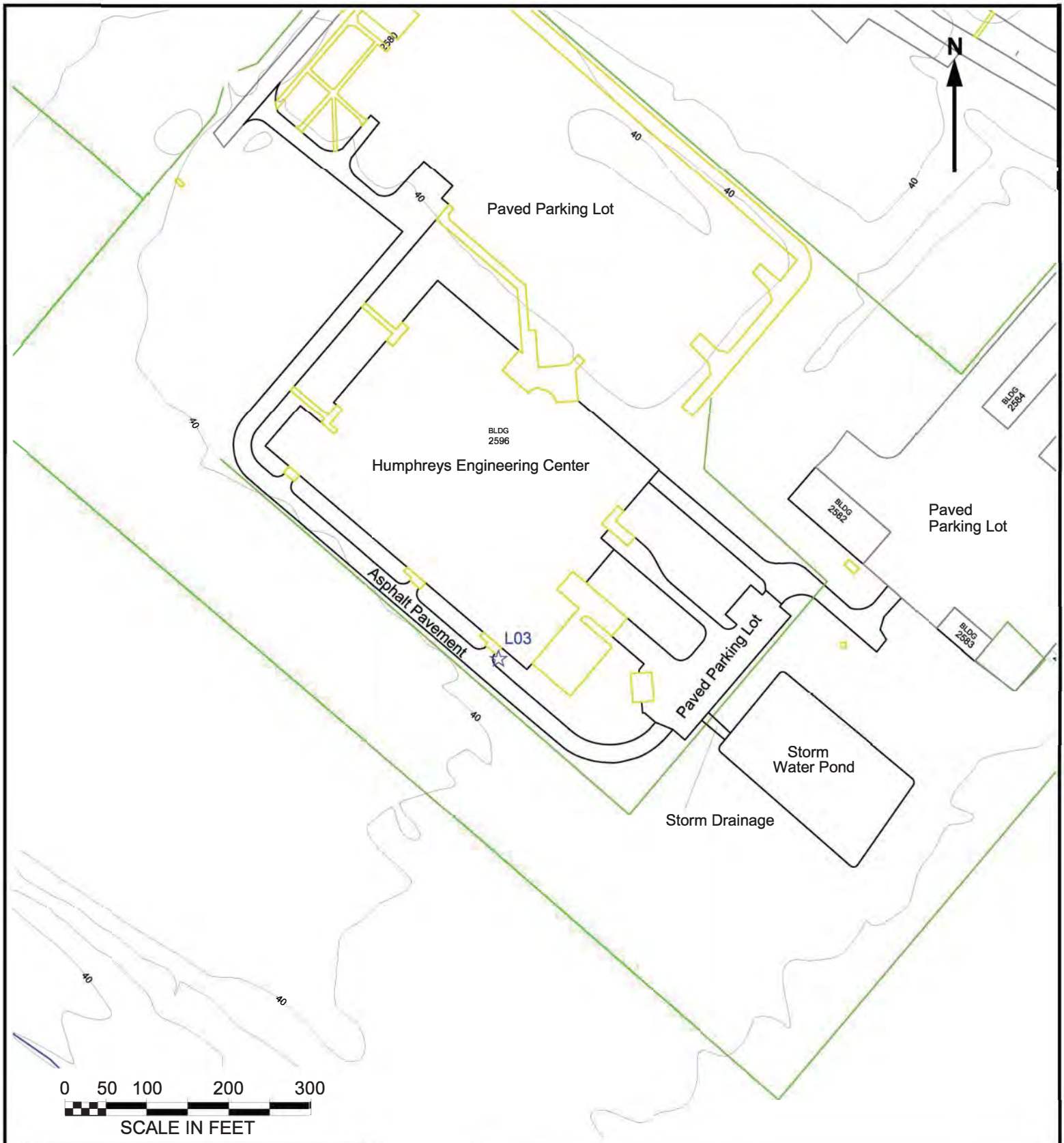
SWMU L03. The U.S. EPA concurred with the recommendation in a letter dated 17 December 2013. The lack of detections for PCBs in the soil boring samples collected at L03 suggests that the former activities at the site have not affected the soils in the vicinity of the former drum, debris, and transformer storage area. The storage pad and old building have been demolished and the area entirely redeveloped, indicating that it is unlikely L03 would discharge PCBs to impaired water bodies. In addition, L03 is now considered a “legacy site” due to the fact that this parcel of land is no longer a part of Fort Belvoir, is not included in Belvoir’s land use inventory and is not covered by either the MS4 or ISW permits. HECSA has owned and operated this area since 1981. See Appendix C-7 for Memorandum for record from ENRD and available land transfer documents.

Conclusion: No Further Action.

Tabe A-7: L03 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
L03-SB01-2.5-4.5	1/15/2013	Soil	ND	NA	ND	ND	ND	ND	ND	ND	ND
L03-SB02-2.5-4.5	1/15/2013	Soil	ND	NA	ND	ND	ND	ND	ND	ND	ND
L03-SB03-2.5-4.5	1/15/2013	Soil	ND	NA	ND	ND	ND	ND	ND	ND	ND
L03-SB-DUP	1/15/2013	Soil	ND	NA	ND	ND	ND	ND	ND	ND	ND

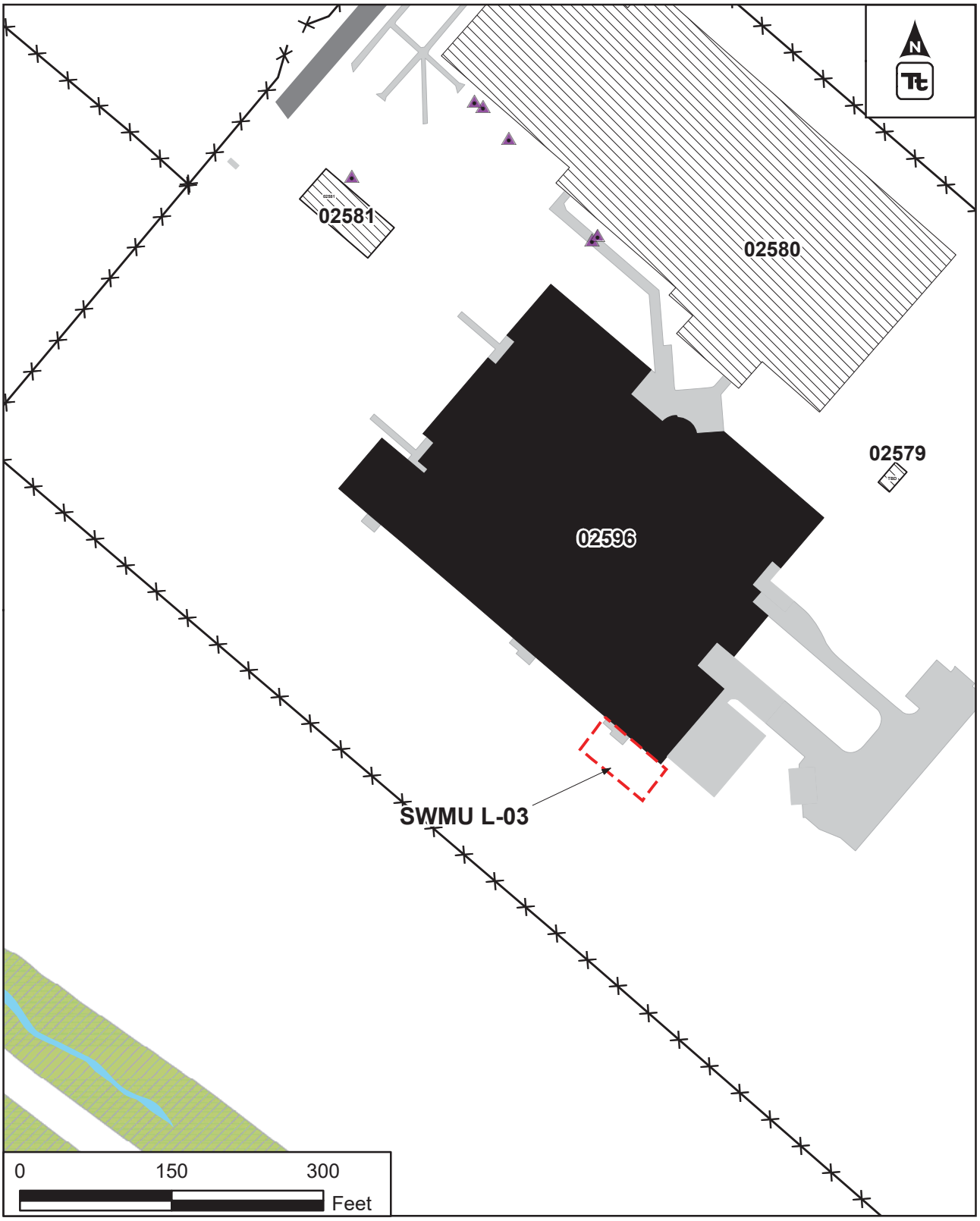
NA: Not Available.
The source of this data: Final RCRA Facility Investigation Report Solid Waste Management Unit (SWMU) L-03 (Tetra Tech, 2013).



Explanation

- ☆ Site Location
- Drainage Area Delineation
- 40 Contour Elevation in ft
- 2596 Building and Number
- Road
- Sidewalk
- Fence

DATE 1/18/2013	TIDEWATER INC	
DRAWN HS	**Site Detailed Location Map L03 (Paved Asphalt Parking Lot at Bldg. 2596) Fort Belvoir, VA**	
APPROVED WSY	DRAWING: Fig8_L03_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET 1/1



LEGEND

- Humphreys Engineer Center
- Approximate SWMU L-03 Boundary
- Demolished Buildings
- Fence
- Existing Buildings
- UST/AST
- Water Feature
- Riparian Area Buffer

Solid Waste Management Unit (SWMU) L-03 Site Configuration

Sources: Fort Belvoir GIS, 2006; Tetra Tech GIS, 2008.

DEPARTMENT OF THE ARMY
U.S. ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY GARRISON, FORT BELVOIR
DIRECTORATE OF PUBLIC WORKS
9430 JACKSON LOOP, SUITE 100
FORT BELVOIR, VIRGINIA 22060-5116

REPLY TO
ATTENTION OF

IMBV-PW

25 January 2018

MEMORANDUM FOR Record

SUBJECT: Removal of Humphreys Engineer Center Support Activity (HECSA) from the 2013 – 2018 Municipal Storm Sewer System (MS4) Permit Coverage

1. HECSA was covered under the 2008 – 2013 Municipal Separate Storm Sewer System (MS4) Permit #VAR040093. The 2010 Census Urbanized Area Reference Map for Washington, DC-VA-MD, Sheet 6 was reviewed as part of the preparation of the 2013 – 2018 Registration Statement for renewal of the MS4 Permit and it was determined that HECSA is not located within an urbanized area. Therefore, MS4 permit coverage is not legally required. Additionally, HECSA is owned and operated by U.S. Army Corps of Engineers. Therefore, Fort Belvoir has no legal responsibility to cover HECSA under the Fort Belvoir MS4 Permit. Via email dated 5 April 2013, HECSA notified Fort Belvoir that their legal review determined that HECSA did not need a MS4 permit.

2. For the 2018 – 2023 Registration Statement for MS4 Permit renewal, the status of HECSA has not changed. Therefore, the statement in the MS4 Program Plan that HECSA is not covered under the MS4 Permit will remain as a point of clarification as to what is covered under the 2018 – 2023 MS4 Permit #VAR040093.

3. Point of Contact is Pamela Couch, Natural Resource Specialist, at 703-806-3406.

Pamela Couch
Installation Point of Contact

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MARYLAND 21203

REPLY TO ATTENTION OF:
NABRE-M

8 April 1981

SUBJECT: Transfer of Accountability of 583 Acres of Land with Improvements at Fort Belvoir, Virginia, from Military Account to Civil Account

Commander
U. S. Army Engineer Center & Fort Belvoir
ATTN: ATZA-FER/Mr. James McGinty
Fort Belvoir, VA 22060

1. Inclosed for your information and records is a fully executed copy of DD Form 1354, xeroxed copy of Metes and Bounds Description and Real Estate Drawing NAD 37, Sheet 4 of 8, dated 18 September 1944.

2. This DD Form will serve as a credit voucher for the purpose of dropping accountability for the property from your records.

FOR THE DISTRICT ENGINEER:

G. R. BOGGS
Chief, Real Estate Division

3 Incl
as

Subject: *Report of termination of instrument.*

~~XXXXXX~~: 19 APR 1981

TO: RE FILE

You are hereby notified of the termination of the following-described instrument in accordance with the terms thereof:

(*a*) *Symbol number:* DACA-31-4-71-159

(*b*) *Name and address of grantee:* Coastal Engineering Research Center
5201 Little Falls Road
Washington, D.C. 22060

(*c*) *Kind of instrument:* Permit

(*d*) *Location:* Fort Belvoir, VA

(*e*) *Effective date of termination:* 15 April 1981

(*f*) *How terminated:* property transferred to Corps of Engineers

(*g*) *Compliance with conditions of instrument as to vacation, removal of property, and restoration of premises:* Complied with.

David J Caruso
DAVID J. CARUSO
Chief, Real Estate Division

Inclosure:

Distribution: (as checked)

☐ *Division Engineer, Real Estate*
☐ OTHER:
Lessee
CDR, Fort Belvoir
RE FILE

M & D Branch, ATTN: R. Webb
P & C Branch, ATTN: E. Brown

ENG FORM 1 OCT 75 1368 EDITION OF APR 67 IS OBSOLETE. (ER 405—1—800)

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

Mr. Patrick McLaughlin
U.S. Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

December 17, 2013

Subject: EPA Approval of RFI Phase 1 Reports for
6 SWMUs on Main Post
U.S. Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The U.S. Environmental Protection Agency (EPA) reviewed the RCRA Corrective Action Facility Investigation Phase 1 Reports (RFIs) for 6 Solid Waste Management Units (SWMUs) located on the Main Post. EPA approves the Reports and the recommendations of **No Further Action (NFA)** with no Land Use Controls requirements necessary for each of the following SWMUs:

E-09 – RFI Final dated August 2013;

E-10 – RFI Final dated March 2009;

E-12 – RFI Final dated May 2013;

L-03 - RFI Final dated August 2013;

L-47 – RFI Final dated August 2013;

N-20 – RFI Final dated May 2013.

If you have any questions or comments, contact me at 215-814-5786 or smith.barbara@epa.gov.

Regards,

Barbara Smith, Project Manager
Office of Remediation

e-Copy: Amy Martin - Ft. Belvoir, MP
Wade Smith -VDEQ
Laura Galli -VDEQ

Semivolatile Organic Compounds
Benzo(a)anthracene was detected in all six primary soil boring samples and duplicate sample collected from the 2.5 foot to 4.5 foot interval at L03-SB01. Detected concentrations of benzo(a)anthracene ranged from 2.6 ug/Kg to 17 ug/Kg, which did not exceed the analyte's corresponding residential and industrial RSL values of 150 ug/Kg and 2,100 ug/Kg, respectively. Detected concentrations in the duplicate soil boring sample, L03-SB01(2.5-4.5ft)-DUP and in primary soil boring sample, L03-SB03(0.5-2.5ft), exceeded benzo(a)anthracene corresponding risk-based SSL DAF 1 benchmark of 10 ug/Kg, but did not exceed its risk-based DAF 10 benchmark of 100 ug/Kg. There are no federally enforceable MCL-based SSLs for benzo(a)anthracene. These exceedances of benzo(a)anthracene are slight and did not exceed their corresponding RSL values, as well as these detections are not considered significant as a DAF 10 benchmark is more appropriate at SWMU L-03

Benzo(a)pyrene was detected in the duplicated soil boring sample, L03-SB01(2.5-4.5ft)-DUP and L03-SB03(0.5-2.5ft) at concentrations of 14 ug/Kg and 12 ug/Kg. Both of these detected concentrations of benzo(a)pyrene did not exceed the analyte's corresponding residential and industrial RSL values of 15 ug/Kg and 210 ug/Kg. Additionally, none of the detected concentrations of benzo(a)pyrene exceeded its MCL-based DAF 1 and DAF 10 benchmarks of 240 ug/Kg and 2,400 ug/Kg. The two detected concentrations exceeded benzo(a)pyrene's corresponding risk-based SSL DAF 1 benchmark of 3.5 ug/Kg, but did not exceed its risk-based DAF 10 benchmark of 35 ug/Kg. The MCL-based SSLs for benzo(a)pyrene are legally enforceable and detected concentrations of this analyte at SWMU L-03 were substantially lower than these benchmark values; therefore, these detections are not considered significant.

Polychlorinated Biphenyls
No PCBs were detected in any of the subsurface soil boring samples collected during the investigation at SWMU L-03. Subsequently, no PCBs exceeded their corresponding RSL or SSL values. Therefore, no media cleanup standards are proposed or necessary at SWMU L-03.

Recommendation
The lack of significant detections of chemicals of concern in the soil boring samples collected at L-03, suggests that the former activities at the site have not affected the soils in the vicinity of SWMU L-03. This indicates that SWMU L-03 does not pose an unacceptable risk to human health or the environment.

The following recommendation was selected for SWMU L-03 from four possible courses of action which are stated in Fort Belvoir's RCRA Part B, Permit US EPA ID VA7213720082 Module IV, Site Wide Corrective Action;

> (1) No further action required, if the analytical results of sampling do not indicate the presence of hazardous waste or hazardous constituents, and the present physical condition and operating conditions of the SWMU/AOC are such that there is no likelihood of a release or additional release of hazardous waste or hazardous constituents from such SWMU.

SITE L-3

DRUM, DEBRIS AND TRANSFORMER STORAGE AREA

Description: No physical evidence of Unit L-3 or its former location was found during the Visual Site Inspection (VSI) conducted in conjunction with the preparation of this document (Reference 1). This former unit was reportedly located on the asphalt-paved parking area to the south of the wave tank at the Coastal Engineering Research Center (Reference 2, Figures 1 & 2). Facility personnel identified the approximate former location of Unit L-3 during the current VSI. The area formerly occupied by this unit is now an asphalt-paved parking lot and grassed area (Photograph 1). According to facility personnel, the former asphalt pad had recently been removed and replaced with the new asphalt pavement. No evidence of a release from this former unit was observed during the current VSI.

History: Reference 2 reported that five 55-gallon drums that appeared to contain an oily waste, two transformers on wooden pallets and other debris were stored on a cracked and stained asphalt pad. The transformers were reported as intact, but no information about their age or contents was obtained during that VSI.

During the VSI performed for the preparation of Reference 3, four empty 55-gallon drums and other apparent salvage materials were observed at the site (Photograph 2). A facility representative reported that the transformers had been removed in late 1990 or early 1991, and that he recalled that the PCB concentration in those transformers was around 50 parts per million (Reference 3). Reference 3 does not report evidence of a release at this site.

Action Plan: Because of the lack of detailed information about the precise location of this unit and the absence of existing physical evidence, **no further action** at this unit is recommended.

References: The following sources were reviewed and considered in preparation of this document:

1. Interview with site personnel, and VSI conducted September 1998.

2. *Draft Phase II RCRA Facility Assessment of the U.S. Army Engineer Center and Fort Belvoir, Virginia*, dated September 13, 1988, prepared by A.T. Kearney, Inc., of Alexandria, Virginia, for U.S. Environmental Protection Agency, Region III, Philadelphia, Pennsylvania.

3. *Solid Waste Management Unit Study, U.S. Army, Fort Belvoir*, dated July 1992, prepared by CH2M Hill, Reston, Virginia.

2025

L04: Former Outdoor Concrete Pad Transformer Storage Area

PCB TMDL ACTION PLAN – APPENDIX A-9

FORT BELVOIR

Hangar 3126 Former Outdoor Concrete Pad Transformer Storage Area (L04)

L04 was an outdoor concrete pad that housed active transformers as shown in Figure 10. Leaking fluid was visible in 1988 (Kearney, 1988) which would have been exposed to precipitation and potentially impacted an open water body. Soil samples collected in 1997 confirmed the absence of PCBs in soils at the site above laboratory detection limits (Fort Belvoir, 1998). The summary of the soil sample data collected is presented in Table A-8, Appendix A.

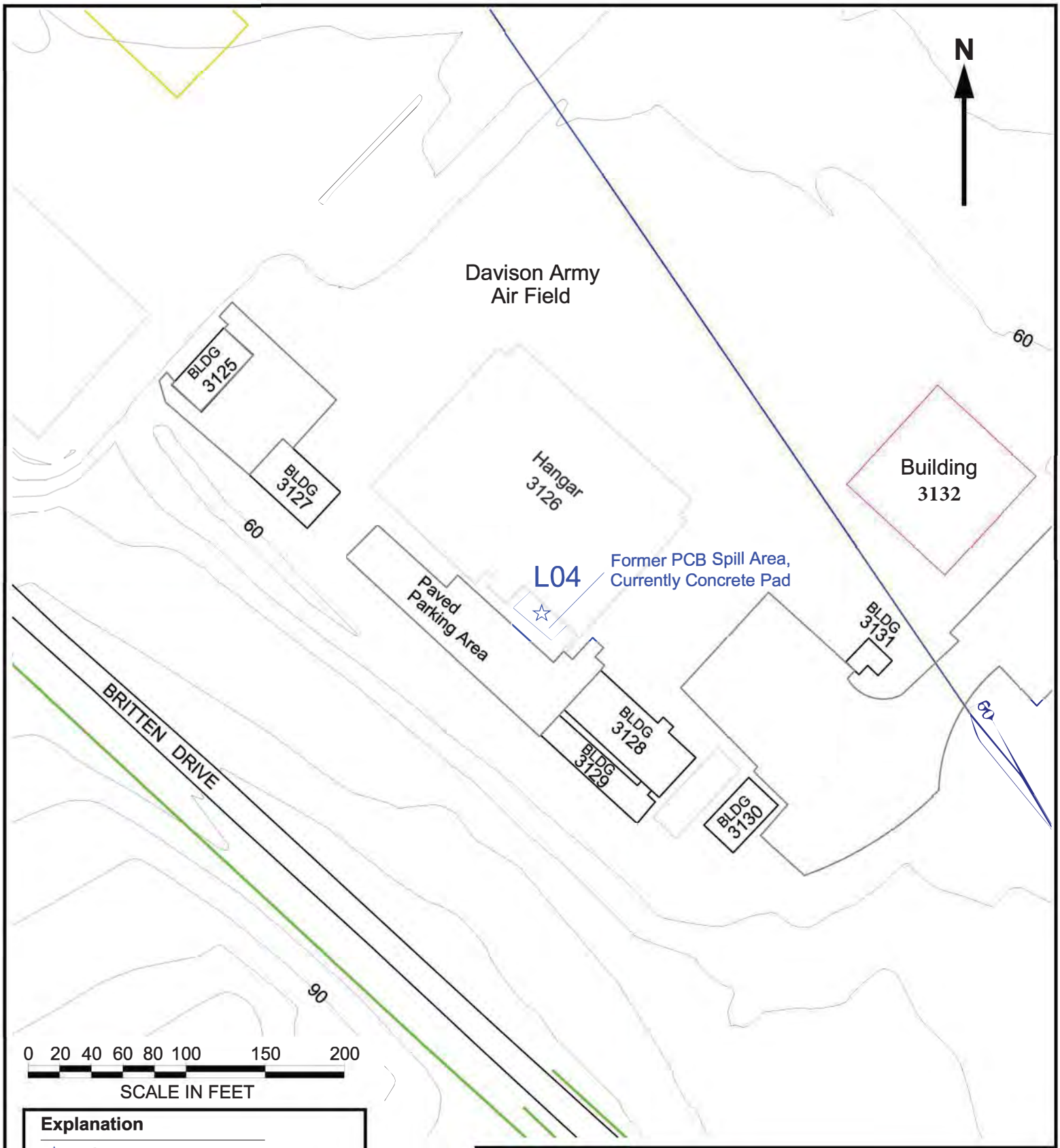
An Administrative Closure Report was submitted recommending site closure under category AC-6 due to a review of historical documentation of this site, and there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions. The transformers were taken offline in 1998 and during the 2005 VSI it was noted that all the transformers and pads had been removed. U.S. EPA reviewed the closure documentation and concurred in a letter dated 6 July 2012. There is no longer any evidence of the transformer area and the site has been redeveloped as a picnic and barbeque area and is now covered with concrete. Any residual PCBs at the site were below the laboratory detection limits and the area is now be covered by a concrete pad and no longer exposed to precipitation. Additionally, a grassy area between L04 and the nearest drainage swale would restrict sediment movement reducing the potential for PCB discharge to impaired waters.

Conclusion: No Further Action.

Tabe A-8: L04 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
SN: 2448702	1/31/1997	Transformer Oil	EPA 600/4-B1-045	6	NA	NA	NA	NA	NA	NA	NA
SN: 1728509	1/31/1997	Transformer Oil	EPA 600/4-B1-045	ND	NA	NA	NA	NA	NA	NA	NA
SN: 2448718	1/31/1997	Transformer Oil	EPA 600/4-B1-045	24	NA	NA	NA	NA	NA	NA	NA
B 3126-Soil	1/8/1998	Soil	EPA 8081	ND	NA	NA	NA	NA	NA	NA	NA

NA: Not available
The source of the data: Final version of Visual Site Inspection (TetraTech, 2008).
Detection Limit for EPA 600: 5 mg/kg; EPA 8181: 1 mg/kg



DATE 1/18/2013	TIDEWATER INC	
DRAWN HS	Site Detailed Location Map L04 (Hangar 3126 at Davison Army Air Field) Fort Belvoir, VA	
APPROVED WSY	DRAWING: Fig9_L04_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET 1/1

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

July 6, 2012

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval of: **Administrative Closure of 90 SWMUs Report, Main Post**, US Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Subject Report, dated October 2011 for the Administrative Closure of 90 Solid Waste Management Units (SWMUs). EPA's approval also includes the two SWMUs that were added to the Report later, SWMUs B-10 and F-05.

The reasons for eliminating listed SWMUs from further investigation includes: absence of field evidence and/or record of contaminant releases, investigation and closure under Virginia or other regulations, and SWMUs no longer existing among other reasons.

If you have any questions, feel free to contact me at 215-814-3434.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Durwood Willis, VADEQ

SWMU Number	SWMU Title	Site Description	Admin Closure Category	Justification
L-04	Building 1338 Leaking Transformers	The 1988 RCRA Phase II RFA described the site as three transformers located on concrete pads that had no identifiable PCB stickers located on them. One of the transformers appeared to be leaking oil onto its pad. The 1992 CH2M Hill SWMU study described six transformers located on separate pads within a fenced in area. According to the 2005 VSI the fluid in the transformers was tested in 1997 and it was found that the transformers did not contain any PCBs above the regulated quantity, although two of the transformers contained PCBs. The transformers were taken offline in 1998 per request by the Army. Soil samples collected around the location of the leaking transformer indicated that no PCBs were present in the soil. It was observed in 2005 that all the transformers and pads had been removed.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Soil samples collected at the site did not indicate impact to the environment. The transformers and associated pads have been removed."
L-06	Building 317 Hydrogen Fluoride Scrubber	This unit was first described in the 1988 Phase II RFA as a wet scrubber located on top of Building 317 used for neutralizing gases that contained hydrogen fluoride. The 1992 CH2M Hill SWMU Study described the unit as a 12 ft by 6 inch tube used for managing gases from laboratory etching processes. The unit had not been used since 1988, but had yet to be taken down. According to Installation representatives, the liquid drained through piping into a neutralization pit (SWMU I-02) next to Building 31, which was investigated during a RCRA Phase I RFI in 2008. According to the 2005 VSI, the scrubber and its infrastructure were removed during renovations to Building 317 in 1993.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	The unit was removed in 1993 and had been inactive since 1988. All materials collected drained into a limestone neutralization pit (SWMU I-02) located on the side of Building 317, which was investigated in 2008. Results indicated that there were no environmental concerns in regards to the neutralization pit.

Administrative Closure Strategy
Solid Waste Management Units
Main Post
Fort Belvoir, Virginia

INTRODUCTION

Currently Fort Belvoir manages 204 Solid Waste Management Units (SWMUs) under a Corrective Action Program for SWMUs on Fort Belvoir's Main Post under a Resource Conservation and Recovery Act (RCRA) Part B, Permit# (EPA ID VA7213720082).

In 2006, Tetra Tech, Inc. was tasked by Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) to categorize each SWMU into one of the four corrective action classes based on the 2005 Visual Site Inspections (VSIs). All 204 SWMUs have been assigned one of four status categories based on the type action to be taken at each site. These categories include; No Further Action (NFA), Administrative Closure (AC), Confirmatory Sampling (CS), and Site Investigation (SI).

In 2009, Tetra Tech, Inc drafted the first volume of Administrative Closure Reports that included 15 separate SWMU sites, which was sent to and reviewed by U.S. EPA Region III Regulators for closure. The 15 sites all received closure between 2009 and 2010 and were removed from Fort Belvoir's RCRA Part B Permit.

During a meeting on December 7th, 2010 between representatives from Fort Belvoir DPW-ENRD, the U.S. Army Environmental Command (AEC), U.S. EPA Region III, and Tetra Tech agreed upon the drafting of a document that would briefly describe each of the 90 SWMUs that were deemed acceptable to be closed through the administrative closure process. Additionally, a brief justification for closure was included for each of the SWMU sites to support why each was categorized into one of six administrative closure categories listed below.

This second volume of Administrative Closures includes the 90 SWMU sites located on the Main Post of U.S. Army Garrison Fort Belvoir, VA that have been recommended to be closed through this administrative closure process. Below are the six administrative closure categories that each of the 90 SWMU sites fall into.

Administrative Closure (AC): SWMU sites that require action from Fort Belvoir and/or the regulators, however, all action is limited to report preparation, review, and approval for NFA. Six scenarios of site status belong in this recommendation category, as described below:

> **AC 1:** Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.
>
> **AC 2:** SWMU site no longer exists due to significant site disturbance as a result of re-grading and construction activity.
>
> **AC 3:** A site component, such as historical infrastructure, needs to be removed from the SWMU site, but no sampling is required.

AC 4: The SWMU is being managed or addressed under a separate program, such as Fort Belvoir's Petroleum Management Program (PMP), Military Munitions Response Program (MMRP), Virginia Pollution Discharge Elimination System (VPDES), National Pollution Discharge Elimination System (NPDES), or Clean Water Act (CWA).

AC 5: The site is an active permitted facility.

AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.

SITE L-4

BUILDING 1338 LEAKING TRANSFORMERS

Description: SWMU Site L-4 is located outside the southwest wall of Building 1338 (now Buiding 3126) at Davison Army Airfield (Figures 1 & 2). There are currently three electrical transformers at this site, mounted on the southern end of an approximately 8- by 26-foot concrete pad that is adjacent to Building 1338 (Reference 1, Photograph 1). During the Visual Site Inspection (VSI) conducted in conjunction with preparation of this document, the former location of the three transformers comprising Unit L-4 was evident on the northern end of the concrete pad, which is visibly stained around the former transformer locations (Photograph 2). According to facility personnel, those three transformers were removed from service in 1997 after the cooling fluids were tested for PCBs. Bare soil and stressed vegetation were observed at the edge of the concrete pad during the current VSI; however, that soil did not appear stained.

History: Reference 2 reported that Unit L-4 consisted of three high voltage transformers on a concrete pad located to the south of Building 1338. Facility personnel did not know the age of the transformers or whether they contained PCB coolant, and no labels concerning PCB content were found on the transformers during that VSI. Reference 2 reported that one of the three transformers was leaking cooling fluid onto the concrete pad at a low flow rate.

Reference 3 reported that there were a total of 6 transformers at Site L-4, that the unit consisted of a leaking transformer on a fenced concrete pad, and that the pad was stained with oil (Photograph 3). No labels concerning the transformer's PCB content were observed during that VSI.

The cooling fluid from the three transformers comprising Unit L-4 was tested in 1997 and was determined to not contain PCBs at a regulated concentration (50 parts per million) (Reference 4). However, those test results did indicate that PCB's were present in the oil from two of the transformers. References 5 and 6 reported that the three transformers identified as Unit L-4 were off-line in 1998, and that two of the three appeared to be leaking and would be tested for the presence of PCBs prior to "turn-in" to the environmental office for disposal. Reference 6 states that the results of analyses on soil samples collected adjacent to the leaking transformers at Unit L-4 did not indicate the presence of PCBs.

The reports of leaking transformers indicate that a release has occurred at this site; however, Reference 6 provides documentation that a release of concern has not occurred at Site L-4.

Action Plan: Based on the above information, **no further actions** are recommended to close SWMU Site L-4.

References: The following sources were reviewed and considered in preparation of this document:

1. Interviews with Fort Belvoir personnel and VSIs conducted in September 1998 and April 1999.

2. Draft Phase II RCRA Facility Assessment of the U.S. Army Engineer Center and *Fort Belvoir, Virginia*, dated September 13, 1988, prepared by A.T. Kearney, Inc., of Alexandria, Virginia, for U.S. Environmental Protection Agency, Region III, Philadelphia, Pennsylvania.

3. *Solid Waste Management Unit Study, U.S. Army, Fort Belvoir*, dated July 1992, prepared by CH2M Hill, Reston, Virginia.

4. *Report of Analysis, Report No. 97-02-037*, dated February 14, 1997, by Gascoyne Laboratories, Inc., Baltimore, MD.

5. MEMORANDUM From: Department of the Army Communications-Electronics Command Research, Development & Engineering Center Night Vision & Electronic Sensors Directorate, 10221 Burbeck Road, Fort Belvoir, Virginia 22060-5806, AMSEL-RD-NV-OPS-FEM-SHE (40-5p).

6. MEMORANDUM From: Department of the Army, U.S. Army Garrison, Fort Belvoir, Directorate of Public Works, 9430 Jackson Loop, Suite 107, Fort Belvoir, Virginia 22060-5130 (ANFB-PW-200-1).

2025

L47: Former Concrete Pad Transformer Storage Area

PCB TMDL ACTION PLAN – APPENDIX A-10

FORT BELVOIR

Former Concrete Pad Transformer Storage Area (L47)

Site L47 was a concrete pad that was used to store transformers until they could be tested for PCBs and then disposed of properly or moved to another storage area as shown in Figure 11. The pad was approximately 40 ft by eight ft and transformers were noted as being stored on wooden pallets over bare ground to the south of the pad (CH2M Hill, 1992). The pad was located outside, and transformers were exposed to precipitation. However, there were no reportable releases. Even though stains on the pad were reported, it is unknown whether the staining liquid contained PCBs since the transformers at the site were being held for PCB testing. The pad has been removed and the site is now wooded with tall grass, medium brush, and young and mature trees. The location of the former concrete pad is shown in Figure 11 This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove. Since PCBs are carried primarily by sediment, the thickly wooded nature of the site would reduce the probability for potentially contaminated sediments to travel.

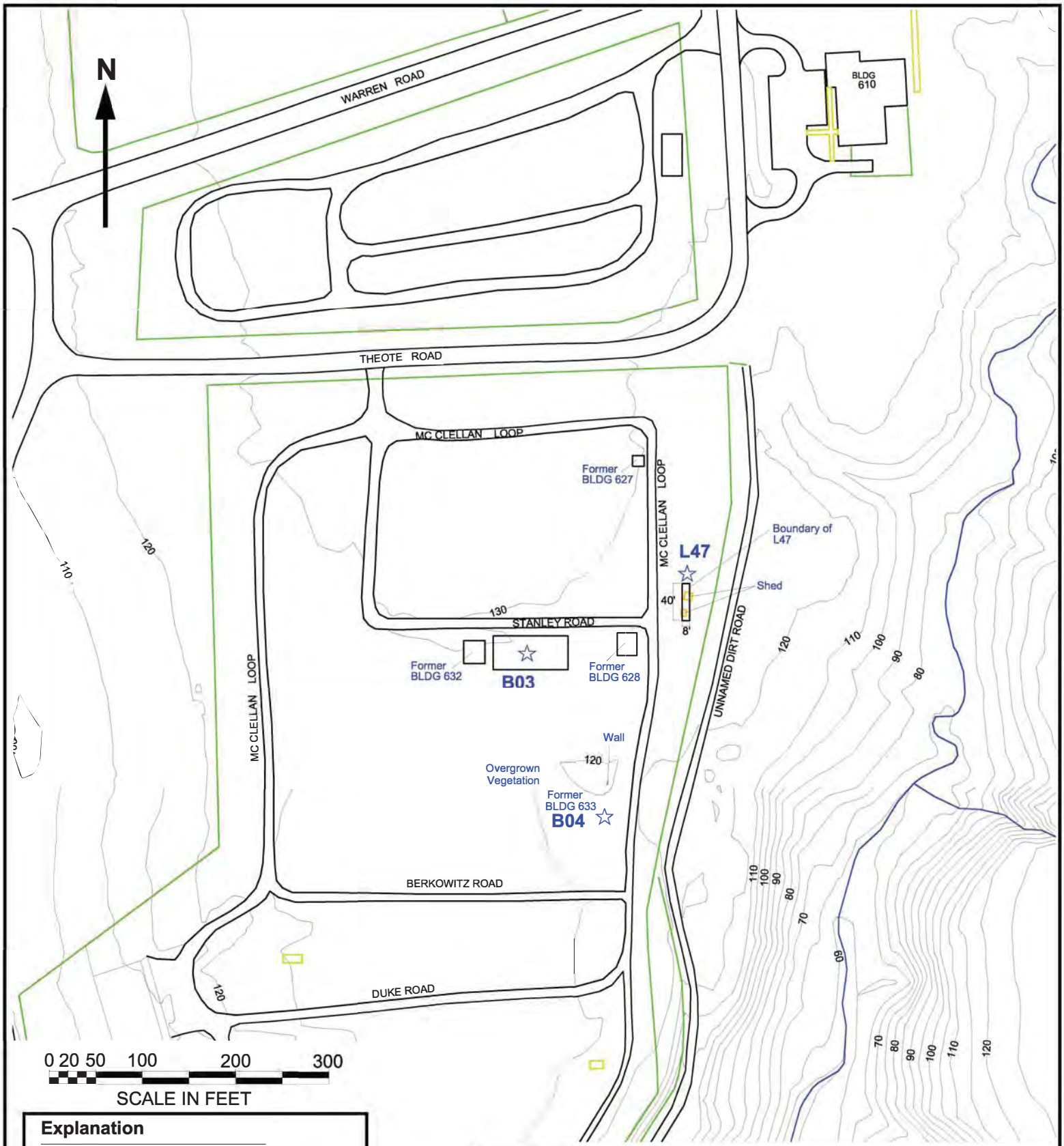
Environmental soil sampling as part of the Phase I investigation work was conducted at L47 in January 2013 and a report was completed in August of 2013. Field activities included the collection of six soil boring samples from three soil borings. Surface soil samples from the 0-2 feet bgs interval and subsurface soil samples from the 2-4 feet bgs interval were collected from each boring and sent to the laboratory for the analysis of PCBs. PCBs were not detected in any of the soil boring samples collected at SWMU L47. Based on the findings in the Phase I investigation, Fort Belvoir recommended No Further Action at SWMU L47. The U.S. EPA concurred with the recommendation in a letter dated 17 December 2013. The absence of detected concentrations of PCB analytes in the soil boring samples collected at SWMU L47 suggests that the former activities at this site have not affected the soils in the vicinity of SWMU L47. The storage pad, pallets and sheds have been demolished and the area is overgrown with wood shrubbery and mixed hardwoods, this indicates that it is unlikely L47 would discharge PCBs to impaired water bodies.

Conclusion: No Further Action.

Tabe A-9: L47 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
L47-SB01 (0-2')	1/10/2013	Soil	8082A	NA	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
L47-SB02 (0-2')	1/10/2013	Soil	8082A	NA	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U
L47-SB03 (0-2')	1/10/2013	Soil	8082A	NA	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U
L47-SB01 (2-4')	1/10/2013	Soil	8082A	NA	0.0097 U	0.0097 U	0.0097 U	0.0097 U	0.0097 U	0.0097 U	0.0097 U
L47-SB02 (2-4')	1/10/2013	Soil	8082A	NA	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U
L47-SB03 (2-4')	1/10/2013	Soil	8082A	NA	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0092 U

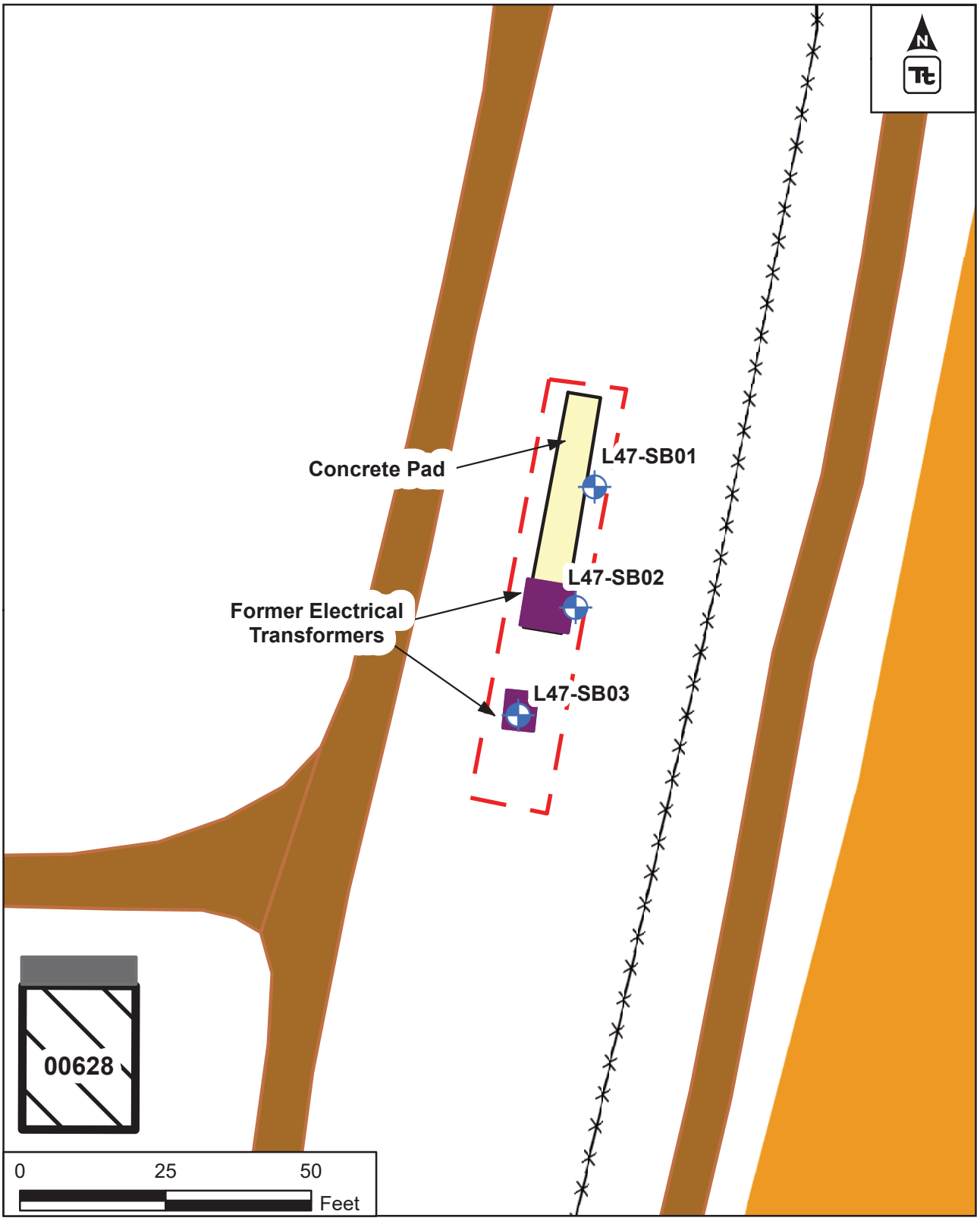
NA: Not Available.
U: Non-Detect, Below detection Limit, ND: Not Detected
The source of the data: Final RCRA Facility Investigation Report Solid Waste Management Unit (SWMU) L-47 (Tetra Tech, 2013).



Explanation

- ☆ Site Location
- Boundaries of B03, B04, L47
- Drainage Area Delineation
- 90 Contour Elevation in ft
- 632 Building and Number
- Road
- Slab
- Fence
- Stream

DATE 1/17/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map for B03/B04/L47 Fort Belvoir, VA**
APPROVED WSY	DRAWING: Fig5_B03_B04_L47_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1



LEGEND

- Concrete Slabs
- Approximate SWMU L-47 Limits
- SWMU L-47 Transformer Pad
- SWMU A-28
- Fence
- Unpaved Road
- Demolished Buildings
- Former Electric Transformers
- Soil Boring Locations

Solid Waste Management Unit (SWMU) L-47 Soil Boring Sample Locations

Sources: Fort Belvoir GIS, 2006; Tetra Tech GIS, 2008.

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

Mr. Patrick McLaughlin
U.S. Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

December 17, 2013

Subject: EPA Approval of RFI Phase 1 Reports for
6 SWMUs on Main Post
U.S. Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The U.S. Environmental Protection Agency (EPA) reviewed the RCRA Corrective Action Facility Investigation Phase 1 Reports (RFIs) for 6 Solid Waste Management Units (SWMUs) located on the Main Post. EPA approves the Reports and the recommendations of **No Further Action (NFA)** with no Land Use Controls requirements necessary for each of the following SWMUs:

E-09 – RFI Final dated August 2013;

E-10 – RFI Final dated March 2009;

E-12 – RFI Final dated May 2013;

L-03 - RFI Final dated August 2013;

L-47 – RFI Final dated August 2013;

N-20 – RFI Final dated May 2013.

If you have any questions or comments, contact me at 215-814-5786 or smith.barbara@epa.gov.

Regards,

Barbara Smith, Project Manager
Office of Remediation

e-Copy: Amy Martin - Ft. Belvoir, MP
Wade Smith -VDEQ
Laura Galli -VDEQ

7.0 SUMMARY AND CONCLUSIONS

In accordance with Fort Belvoir's RCRA B Permit, "The Phase I RFI shall contain conclusions and recommendations regarding the need for future investigation. The recommendations shall be adequately justified." The Phase I RFI may recommend, among other things:

> (1) No further action required, if the analytical results of sampling do not indicate the presence of hazardous waste or hazardous constituents, and the present physical condition and operating conditions of the SWMU/AOC are such that there is no likelihood of a release or additional release of hazardous waste or hazardous constituents from such SWMU.
>
> (2) Continued monitoring, where analytical results are below the practical quantitation limits (e.g., identified in 40 C.F.R. Part 264, Appendix IX, and 9 VAC 20-60-264, Appendix IX) and the presence of hazardous waste or hazardous constituents, together with the present physical condition and operating conditions of the SWMU, indicate a threat of a release of a hazardous waste or hazardous constituents in the future.
>
> (3) The recommendations of the nature and scope of a Phase II RFI to characterize the rate and extent of identified releases of hazardous waste, hazardous constituents, or hazardous constituent degradation products from SWMUs, groups of SWMUs/AOCs, or other areas of contamination.
>
> (4) Planning and implementing: interim measures at the facility. See permit condition IV.B."

During this environmental investigation conducted at SWMU L-47 on January 10, 2013, three soil borings designated L47-SB01 through L47-SB03 were advanced around the former transformer storage pad to determine if the site had been impacted by PCBs. Surface soil samples from the 0-2 feet bgs interval and subsurface soil samples from the 2-4 feet bgs interval were collected from each boring and sent to the laboratory for the analysis of PCBs. PCBs were not detected in any of the soil boring samples collected at SWMU L-47.

Recommendation

The absence of detected concentrations of PCB analytes in the soil boring samples collected at SWMU L-47, suggests that the former activities at the site have not affected the soils in the vicinity of SWMU L-47. This indicates that SWMU L-47 does not pose an unacceptable risk to human health or the environment.

The following recommendation for SWMU L-47 was selected from four possible courses of action which are stated in Fort Belvoir's RCRA Part B, Permit US EPA ID VA7213720082;

> (1) No further action required, if the analytical results of sampling do not indicate the presence of hazardous waste or hazardous constituents, and the present physical condition and operating conditions of the SWMU/AOC are such that there is no likelihood of a release or additional release of hazardous waste or hazardous constituents from such SWMU.

L-47
600 AREA TRANSFORMER STORAGE AREA

Description:

This site is located within the 600 Storage Area northeast of Building 628 and southeast of Building 627 (See Figure 1 and Plate 1) The site consists of a concrete pad 40 feet long by 8 feet wide with additional storage on wooden pallets to the south of the concrete pad. The concrete pad is surrounded by a grassy area, the wooden pallets rest on the bare ground. No start up dated could be determined and the unit is still active. The concrete pad and wooden pallets are the only physical structures or markings which denote the location of the site (See detailed Site Plan and Figure 2). Drainage from the site is to the east via the areas stormwater run-off system, no special drainage features are apparent.

History:

This site was identified as Solid Waste Management Unit (SWMU) during the 1988 RCRA Facility Assessment (RFA). The unit is used to store transformers prior to testing for PCB. Reportedly transformers testing positive were moved to a storage facility at Building T1430. At the time of this investigation there were two transformers stored on the concrete pad and two transformer stored on the wooden pallets. Past Studies have reported the storage of 55-gallon drums of "transformer oil" at the site.

Closure Actions:

Based on the above, the following actions will be taken to close the site:

1. Any transformers or wooden pallets stored at the site shall be tested and disposed of appropriately. The concrete pad shall then be removed and decontaminated. If decontamination of the concrete pad cannot be accomplished it shall be disposed of as contaminated waste.

2. Samples of the soils surrounding and underlying the concrete pad/wooden pallet area shall be collected at the locations shown on the sampling schematic for this site. At these locations, samples shall be collected from the surface of the sampling plane and at depths of 6", 12", 18" and 24" from the surface of the sampling plane. The samples from the surface of the sampling plane and the first 6" interval shall then be analyzed for Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOC's), Semi-Volatile Organics, pesticides/PCB's and metals. If contamination is detected, analysis of the next interval shall be conducted until a clean interval is reached.

3. If analysis of the soil samples indicate that contamination is present, the soil shall be excavated to the depth indicated by the sample analysis. Excavated soils shall be appropriately containerized and disposed of. If contamination is detected at the 24" interval, the excavated pit shall be filed with clean material and a semi-permanent

location marker will be installed. The exact location and dimensions of the excavated area shall be noted on the Site Plan. A detailed contamination investigation and sampling plan shall be developed to determine the extent of the contamination. Based on the results of the contamination investigation a remedial action plan shall be developed for this site.

4. If analysis of the soil samples indicate that contamination is not present, the excavated area shall be filled with clean material.

5. Once the extent of contamination at this site is determined, a decision will be made as to the necessity for installing groundwater sampling and analysis wells.

2025

N13: Building 1490 Hazardous Material Storage Area

PCB TMDL ACTION PLAN – APPENDIX A-11

FORT BELVOIR

Building 1490 Hazardous Material Storage Area (N13)

SWMU N13, Building 1490 was first described in the 1992 CH2M Hill SWMU Study as a hazardous material storage facility that has been in use since 1984. According to the 2005 VSI, operations at this unit include segregating, labeling, and storing waste materials prior to being transported off the Installation by contractors to be properly disposed. Before 1984 the building was used as a pesticide mixing area (SWMU B16) and some floor staining had been documented. Figure 12 shows the location of N13.

Building 1490 and the storage of hazardous materials within the structure are managed through Fort Belvoir's RCRA Part B Permit for Hazardous Waste Storage. Although there was one report of a small amount of hazardous chemicals being released inside the building, the materials were addressed through the Installation's Spill Contingency Plan. The building has secondary containment structures in place and has no pathway for chemicals to be released into the environment. In March of 2018 VADEQ was formally notified that closure of the facility hazardous waste storage facility has commenced with an evaluation of the integrity of the foundation by a Professional Engineer (PE). The facility was decontaminated on 9 and 10 April 2019 as per the Closure Plan contained in the 2015 RCRA Part B Permit and modified/approved by VADEQ on 5 April 2019.

The decontamination and sampling process for the facility was documented in the 1490 Closure Report dated July 2019, which included certification of clean closure by both Fort Belvoir (owner/operator) and a PE. A closure verification inspection addressing Building 1490 was performed by Christina Archambeault, Hazardous Waste Inspector, and Ashby Scott, RCRA Permit Writer, on 8 August 2019. Building 1490 received final closure approval by VADEQ on 17 September 2019 in a letter which stated that, "the closure meets the criteria of the approved closure plan dated 5 April 2019 (latest modification) and is in accordance with the Virginia Hazardous Waste Management Regulations. Therefore, the storage facility is considered to be clean-closed and to meet residential risk." Therefore, no further risk of potential releases of hazardous chemicals is present from this historic operation. The building has been demolished as of May 2020.

Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions. As such,

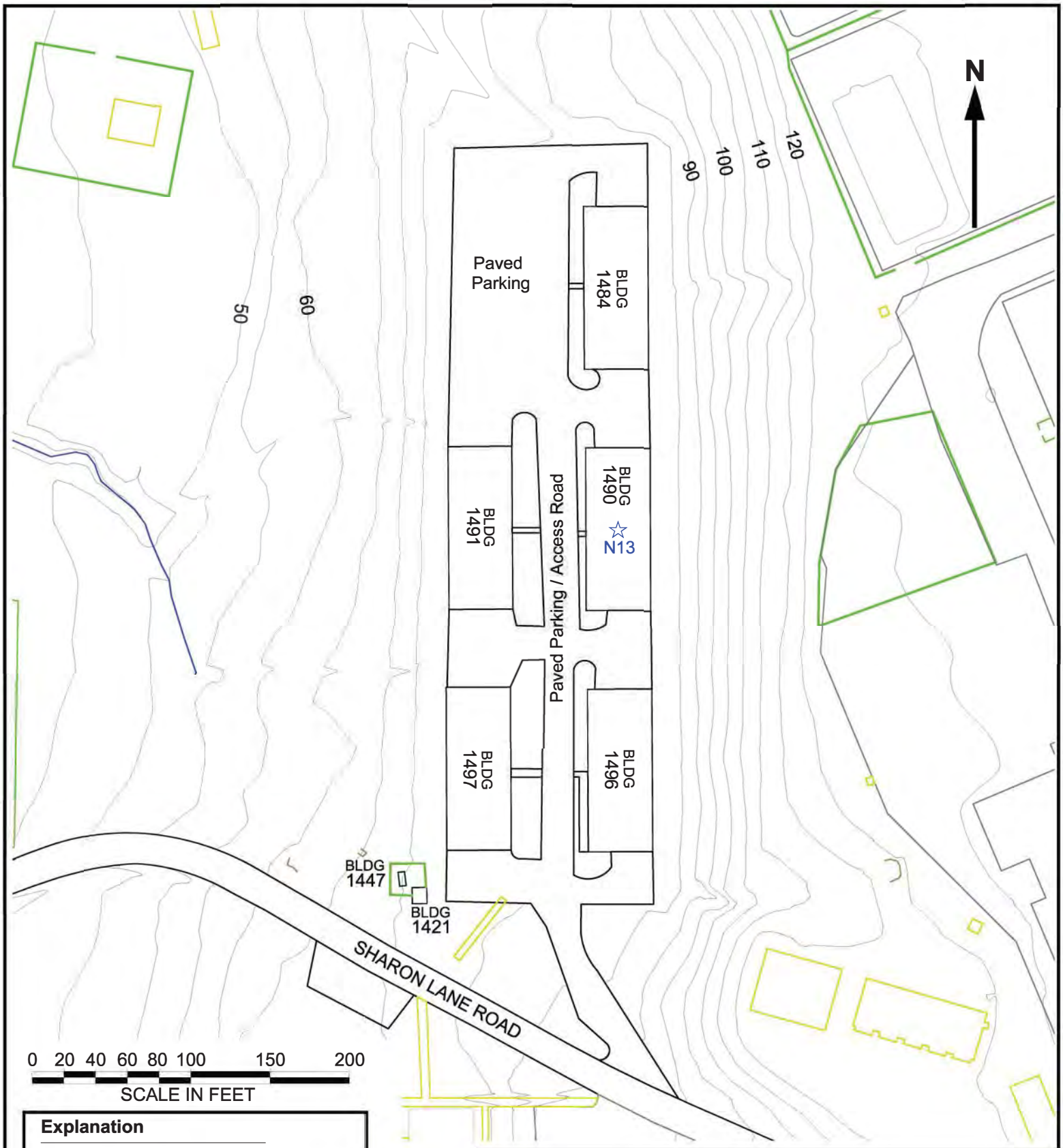
SWMU N13 received regulatory concurrence from U.S. EPA Region 3 for Administrative Closure on 6 July 2012. The site was decontaminated in April of 2019 and received approval for clean closure under the RCRA Part B Permit (VA7213720082) from VADEQ on 17 September 2019.

Conclusion: No Further Action.

Tabe A-10: N13 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

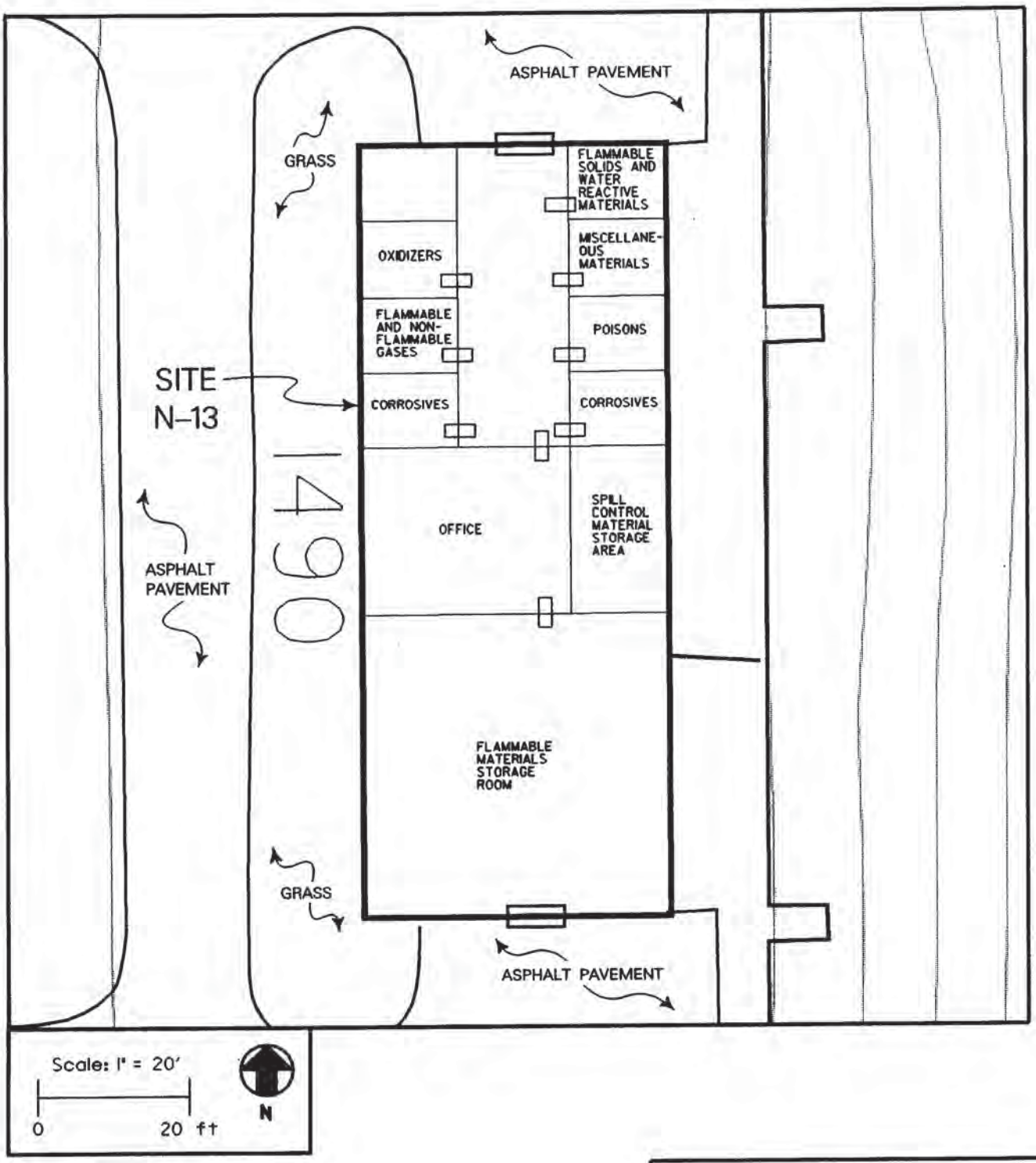
NA: Not Available



Explanation

- Site Location
- Drainage Area Delineation
- Proposed Sample Location
- 50 Contour Elevation in ft
- 1492 Building Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/25/2013	TIDEWATER INC		
DRAWN HS	Site Location Map N13 (Hazardous Waste Storage Building) Fort Belvoir, VA		
APPROVED WSY	DRAWING: Fig11_N13_Map.dwg		REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET	1/1



FORT BELVOIR
SOLID WASTE MANAGEMENT UNIT

Detailed Site Plan
Site N-13

Hazardous Materials Storage
(Building 1490)

Figure 2

2. HAZARDOUS CONSTIUENTS OF CONCERN AND CLOSURE PERFORMANCE STANDARDS

2.1 HAZARDOUS CONSTIUENTS OF CONCERN

Table 1 of the Closure Plan (VADEQ 2014) presented the list of Hazardous Constituents of Concern (HCOCs) that was developed based on the types of wastes permitted for storage at this unit. On 19 March 2019, Fort Belvoir submitted a Permit Modification Request to VADEQ to update the HCOCs from Table 1 based on what was stored in Building 1490.

A comprehensive record search through Hazardous Waste Storage Facility Inventory Logbooks and additional hazardous waste profiles was conducted to identify the complete list of constituents processed through the facility. Four logbooks for Building 1490 (3 January 1995 through 17 June 2011), which included 2,676 individual waste records, and six binders containing hazardous waste profiles (10 January 1995 through 10 April 2011) were reviewed. Based on the analysis of these historical records, the list of HCOCs in Table 1 of the Closure Plan was modified to reflect the 55 HCOCs that were actually processed through Building 1490. PDFs of logbooks and waste profiles can be found in Appendix A (on compact disc).

VADEQ approved the Permit Modification Request on 5 April 2019. The final HCOCs and EPA Solid Waste-846 Test Methods that are used to measure these HCOCs are presented in Table 2-1.

2.2 CLOSURE PERFORMANCE STANDARDS

The following summarizes Performance Standards as defined in the Closure Plan (VADEQ 2014):

- An inspection by a Virginia-registered Professional Engineer will be conducted to determine if any pathway exists for hazardous chemicals to have impacted the soil beneath the concrete slab.

- If the inspection finds no pathways, then final closure of Building 1490 will be achieved by a comparison of the decontamination pre-rinse and final rinse water samples.

- If the inspection indicates the existence of any pathways, then compliance samples will be collected to determine if operations at Building 1490 have impacted the soil beneath the concrete slab.

Inspection by a Virginia-registered Professional Engineer was conducted on 7 November 2017 and is documented in Section 3.1. Because no release pathways were observed, the Closure Performance Standard to achieve final closure (per Section 1.2 of the Closure Plan) is to compare the decontamination pre-rinse and final rinse samples. Per Section 4.1 of the Closure Plan, if there is no increase in the final rinse sample concentrations, Building 1490 will achieve clean closure.

6. CERTIFICATION OF CLEAN CLOSURE

Closure activities have been conducted in accordance with the VADEQ-approved Closure Plan, dated January 2014, as amended by the subsequent Permit Modifications with the exception of the one variation to the approved field procedures outline regarding expedited sample turnaround time addressed in Section 4.2.4. Based on the information provided in this report; the work performed at the site satisfies the clean closure performance standard in 9 VAC 20-60-264.

This statement presents the professional opinion of the undersigned that is based upon knowledge, information, and belief formulated in accordance with commonly accepted procedures consistent with applicable standards of practice. This statement does not constitute guaranty or warranty, either express or implied.

Jason McNew, P.E. (VA 7213720082)
EA Engineering, Science, and Technology, Inc., PBC

1 July 2019
Date

I hereby certify that based on my inquiry of the person or persons who manage the work, or those persons directly responsible for gathering information, the information submitted is to the best of my knowledge and belief true, accurate, and complete, and the site has been closed in accordance with the Closure Plan.

Bill Sanders, Director
U.S. Army Garrison, Fort Belvoir
Directorate of Public Works

2 Jul 19
Date

5.6 CONCLUSION

As detailed in Section 2.2, following the inspection of Building 1490, no pathways for hazardous materials to impact the soil beneath the concrete pad were observed. Therefore, the Closure Performance Standard to demonstrate clean closure was to compare the decontamination pre-rinse (background) and final rinse samples.

Based on the data evaluation and statistical analysis of the cleaning and rinse samples, no statistically significant concentrations above pre-rinse/background concentrations were observed at Building 1490. Therefore, Building 1490 meets the Closure Performance Standards and has achieved clean closure.

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

September 17, 2019

VIA ELECTRONIC MAIL
Mr. Felix Mariani, Chief
US Army Garrison, Fort Belvoir
Directorate of Public Works
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Re: US Army Garrison, Fort Belvoir, Fort Belvoir, VA
EPA ID No. VA7213720082
Hazardous Waste Storage Building #1490 Final RCRA Operating Facility Closure Approval by the Virginia Department of Environmental Quality

Dear Mr. Mariani:

The Virginia Department of Environmental Quality, Office of Financial Responsibility and Waste Programs (DEQ) has completed the review of the US Army Garrison Fort Belvoir (Ft. Belvoir), Draft Final Closure Report for the Hazardous Waste Container Storage Area Building #1490 (Draft 1490 Closure Report), dated July 2019 and Amendment 1: Final Closure Report for Building 1490 (Amendment 1), dated September 11, 2019.The Draft 1490 Closure Report and was submitted to fulfill the requirements of the Final Closure Plan for Building #1490 in the Ft. Belvoir facility's final permit and the approved Class 1 Modification to Table 1, dated April 5, 2019, and two approved extension requests, dated November 14, 2018 and May 16, 2018. Amendment 1 was submitted in response to observations made during the closure verification inspection performed on August 8, 2019 to supplement the Draft 1490 Closure Report.

The Owner/Operator and Professional Engineer (PE) Certifications in the Draft 1490 Closure Report are deemed satisfactory and are dated July 3, 2019 and July 1, 2019. A closure verification inspection addressing Building 1490 was performed by Christina Archambeault, Hazardous Waste Inspector, and Ashby Scott, RCRA Permit Writer, on August 8, 2019.

As a result of the August 8, 2019 verification inspection and the DEQ's previous efforts described within this letter, closure of the permitted hazardous waste storage facility under EPA ID. No. VA7213720082 is complete. The closure meets the criteria of the approved closure plan dated April 5, 2019 (latest modification), and is in accordance with the Virginia Hazardous Waste Management Regulations. Therefore, the storage facility is considered to be clean-closed and to meet residential risk.

In a letter dated March 12, 2019, Ft. Belvoir notified the DEQ that closure of the permitted hazardous waste storage facility had commenced and it was determined by DEQ that no 45-day notice was given prior to the commencement of the closure activities on November 7, 2017. The 180-day closure period was scheduled to end on May 7, 2018 but was extended by two approved extension requests, dated May 16, 2018 and November 14, 2018.

Ft. Belvoir requested a modification to Table 1 of the approved Closure Plan on June 18, 2019 to reduce the number of constituents which would be required to be analyzed to determine whether clean closure had been achieved. Upon review of the modification request DEQ determined that insufficient information had been provided to justify the request and a meeting was held on September 19, 2018 between DEQ and Ft. Belvoir to clarify what information would need to be submitted for a modification request to be justified. After several conference calls between DEQ and Ft. Belvoir to clarify the required information for a justification to be made a subsequent modification request was submitted on March 19, 2019 and was approved on April 5, 2019.

Amendment 1 was submitted in response to observances of a crack in the top of the berm of one of the containment units during the verification inspection on August 8, 2019. Amendment 1 details the crack was determined to not be through going as it was no more than 2 inches into a 6-inch high curb and did not penetrate the floor itself.

All other conditions and requirements of the facility's Hazardous Waste Permit shall remain in effect for the duration of the Permit (until 8/10/2025) unless the existing Permit is modified, revoked and reissued, or terminated in accordance with 40 CFR § 124.5, and 40 CFR § 270.41 through 270.42, or continued in accordance with 9 VAC 20-60-270.B.5. More specifically, Module IV*, Site-Wide Corrective Action* remains in effect. However, the terms and conditions of the Permit may be modified in the future to reflect updated Corrective Action requirements.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision to initiate a legal appeal by filing a notice of appeal with:

David K. Paylor, Director
Department of Environmental Quality
1111 East Main Street, Suite 1400
P.O. Box 1105
Richmond, VA 23218

In the event that this decision is served to you by mail, the date of service will be calculated as three days after the postmark date. Please refer to Part 2A of the Rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specifications of the Circuit Court to which the appeal is taken, and additional requirements concerning appeals from decisions of administrative agencies.

If you should have any questions regarding these matters, please contact Mr. Ashby Scott, of my staff, by phone at (804) 698-4467 or by email at Ashby.Scott@deq.virginia.gov.

Sincerely,

Leslie A. Romanchik
Hazardous Waste Program Manager
Office of Financial Responsibility and Waste Programs

cc: Barbara Smith, EPA, Region III
Catherine McGoldrick, EPA, Region III
Wilamena Harback, FTBL MP
Christopher Manikas, FTBL MP
Ashby Scott, DEQ, CO
Chris Evans, DEQ, CO
Richard Doucette, Chris Archambeault, DEQ, NVRO
Central Hazardous Waste Files

Administrative Closure Strategy
Solid Waste Management Units
Main Post
Fort Belvoir, Virginia

INTRODUCTION

Currently Fort Belvoir manages 204 Solid Waste Management Units (SWMUs) under a Corrective Action Program for SWMUs on Fort Belvoir's Main Post under a Resource Conservation and Recovery Act (RCRA) Part B, Permit# (EPA ID VA7213720082).

In 2006, Tetra Tech, Inc. was tasked by Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) to categorize each SWMU into one of the four corrective action classes based on the 2005 Visual Site Inspections (VSIs). All 204 SWMUs have been assigned one of four status categories based on the type action to be taken at each site. These categories include; No Further Action (NFA), Administrative Closure (AC), Confirmatory Sampling (CS), and Site Investigation (SI).

In 2009, Tetra Tech, Inc drafted the first volume of Administrative Closure Reports that included 15 separate SWMU sites, which was sent to and reviewed by U.S. EPA Region III Regulators for closure. The 15 sites all received closure between 2009 and 2010 and were removed from Fort Belvoir's RCRA Part B Permit.

During a meeting on December 7th, 2010 between representatives from Fort Belvoir DPW-ENRD, the U.S. Army Environmental Command (AEC), U.S. EPA Region III, and Tetra Tech agreed upon the drafting of a document that would briefly describe each of the 90 SWMUs that were deemed acceptable to be closed through the administrative closure process. Additionally, a brief justification for closure was included for each of the SWMU sites to support why each was categorized into one of six administrative closure categories listed below.

This second volume of Administrative Closures includes the 90 SWMU sites located on the Main Post of U.S. Army Garrison Fort Belvoir, VA that have been recommended to be closed through this administrative closure process. Below are the six administrative closure categories that each of the 90 SWMU sites fall into.

Administrative Closure (AC): SWMU sites that require action from Fort Belvoir and/or the regulators, however, all action is limited to report preparation, review, and approval for NFA. Six scenarios of site status belong in this recommendation category, as described below:

> **AC 1:** Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.
>
> **AC 2:** SWMU site no longer exists due to significant site disturbance as a result of re-grading and construction activity.
>
> **AC 3:** A site component, such as historical infrastructure, needs to be removed from the SWMU site, but no sampling is required.

AC 4: The SWMU is being managed or addressed under a separate program, such as Fort Belvoir's Petroleum Management Program (PMP), Military Munitions Response Program (MMRP), Virginia Pollution Discharge Elimination System (VPDES), National Pollution Discharge Elimination System (NPDES), or Clean Water Act (CWA).

AC 5: The site is an active permitted facility.

AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.

SITE N-13

HAZARDOUS MATERIAL STORAGE (BUILDING 1490)

Description: This active unit is located within Building 1490. Building 1490 is a single-story corrugated steel on concrete slab structure (see Figure 1). The original unit, identified during the 1991 site visit, consisted of a concrete-lined and concrete-bermed indoor storage area approximately 30 feet by 30 feet, occupying the northern third of Building 1940 (see Figure 2 and Plate 1). Since the original site visit, the original storage area has been modified to include several four-foot high cinder block walls that separate the storage area into various bays for the storage of different waste streams. In addition, the southern third of Building 1490 has been converted into a bermed storage area, with secondary containment, for flammable wastes.

History: According to facility representatives, this unit began operations in 1984 and is currently active, operating under Fort Belvoir RCRA permit as the facility hazardous material storage unit. Operations at this unit include segregating, labeling, and storing materials prior to disposal by outside contractors. Waste streams observed at this site included transformers labeled PCB, drums of PCB oils, paints, solvents, oxidizers, and flammables. Prior to 1984, Building 1490 was operated as the pesticide mixing and storage area for Fort Belvoir, and it has been identified as SWMU B-16. Floor stains were also noted in previous reports.

Action Plan:

Based on the above, the following actions shall be taken to close this Solid Waste Management Unit:

1. Since this unit is operated under the Fort Belvoir RCRA permit program which will require extensive sampling and clean up when the unit is closed, No Further Action with respect to the unit's SWMU status are recommended.

Note: Information reviewed during the development of this Closure Action Plan was selected from the following sources (where possible): the 1988 U.S. EPA RCRA Facility Assessment by A.T. Kearny, Inc; the 1992 Solid Waste Management Unit Study by CH2M Hill; site specific reports and analytical data from the Fort Belvoir Directorate of Public Works, Environmental and Natural Resource Division; facility personnel interviews; and site reconnaissance.

2025

MP11: Building 1495 Former Outdoor Transformer Storage Area

PCB TMDL ACTION PLAN – APPENDIX A-12

FORT BELVOIR

Building 1495 Former Outdoor Transformer Storage Area (MP11)

Fort Belvoir Building 1495 (Hazardous Waste Management Building) consists of an approximately 9,500 sq ft paved parking area within a 1.1 acre fenced enclosure. The fenced enclosure is in an area surrounded by steep topography that declines from industrial warehouses east of the site and receives significant runoff. The eastern edge of the paved parking (Figure 13) at the site was used to store PCB-containing transformers between 2010 and 2012. A 2011 aerial photograph indicates that the transformers may have been exposed to open weather conditions including precipitation during storage at the site. The transformers were identified to be leaking fluid in 2012 and were relocated inside Building 1495 for disposal. Upon relocation of the transformers to the building, stains were observed on the asphalt at the site and absorbent and containment materials were placed around the affected areas. Soil sampling in April and August of 2012 detected Aroclor 1260 in two of the four soil and asphalt samples as presented in Table A-11, Appendix A.

During renovation construction at Building 1495 in August 2013, stained soil and odor were encountered adjacent to the building located 80 feet west of the transformer storage site. Soil samples taken on 12, 13, and 27 August 2013 indicated elevated levels of TPH and PCBs. Work was stopped until the contractor sampled and submitted a Site Safety and Health Plan (SSHP). Samples taken on 23 June 2014 were non-detect for PCBs. On 7 July 2014, once the SSHP was approved, soil was removed from the affected location. Confirmation samples taken on 9 July 2014 also indicated no residual PCB contamination in the area where the work was being done. As part of the Building 1495 remodeling project, additional soil removal was conducted in the northeastern portion of the parking lot and the lot was re-paved. A soil sample taken on 27 October 2014 was non-detect for PCBs. Eight soil and three surface water samples were taken on 22 June 2015 at locations in the vicinity of the former PCB transformer storage area and adjacent to Building 1495 to assess impacts to soil. Results of this sampling indicated the presence of PCBs in one surface soil sample located in the grassed area of the northeastern portion of the lot.

In March 2013, Fort Belvoir finalized a PCB TMDL Action Plan as required by Fort Belvoir's MS4 Permit, which included monitoring of the former PCB transformer storage area release in proximity of Building 1495. In November 2013, prior to the initial soil removal in July 2014, the first round of sampling occurred as per the PCB TMDL Action plan. Samples taken at MS4-PCB-1495-SW1 and MS4-PCB-1495-SW3 exhibited PCBs above Virginia's Water Quality Standards (WQC) of 640 **ρg/L**. Additional stormwater sampling was conducted in April 2015, after the second round of soil removal was completed in August 2014. Significantly higher levels of PCBs were reported during this event but were attributed to the large amount of soil disturbance occurring in the area (TSS: 973 mg/L). During the September 2015 sampling event these results saw a significant decrease, with MS4-PCB-1495-SW1 dropping below the WQC threshold. The dramatic decrease in PCB levels at these sample locations, since April 2015, is likely due to the completion and final stabilization of the remediation areas (Angler, 2015). Sampling continued in 2017 when stormwater was collected from MS4-PCB-1495-SW1 and MS4-PCB-1495-SW3 in February. The results showed another spike in total PCB congeners with 2,237 **ρg/L** and 3,029 **ρg/L**, respectively. Although higher than the WQC, the February 2017 sample results are significantly lower than the values observed in April 2015, and slightly higher than levels detected in samples taken in September 2015 (Angler, 2017). It was noted during this sampling event that a large amount of sediment was built up in both the channel (SW1) and at the culvert outlet (SW3) where samples were collected. This sediment which may be residual from the construction that occurred in the area may be the source of the PCB spikes. Annual sampling will continue, and future results will be used to confirm the downward trend towards meeting the Virginia WQC.

Soil removal and capping has occurred at the site and a RCRA Facility Investigation (RFI) to further investigate the nature and extent of contamination and to assess human health and ecological risk was completed in June 2020. The RFI concluded that there was negligible risk to ecological and human

receptors from PCBs released at SWMU MP-11 and recommended NFA for the site. VADEQ concurred with NFA for the site on 18 June 2020. All investigations and remediation were done in accordance with the Fort Belvoir Part B Permit Corrective Action module IV. While the new asphalt acts as a cap and is surrounded by grass, there are drainage channels North, South and Northeast of the site. Two channels are grass lined, impeding the transport of residual PCBs to impaired waters, while the northern channel is concrete lined which would further facilitate sediment transport due to the higher concentrated flow rates.

The Fort Belvoir Restoration Program completed field sampling for a RCRA Facility Investigation (RFI) to determine the nature and extent of PCB contamination at MP11, evaluating if off-site migration of PCBs has occurred, and evaluating potential human health and ecological risk of exposure to PCBs. The study concluded that human health and ecological risks are negligible and recommended the site for No Further Action. On 18 June 2020, Fort Belvoir received a letter for No Further Action or Investigation for MP11 from VADEQ based on anticipated land use. The site received a final letter from VADEQ on 12 August 2021 for NFA.

Building 1495 is also used as a <90-day hazardous waste storage facility, and due to the presence of solvents PCB migration may be more likely. Since PCBs are still being presented in stormwater samples from the site and there are nearby drainage features, continued monitoring is recommended to confirm the downward trend continues. Monitoring should be conducted until the WQC is met for two sampling events in a row.

Even though the site has received No Further Action under RCRA, sampling will continue until the WQC is met for two sampling events in a row. Any PCB sampling results made available from the RCRA investigations will be used to update the historical sample summary located in Appendix A – Table A-11. Changes in site status will be reported during the MS4 annual reporting process and sample results will be kept under the SWPPP for ISW RO-005, which covers the drainage area associated with this historic PCB location. It should be noted that site MP11 is currently covered under the Fort Belvoir ISW VPDES Permit # VA0092771 which will soon be moved to the MS4 Permit with the 2025 reissuance.

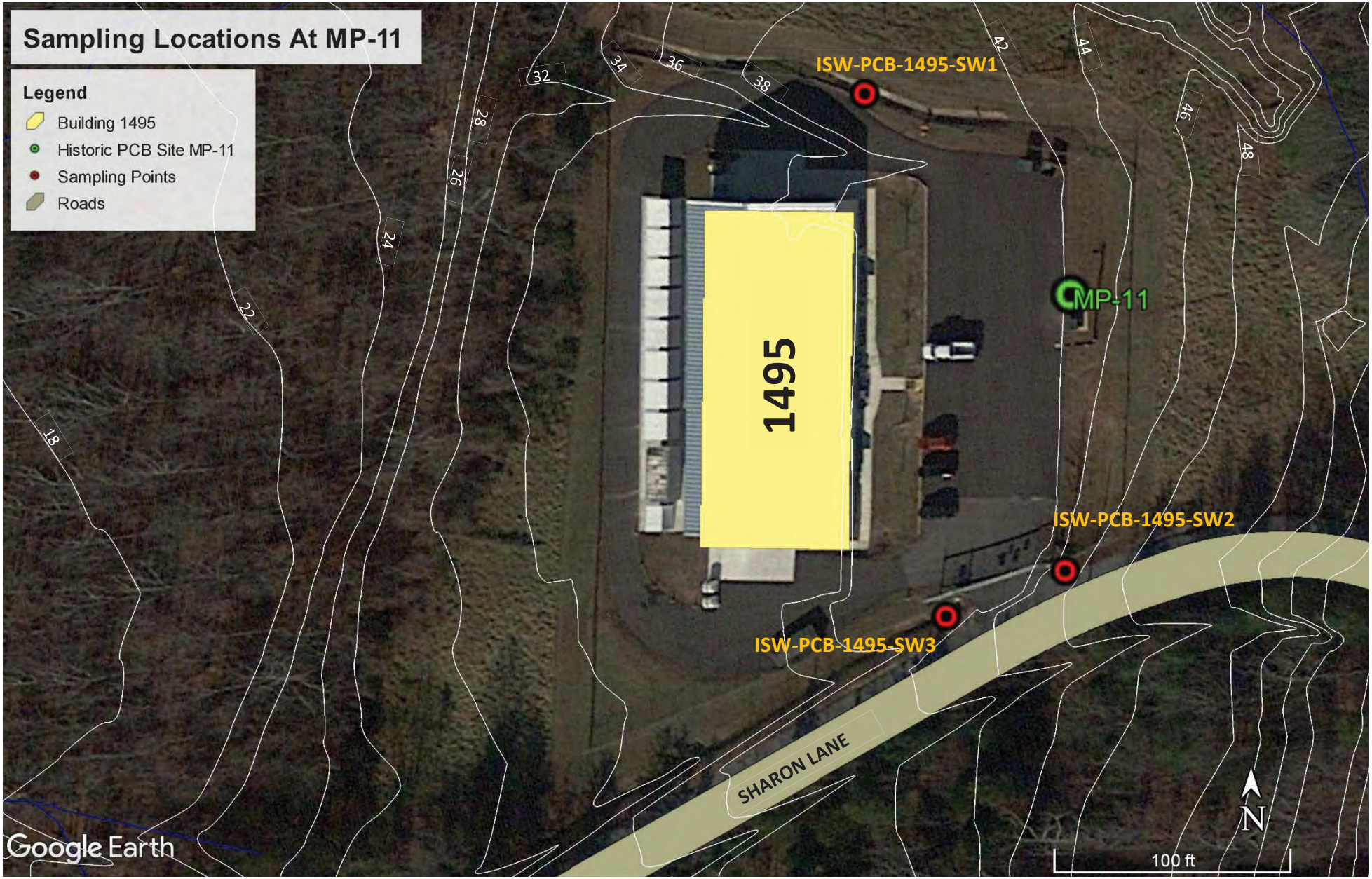
Conclusion: No Further Action required from RCRA. PCB sampling results from continued monitoring to be included in MS4 Annual Report.

Table A-12: MP11 (1495) Historical PCB Sample Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)/(mg/L)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Aroclor 1262 (mg/kg)	Aroclor 1268 (mg/kg)
#1 PCB EPA 8082	10/27/2014	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1151/33	4/20/2012	Soil	8082	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-1-4ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-2-3ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-3-3ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-4-3ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-5-5ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.1	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.2	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	**0.036**	NA	NA
1495-H.A.3	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.4	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.5	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.6	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.7	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.8	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-SW-01	7/6/2015	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-SW-02	7/6/2015	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-SW-03	7/6/2015	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
B1495-SS-1	8/12/2013	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	**43.9**	ND	ND
B1495-SS1-0-10	6/23/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
B1495-SS2-0-10	6/23/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
FBB1495ASP	8/20/2012	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	**3170**	ND	ND
FBB1495-P3FT	8/13/2013	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
FBB1495SS12IN	8/20/2012	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
FBB1495SS61N	8/20/2012	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	**230**	ND	ND
FBB1495WL5-13	8/27/2013	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
MP11-SB1-GW	4/6/2018	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB1-GW	5/9/2018	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB1-SB (11-11.5')	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB1-SS	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB2-SB (17-17.5')	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB2-SS	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	0.0458 J	NA	NA
MP11-SB3-SB (4-4.5')	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB3-SS	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB4-SB (15-15.5')	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB4-SS	3/30/2018	Soil	8082A	NA	0.0504 J	0.0504 J	0.0504 J	0.0504 J	0.0504 J	0.0504 J	0.0504 J	NA	NA
MP11-SB5-SB (14-15')	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB5-SS	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	0.0323 J	NA	NA
MP11-SB6-SS	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SB7-SS	3/30/2018	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SD1	3/30/2018	Sediment	8082A	NA	ND	ND	ND	ND	ND	ND	0.0836	NA	NA
MP11-SD2	3/30/2018	Sediment	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SD3	10/9/2018	Sediment	8082A	NA	ND	ND	ND	ND	ND	ND	0.0499	NA	NA
MP11-SD5	12/21/2018	Sediment	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SW2	4/6/2018	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
MP11-SW3	10/9/2018	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
SW001	11/27/2013	Water	1668A	4,470	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	4/30/2015	Water	1668A	93,100	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	9/29/2015	Water	1668A	328	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	2/28/2017	Water	1668A	2,237	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	3/31/2019	Water	1668A	678	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	4/23/2020	Water	1668A	391	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	3/24/2021	Water	1668A	3,887	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	10/29/2021	Water	1668A	2,334	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	11/11/2022	Water	1668A	860	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	11/21/2023	Water	1668A	401	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	1/31/2025	Water	1668A	5897	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	11/27/2013	Water	1668A	910	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	4/30/2015	Water	1668A	12,300	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	9/29/2015	Water	1668A	1,680	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	2/28/2017	Water	1668A	3,029	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	3/8/2019	Water	1668A	475	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	11/22/2019	Water	1668A	667	NA	NA	NA	NA	NA	NA	NA	NA	NA

SW003	3/24/2021	Water	1668A	2,949	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	10/29/2021	Water	1668A	1,137	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	4/18/2022	Water	1668A	2,816	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	11/11/2022	Water	1668A	1,232	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	11/21/2023	Water	1668A	1,087	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	1/31/2025	Water	1668A	942	NA	NA	NA	NA	NA	NA	NA	NA	NA

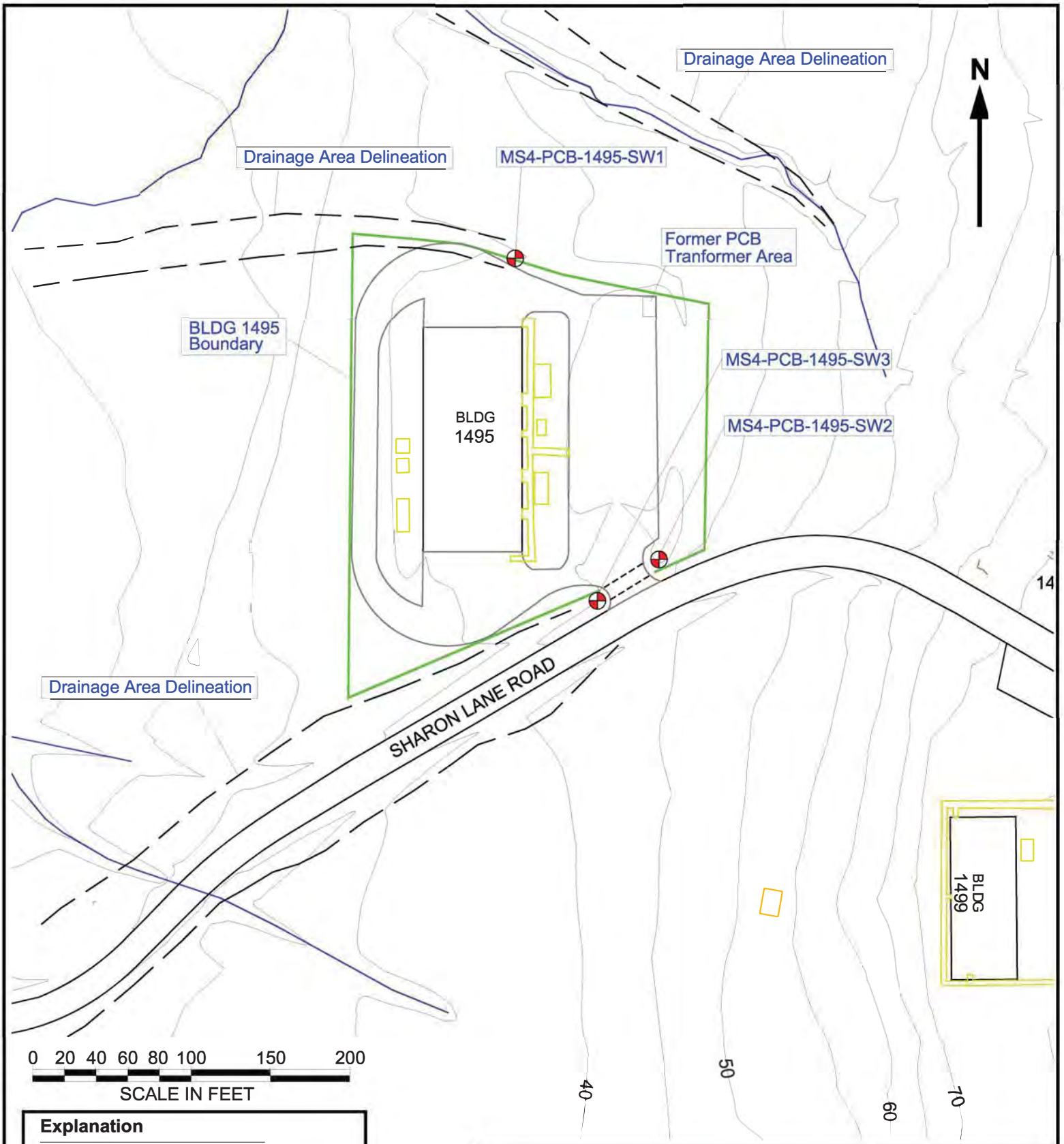
The source of the data: EA Engineering, 2012. ; EA Engineering, 2013. ; Inspection Experts Inc., 2015. ; Angler Environmental, 2015, 2017 ; RES 2019-2025



Created For:
U.S. Army Garrison

PCB Sampling Locations at Historic PCB Site MP11

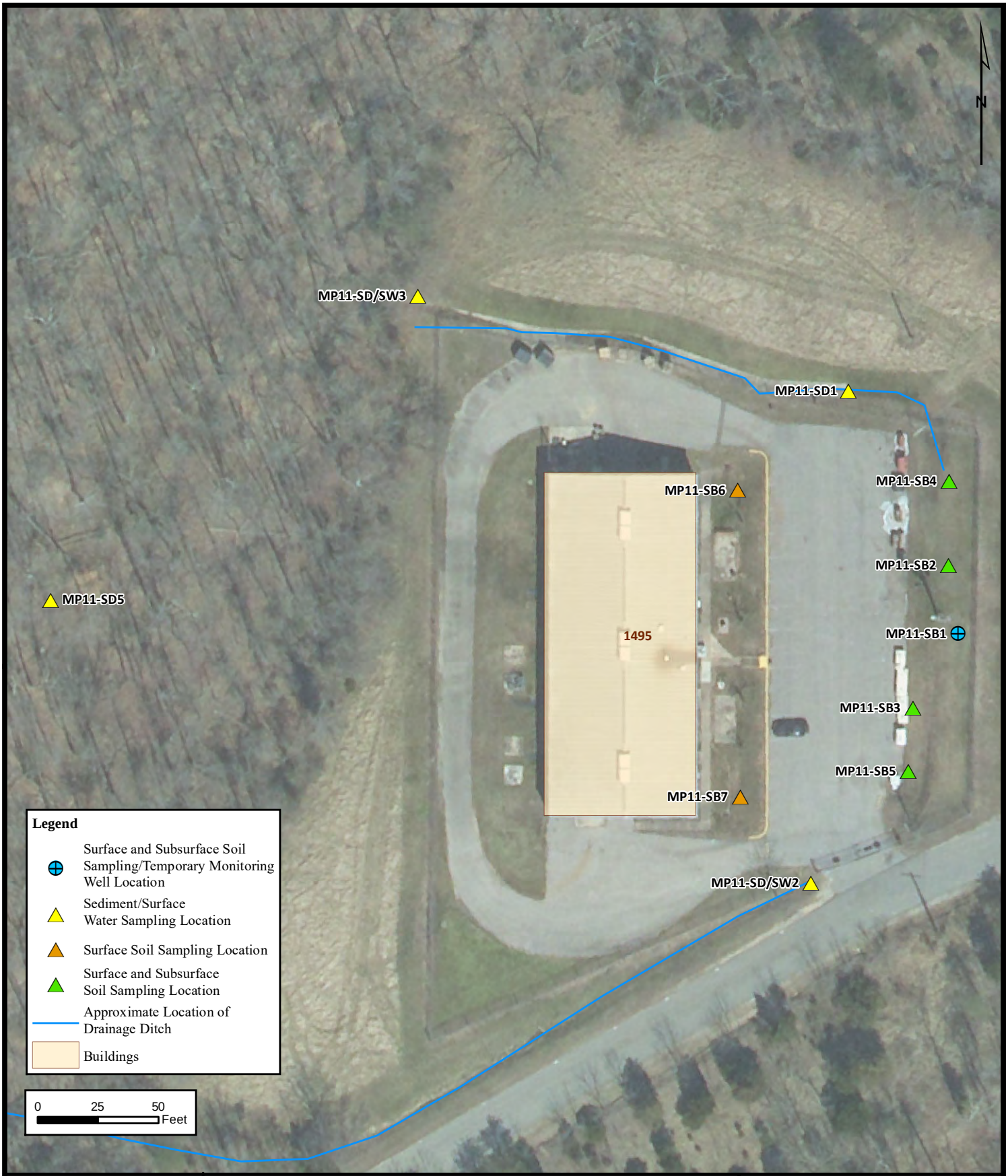
Created By:
SCF Construction and Fuel Services LLC



Explanation

- Culvert
- Drainage Area Delineation
- Proposed Sample Location
- 50 Contour Elevation in ft
- 701 Building and Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/16/2013	TIDEWATER INC	
DRAWN HS	Sampling Location at Bldg 1495 (Hazardous Waste Storage Building) Fort Belvoir, VA	
APPROVED WSY	DRAWING: Fig10_1495_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET 1/1



CONTRACT NO W912DR-12-D-0014	
CARTOGRAPHY BY B.Bouton	
CHECKED BY P. Yang	DATE 4/19/2021
SCALE 1 in = 54 ft	SHEET 1 of 1
Figure 2-2 - MP-11 Sampling Locations.mxd	

Figure 2-2
SWMU MP-11: Sample Locations
Concise Corrective Measures Study Statement
SWMUs MP-11, MP-13, and MP-14
Fort Belvoir, Virginia

Celebrating 35 years
PLEXUS scientific

Source: Fort Belvoir

3.0 RECOMMENDATIONS

Because the RFIs concluded that SWMUs MP-11, MP-13, and MP-14 pose negligible risk to ecological and human receptors under current land use scenarios but may pose a risk to other incompatible land uses, the development of a concise CMS statement, which recommends the implementation of administrative LUCs or limits on future land use, is warranted. SWMU-specific recommendations are provided for each of the three SWMUs that are the subject of this statement in the following subsections.

3.1 SWMU MP-11: Building 1495 Hazardous Waste Warehouse

Use of SWMU MP-11 by Fort Belvoir for hazardous waste processing, including the storage of leaking PCB-containing transformers, prompted the U.S. Army to conduct a series of soil removals and investigations. These actions culminated in the 2018 RFI, which included a multimedia sampling effort, HHRA, and SLERA/BERA. The RFI concluded that 1) SWMU MP-11 poses negligible risk to ecological and human receptors under its current and reasonably anticipated future land use scenario, which is as a RCRA permitted unit and the location of Fort Belvoir's Hazardous Waste Management building (Building 1495); and 2) future hypothetical resident and trespasser exposure to groundwater and surface water at SWMU MP-11 may pose an unacceptable risk, although that risk has a high level of uncertainty. Because SWMU MP-11 poses negligible risk to ecological and human receptors under current land use, as a hazardous waste management facility, and its anticipated future land use is unlikely to change, the U.S. Army recommends no further corrective action. To address the potential for hypothetical future resident and/or trespasser exposure to PCBs in groundwater and surface water, the U.S. Army recommends that a notation be added by the installation to Fort Belvoir's Master Plan and geographic information system (GIS) files to ensure that SWMU MP-11 land use is consistent with the findings of the RFI. Master plan and GIS file notations for SWMU MP-11 will not require the preparation a LUCIP.

3.2 SWMU MP-13: Theote Road / Warren Road Wash Yard Area

Use of SWMU MP-13 by Fort Belvoir for the stockpiling of construction debris and soil, and the unauthorized rinsing of potentially contaminated equipment and vehicles, prompted the U.S. Army to conduct a preliminary soil investigation. The results of the preliminary investigation led to the preparation and completion of an RFI, which included a multimedia sampling effort, HHRA, and SLERA/BERA. Prior to the completion of the RFI report, the Fort Belvoir DPW, to address PAHs and metals in surface soil, removed approximately 2,760 cubic yards of contaminated soil and a construction debris pile from the site. The RFI, in consideration of DPW's actions, concluded that 1) SWMU MP-13 poses negligible risk to ecological receptors; 2) future hypothetical resident exposure to arsenic, chromium, cobalt, and thallium in groundwater poses an unacceptable risk, although those metals are likely attributed to background rather than a site-related release; 3) SWMU MP-13 is currently undeveloped and no longer used for storage of soil or construction debris but that future land use, based on Fort Belvoir's Master Plan, could include commercial, recreational, and/or potentially residential uses; and 4) groundwater at the

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Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
804-698-4000

June 18, 2020

Mr. Felix M. Mariani
Chief Environmental Division
United States Army Garrison, Fort Belvoir
9820 Flagler Rd., Suite 213
Fort Belvoir, VA 22060

Re: Review of *Draft Final RCRA RFI SWMU MP-11: Building 1495 Hazardous Warehouse*
Fort Belvoir, VA

Dear Mr. Mariani,

Thank you for providing the Virginia Department of Environmental Quality (VDEQ), Office of Remediation Programs (ORP), the opportunity to review the aforementioned report dated April 2020. VDEQ found only one minor mistake in the document; *Section 7.2.9 SLERA Step 1: Assessment and Measurement Endpoints* – Table 6-2 should be 7-2.

VDEQ concurs that no further action or investigation is necessary at SWMU MP-11 at this time based on the anticipated land use. The Facility's Master Plan should be updated accordingly since future changes in land use will require additional investigations.

Should you have any questions or comments, please contact me at (804) 698-4126 or by email at cortney.marquette@deq.virginia.gov.

Sincerely,

Cortney Marquette
Remedial Program Manager
Office of Remediation Programs

2025

MP12: 249th Motorpool Area Stream Contamination

PCB TMDL ACTION PLAN – APPENDIX A-13

FORT BELVOIR

249th Motorpool Area Stream Contamination (MP12)

The Drum Investigation Area (SWMU MP-12) in an unnamed, intermittent stream near the 249th motor pool was identified during a wetland stream assessment to delineate the current condition of intermittent and perennial streams associated with a future project site. The stream assessment conducted on 18 September 2015 identified six abandoned 55-gallon drums located in and along the banks of the stream. The stream receives discharge from the currently inactive but permitted ISW outfall RO-033. As the site is downstream of the permitted ISW outfall, no additional recordkeeping is required by the ISW permit. Figure 14 shows the location of MP12.

The Fort Belvoir Restoration Program conducted an initial site assessment on 19 October 2015 that included a photoionization detector (PID) measurement to screen soils for volatile organic compounds (VOCs) and surface soil sampling for Total Petroleum Hydrocarbons (TPH), VOCs, and PCBs at the locations of the six drums. Aroclor 1260 PCBs were detected in samples, SS02 and SS03, at concentrations of 0.10 and 0.15 mg/kg respectively. The reported concentrations were below U.S. EPA Residential Soil Screening Levels (RSSLs) of 0.24 mg/kg (IEI, 2015). The results were evaluated by the Restoration Program on 15 January 2016 and possible concerns for the protection of groundwater based on the EPA risk-based SSL (0.0055 mg/kg) and ecological risk for the masked shrew (0.000332 mg/kg) were identified. The corroded 55 -gallon drums were removed from the site for disposal.

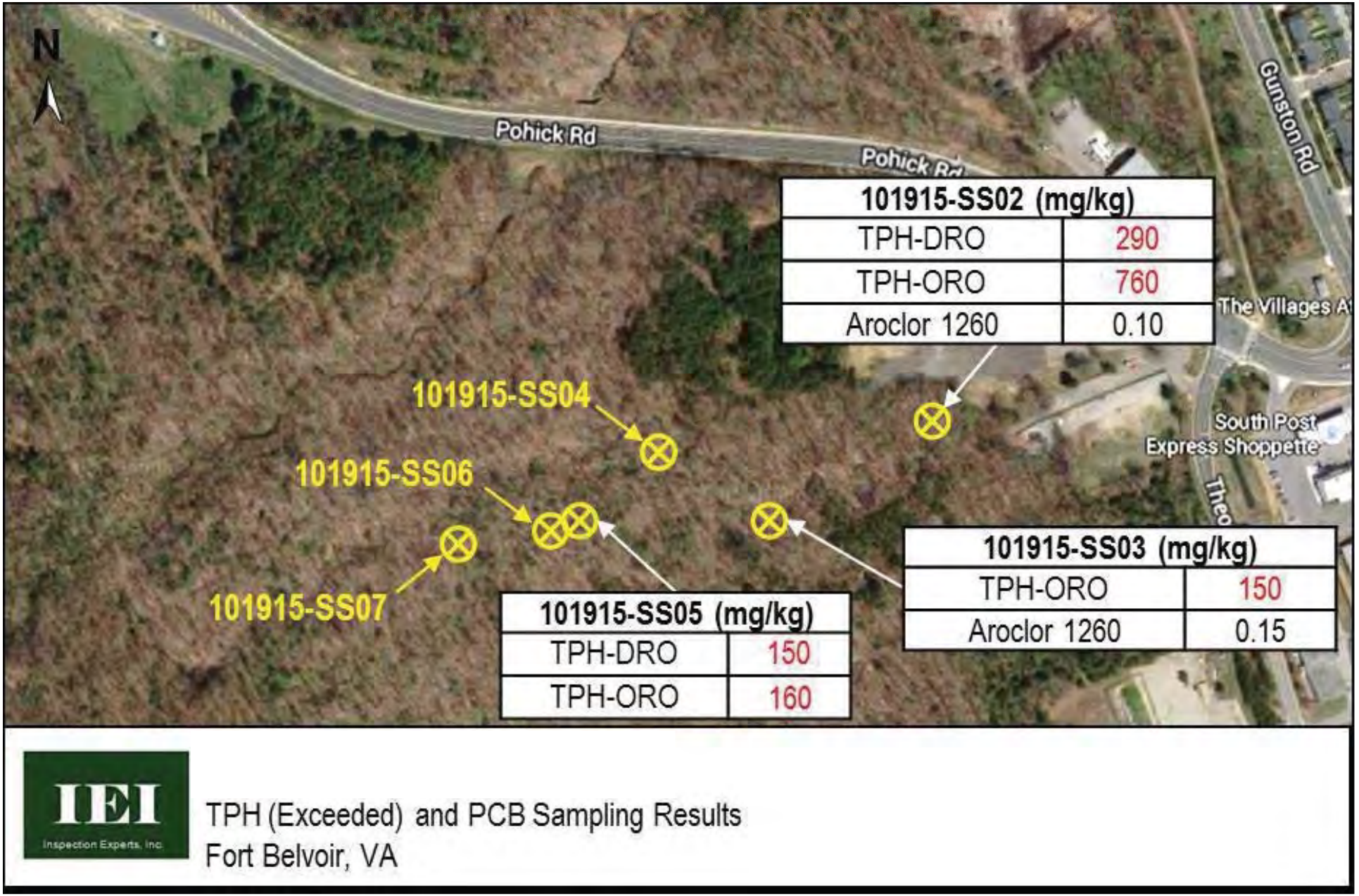
The stream site has a completed RCRA Phase I investigations as of August 2020 defining the nature and extent of contamination in soil, surface water, and sediment. All investigations and remediation were completed in accordance with the Fort Belvoir Part B Permit Corrective Action module IV and work plans approved by VADEQ. As the site was investigated under the RCRA program and is downstream of permitted ISW Outfall (RO-033), no stormwater characterization sampling is required at MP12. Sampling occurred in October 2018 at the locations approved in the *Final Quality Assurance Project Plan Addendum/Work Plan for sites MP-12, MP-13, MP-14, L-09, and A-24* (AECOM, 2018). All PCB sampling results from the RCRA investigations were used to update the historical sample summary located in Appendix A – Table A-12. The site received a letter from VADEQ on 24 August 2020 stating that no further investigations were necessary at site MP12. The site received a final letter from VADEQ on 12 August 2021 for NFA. Any changes in site status will be reported during the MS4 annual reporting process.

Conclusion: No Further Action.

Tabe A-12: MP-12 (1495) Historical PCB Sampling Data

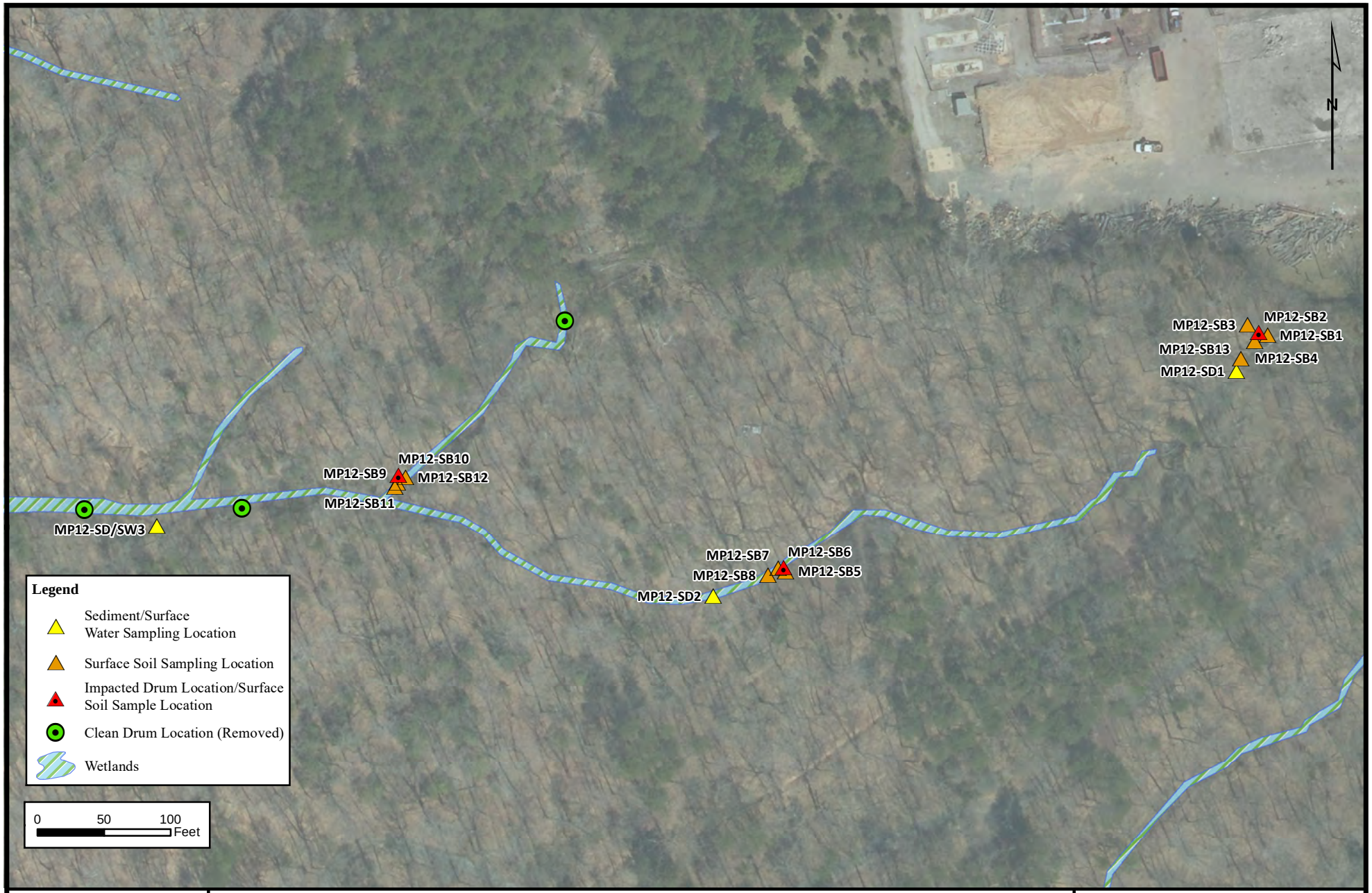
Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
SS01	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND0	ND
SS02	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	0.1
SS03	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	0.15
SS04	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS05	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS06	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS07	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND

ND: Not Detected
NA: Not Available
The source of the data: TestAmerica, 2015.



IEI
Inspection Experts, Inc.

TPH (Exceeded) and PCB Sampling Results
Fort Belvoir, VA



CONTRACT NO W912DR-12-D-0014	
CARTOGRAPHY BY B. Bouton	
CHECKED BY L. Heness	DATE 5/14/2020
SCALE 1 in = 100 ft	SHEET 1 of 1
Figure 4-1 - Location of Soil Borings.mxd	

Figure 4-1
2018 RFI Sample Locations
RCRA Facility Investigation Report
SWMU-MP12: The 249th Motor Pool Area Stream Contamination
Fort Belvoir, Virginia

Celebrating 30 years
PLEXUS scientific

Source: Fort Belvoir

8. Summary and Conclusions

This report presents the RFI conducted by Plexus and AECOM for SWMU MP-12 at U.S. Army Garrison Fort Belvoir, Virginia. The RFI was conducted to confirm the presence of SVOCs and metals associated with the previous TPH detections, and, if confirmed, determine the nature and extent of contamination. During the RFI, PAHs were reported above their respective PALs in five soil samples and two sediment samples; however, there were no analyte exceedances detected in the most downgradient sample MP12-SD3, collected within the drainage channel. Additionally, soil samples MP12-SB9 through MP12-SB12, collected beneath, cross-gradient and downgradient of the western-most drum location did not report any analyte exceedances. Surface water sample MP12-SW3 exceeded the PAL (0.0006 mg/L) for cobalt, with a concentration of 0.000603 J mg/L. The slight exceedance above the surface water quality criteria/PAL is likely attributed to naturally occurring elevated cobalt concentrations in the surrounding soil or sediment. Cobalt was detected in each of the soil and sediment samples collected during the RFI with a maximum detection of 5.29 mg/kg at sample MP12-SB7; all cobalt concentrations were below the background concentration of 26 mg/kg established at Quantico, Virginia (Tetra Tech, 2000). Based on the results of the 2018 sampling events, additional step-out samples and groundwater samples were not warranted at MP12. Both an HHRA and ERA were conducted to evaluate potential adverse effects to both human health and the environment based on current conditions within SWMU MP-12. The HHRA was conducted for SWMU MP-12, using the VURAM, Version 2.2, to evaluate the soil, sediment, and surface water RFI data. The SLERA was also completed using data collected during the RFI for soil, sediment, and surface water.

The following conclusions were drawn from each evaluation:

- HHRA
  - The potential cumulative cancer risk estimates were below the VADEQ and USEPA cumulative cancer risk threshold of 1E-04 (i.e., threshold that would warrant remedial action) and non-cancer hazard results were below the cumulative hazard index threshold of 1 for all receptors at SWMU MP-12. Even though some chemicals have potential cancer risk estimates within the acceptable cancer risk range of 1E-06 to 1E-04; the cumulative results for all receptors, exposure media, and exposure pathways remain below the acceptable combined risk performance standard/goal of 1E-04. Adverse health effects from exposure to soil is not likely for the on-site current/future industrial/commercial worker, future construction worker, and hypothetical future resident since SWMU MP-12 is located within a steep-sided ravine and is unsuitable for future development/construction. Also, exposure to sediment and surface water is likely to produce minimal or insignificant adverse health effects for the off-site current/future trespasser. No need for further assessment or remediation on the basis of estimated human health risk at SWMU MP-12 for these receptors.
- ERA
  - Refinement of Chemicals of Potential Ecological Concern (COPECs) during the Baseline Ecological Risk Assessment (BERA) Step 3 direct contact evaluation for soil invertebrates, benthic invertebrates and wildlife Dose Rate Model (DRM) indicated that potential adverse effects were negligible for soil invertebrate communities, terrestrial and semi-aquatic wildlife populations, and for benthic invertebrate communities evaluated in this ERA. No need for further assessment or remediation on the basis of ecological risk at SWMU MP-12 for these receptors.

Based on the findings of this RFI, there is negligible risk to ecological and human receptors from PAHs and metals released at SWMU MP-12. No further action or investigation is recommended at SWMU MP-12.

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Secretary of Natural Resources

David K. Paylor
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804-698-4000

August 24, 2020

Mrs. Wilamena Harback
Chief Environmental Division
United States Army Garrison, Fort Belvoir
9820 Flagler Rd., Suite 213
Fort Belvoir, VA 22060

Re: Review of *Draft Final RCRA Facility Investigation of Solid Waste Management Unit MP-12: Drum Investigation Area*
Fort Belvoir, VA

Dear Mrs. Harback,

Thank you for providing the Virginia Department of Environmental Quality (VDEQ), Office of Remediation Programs (ORP), the opportunity to review the aforementioned report dated June, 2020. VDEQ has reviewed the RFI and concurs that no further investigations are necessary at SWMU MP-12.

Should you have any questions or comments, please contact me at (804) 698-4126 or by email at cortney.marquette@deq.virginia.gov.

Sincerely,

Cortney Marquette
Remedial Program Manager
Office of Remediation Programs

2025

MP13: Theote Road/ Warren Road Wash Yard Area

PCB TMDL ACTION PLAN – APPENDIX A-14

FORT BELVOIR

Theote Road/Warren Road Wash Yard Area (MP13)

The Area of Potential Concern (AOPC) associated with the Theote Road and Warren Road wash yard (SWMU MP-13), was discovered during a project site inspection. Stained soils and odor were encountered while performing construction activities as part of the Building 1495 remodeling project in August 2013, as mentioned in Section 7.10 above. When discussing on-site activities, the contractors stated that washing of contaminated equipment was done within this AOPC. Work was stopped until the contractor sampled and submitted a Site Safety and Health Plan (SSHP), samples taken from the work site on 23 June 2014 were non-detect for PCBs. The site area was previously used for military vehicle and equipment storage from the 1950's until the 1970's when the area was transitioned to storage for recreational vehicles and boats. The property was re-purposed to a contractor lot in the early 2000's and was used to stockpile materials with some industrial activity, possibly including concrete crushing, in 2009. The site area was used to stockpile undocumented construction debris and soil until 2019 when the stockpiles were removed for off-site disposal and remediation of the area was initiated in preparation for potential military construction (MILCON). Figure 15 shows the location of MP13.

On 19 October 2015 the Restoration Program conducted an initial site assessment which included a PID to pre-screen soils for volatile organic compounds (VOCs) and surface soil sampling for Total Petroleum Hydrocarbons (TPH), VOCs, semi-volatile organic compounds (SVOCs), metals, pesticides, and PCBs at 11 locations within the yard area. This round of sampling was focused on the area associated with the access point where there was a clear indication of vehicle traffic. Aroclor 1260 PCBs were detected in all samples, WYSS-01 through WYSS-11, with concentrations between 0.009 and 0.069 mg/kg, below the U.S. EPA RSSL of 0.24 mg/kg (IEI, 2016). The reported method detection level for the PCBs (0.0066 mg/kg) in soil exceeded U.S. EPA SSL-based criteria for the protection of groundwater (0.0055 mg/kg) and ecological risk for the masked shrew (0.000332 mg/kg). Additional surface soil sampling was conducted over the entire yard area on 4 February 2016 to delineate the extent of potential contamination. Aroclor 1260 concentrations were detected at 20 of the 28 locations sampled ranging from 0.0095 to 0.10 mg/kg, below the reported RSSL value of 0.24 mg/kg. The reported method detection level for the PCBs (0.0066 mg/kg) in soil exceeded U.S. EPA SSL-based criteria for the protection of groundwater (0.0055 mg/kg) and ecological risk for the masked shrew (0.000332 mg/kg).

On 4 February 2016, additional surface soil sampling was conducted across the AOPC to delineate the area of contamination. Aroclor 1260 was detected at 20 of the 28 locations sampled ranging in values from 0.0095 to 0.10 mg/kg. As discussed above, although the reported values were below U.S. EPA RSSL, they did exceed values for protection of groundwater and the masked shrew.

On 7 August 2017, two locations were sampled for total PCBs (tPCBs) in effluents leaving the site. These results showed that runoff from the site contained tPCBs above the WCQ with concentrations of 692.28 **ρg/L** at sampling point MS4-PCB-Warren-1, located on the west of the site, and 2,468.26 **ρg/L** at MS4-PCB-Warren-2 located on the southeast portion of the site. During sampling it was noted that MS4-PCB-Warren-2, which showed substantially higher concentration of tPCBs, was ponded, heavily turbid, and draining through a partially buried pipe (Angler, 2017).

An RFI was initiated in 2018 to fully characterize the site and was completed in January 2021. This investigation delineated the nature and extent of contamination in soil and groundwater. A contemporaneous soil removal was completed by Fort Belvoir at the site in March 2019. The removal involved the disposal of a large soil stockpile at the middle of the site, disposal of concrete debris across the site, and the disposal of the top six inches of soil from across the site. Following the removal, the site was regraded and stabilized to be a fully open grassed recreational area. Sampling was conducted by Fort Belvoir both prior to and following the interim soil removal. After the soil removal, aside for some low-level VOC detections, the site was found to be below 2019 U.S. EPA residential soil screening levels for

PCBs. The site received concurrence from VADEQ for NFA on 4 January 2021 with a proviso for restriction on groundwater usage for metals. VADEQ further concurred with a decision document for NFA at the site on 12 August 2021. Site inspections have shown that the re-grading and vegetative stabilization at the site have reduced runoff, with the site being vegetatively stable having no visual sediment transportation. It is anticipated that the restoration of the site and its vegetative cover will encourage a downward trajectory of PCB concentrations in stormwater to attain the WQC.

After the soil removal completed in March 2019, levels of tPCBs for sampling point MS4-PCB-Warren-1 were well below the WQC of 640 **ρg/L** for the one sample obtained in May 2020. Sample results were not able to be obtained in the following years, due to no water in the channel as a result of the completed site grading and revegetation. Conversely, levels for tPCBs increased dramatically at sampling point MS4-PCB-Warren-2 to 39,526 **ρg/L** in May 2020 and were above the WQC with both subsequent sampling events being relatively high. This is believed to be attributable to accumulation of PCB impacted soils within the pipe leading to the MS4-PCB-Warren-2 sampling point, resulting in migration of PCB impacted soils during rain events as this pipe was not cleaned out during the soil removal project. Supplemental sampling for PCB congeners in soil, sediment, and outfall discharge was conducted by Fort Belvoir in July 2022. Total PCB congener concentrations in soil topographically upgradient of the eastern outfall drain ranged from 2,300 ng/kg (0.0023 mg/kg) to 44,000 ng/kg (0.044 mg/kg), below the U.S. EPA RSSL of 0.24 mg/kg. Total PCB congener concentrations in sediment at the outfall location were 11,000 ng/kg (0.011 mg/kg), also below the U.S. EPA RSSL of 0.24 mg/kg. The reported LODs, LOQs and MDLs for the congener PCBs in soil and sediment were below the U.S. EPA SSL-based criteria for the protection of groundwater (0.0055 mg/kg) and ecological risk for the masked shrew (0.000332 mg/kg). Total PCB concentration in the outfall surface water in July 2022 were 1,600 **ρg/L** (0.0016 ug/L).

The MP-13 site is considered fully remediated under the RCRA program. The site is exclusively grassed area with drainage features on the east and west of the site. The western channel is concrete lined which would facilitate sediment transport. The identified drainage could impact unnamed tributaries to wetlands to Gunston Cove. Since PCBs remain present below residential screening criteria in soil at the site, PCB congeners exceed the WQC in the stormwater at the site, and there are nearby drainage features, continued stormwater monitoring is recommended. Any PCB sampling results made available from RCRA investigations or ongoing Fort Belvoir sampling will be used to update the historical sample summary located in Appendix A – Table A-13. Changes in site status will be reported during the MS4 annual reporting process.

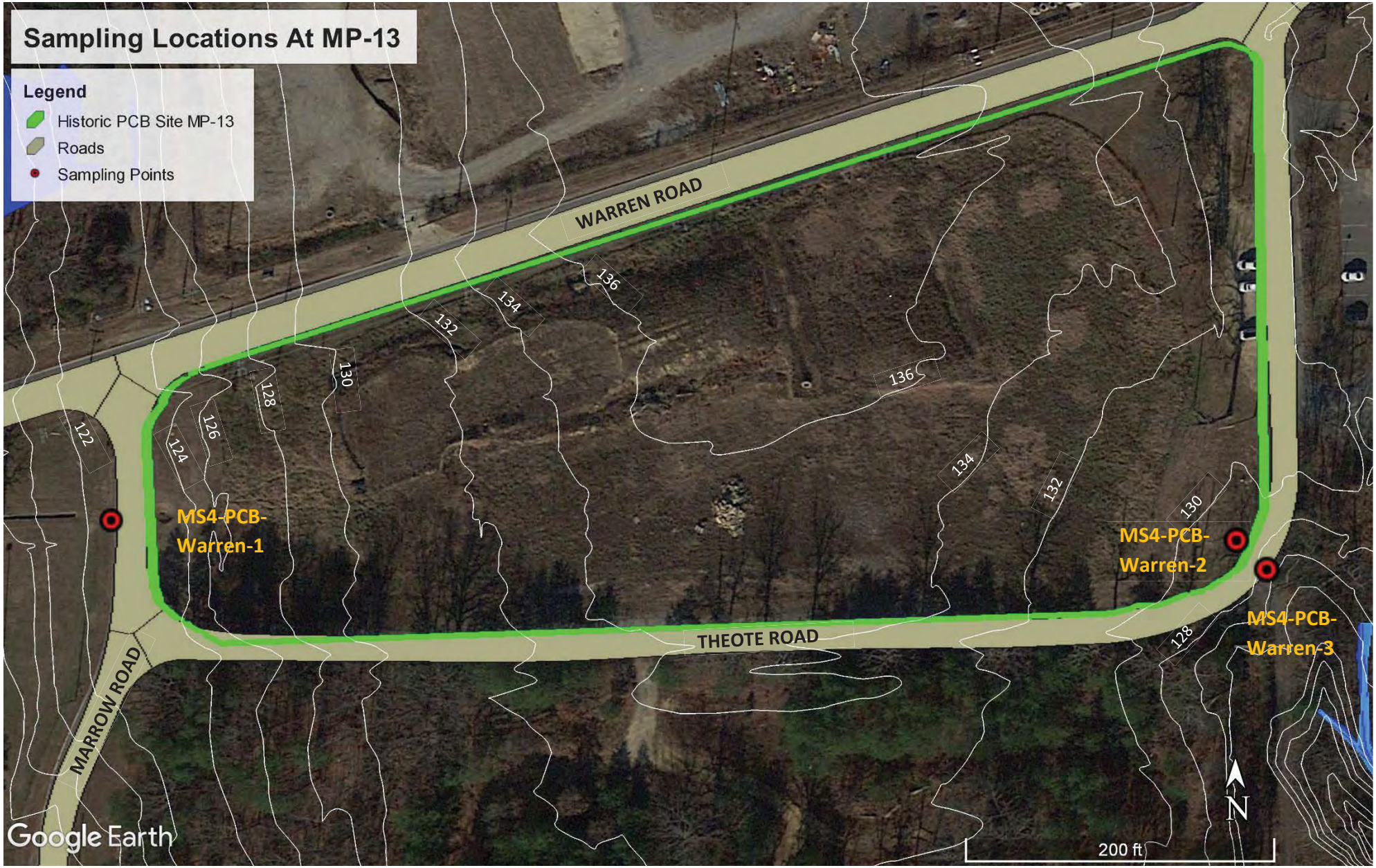
According to the Fort Belvoir Master Plan, current land use at SWMU MP-13 and its immediate vicinity has been classified as Community as well as constrained for future development. Because future land use could include commercial, recreational and/or potentially residential uses, Administrative LUCs are recommended to ensure protection of human health and the environment should any change be made to the current land use. The Administrative LUCs should include a prohibition of future potable use of the groundwater. Implementation, maintenance, reporting, and enforcement of the LUCs would be included in a Land Use Control Implementation Plan (LUCIP) for the site. (Plexus Scientific, 2021)

Conclusion: No Further Action required from RCRA. Recommend cleanout of outlet pipe at MS4-PCB-Warren-2 with soil sampling and possible soil removal adjacent to the outlet drain. Continued annual monitoring to document downward trend toward meeting WQC.

Tabe A-13: MP-13 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
WYSS-01	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	69
WYSS-02	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	13 J
WYSS-03	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	14 J
WYSS-04	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	19
WYSS-05	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	19
WYSS-06	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	18 J
WYSS-07	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	8.9 J
WYSS-08	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	9.4 J
WYSS-09	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	11 J
WYSS-10	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	15 J
WYSS-11	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	39
SS01	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS02	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	70
SS03	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS04	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	34
SS04D	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	38
SS05	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	100
SS06	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS07	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS08	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	13 J
SS09	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	12 J
SS10	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	14 J
SS11	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS12	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	41
SS13	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS13D	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	9.5 J
SS14	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	11 J
SS15	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	11 J
SS16	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	27
SS17	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	32
SS18	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	16 J
SS19	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS20	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	11 J
SS21	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	26
SS22	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	12 Jp
SS23	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	48
SS24	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	12 J
SS25	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	67
SS26	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	41
SS27	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS28	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS28D	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
Warren Road 1	8/7/2017	Water	1668A	692.28	NA	NA	NA	NA	NA	NA	NA
Warren Road 2	8/7/2017	Water	1668A	2468.26	NA	NA	NA	NA	NA	NA	NA
Warren Road 1	1/24/2019	Water	1668A	702.628	NA	NA	NA	NA	NA	NA	NA
Warren Road 2	1/24/2019	Water	1668A	10,456.22	NA	NA	NA	NA	NA	NA	NA
Warren Road 1	5/22/2020	Water	1668A	10.89	NA	NA	NA	NA	NA	NA	NA
Warren Road 2	5/22/2020	Water	1668A	39,526.14	NA	NA	NA	NA	NA	NA	NA
Warren Road 2	10/29/2021	Water	1668A	2,628.43	NA	NA	NA	NA	NA	NA	NA
Warren Road 2	3/17/2022	Water	1668A	22415	NA	NA	NA	NA	NA	NA	NA
WR01-SW	7/18/2022	Water	1668A	1600	NA	NA	NA	NA	NA	NA	NA
WR01-SO	7/18/2022	Solid	1668A	NA	ND	ND	ND	ND	ND	0.1	0.09
WR02-SO	7/18/2022	Solid	1668A	NA	ND	ND	ND	ND	0.01	1.1	1.1
WR03-SO	7/18/2022	Solid	1668A	NA	ND	ND	ND	ND	0.01	1.8	1.9
WR01-SD	7/18/2022	Solid	1668A	NA	ND	NA	ND	ND	ND	0.51	0.4
Warren Road 2	11/21/2023	Water	1668A	625.52	NA	NA	NA	NA	NA	NA	NA
Warren Road 2	1/9/2024	Water	1668A	6180.642	NA	NA	NA	NA	NA	NA	NA

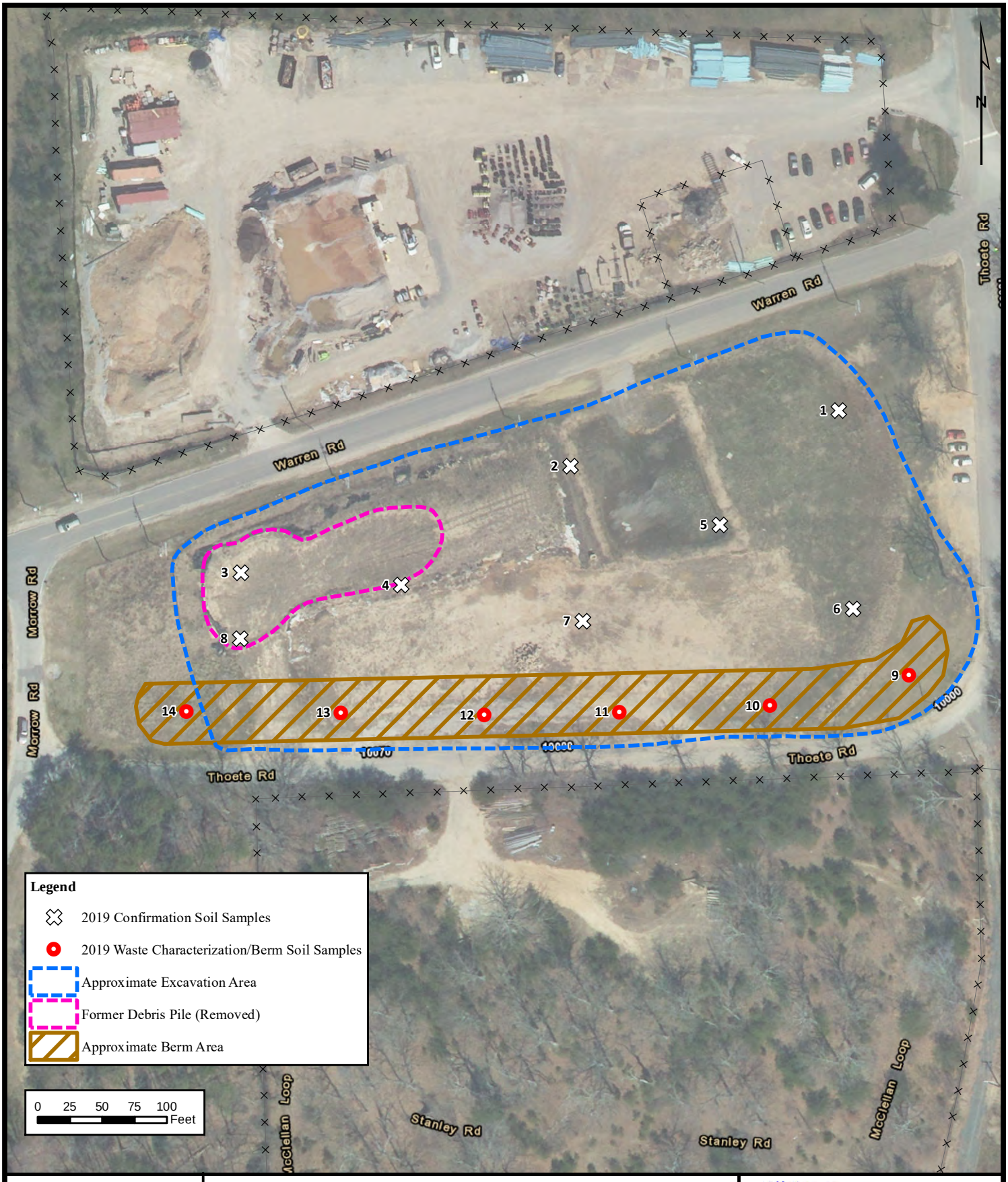
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
p: The %RPD between the primary and confirmation column/detector is >40%. The lower vaule has been reported
ND: Not Detected
NA: Not Available
The source of this data: TestAmerica, 2015.



Created For:
U.S. Army Garrison

PCB Sampling Locations at Historic PCB Site MP13

Created By:
SCF Construction and Fuel Services LLC



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CARTOGRAPHY BY B.Bouton	
CHECKED BY P. Yang	DATE 4/19/2021
SCALE 1 in = 100 ft	SHEET 1 of 1
Figure 2-4 - MP-13 2019 Excavation Area.mxd	

Figure 2-4
SWMU MP-13: 2019 Excavation and Debris Removal Areas
Concise Corrective Measures Study Statement
SWMUs MP-11, MP-13, and MP-14
Fort Belvoir, Virginia

Celebrating 35 years
PLEXUS scientific

Source: Fort Belvoir

CONTRACT NO W912DR-12-D-0014	
CARTOGRAPHY BY B.Bouton	
CHECKED BY L. Heness	DATE 10/7/2020
SCALE 1 in = 75 ft	SHEET 1 of 1
Figure 4-1 - Location of Soil Borings.mxd	

Figure 4-1
Soil Boring Locations
RCRA Facility Investigation Report
SWMU-MP13: The Theote Road/Warren Road Wash Yard Area
Fort Belvoir, Virginia

Celebrating 30 years
PLEXUS scientific

Source: Fort Belvoir

3.0 RECOMMENDATIONS

Because the RFIs concluded that SWMUs MP-11, MP-13, and MP-14 pose negligible risk to ecological and human receptors under current land use scenarios but may pose a risk to other incompatible land uses, the development of a concise CMS statement, which recommends the implementation of administrative LUCs or limits on future land use, is warranted. SWMU-specific recommendations are provided for each of the three SWMUs that are the subject of this statement in the following subsections.

3.1 SWMU MP-11: Building 1495 Hazardous Waste Warehouse

Use of SWMU MP-11 by Fort Belvoir for hazardous waste processing, including the storage of leaking PCB-containing transformers, prompted the U.S. Army to conduct a series of soil removals and investigations. These actions culminated in the 2018 RFI, which included a multimedia sampling effort, HHRA, and SLERA/BERA. The RFI concluded that 1) SWMU MP-11 poses negligible risk to ecological and human receptors under its current and reasonably anticipated future land use scenario, which is as a RCRA permitted unit and the location of Fort Belvoir's Hazardous Waste Management building (Building 1495); and 2) future hypothetical resident and trespasser exposure to groundwater and surface water at SWMU MP-11 may pose an unacceptable risk, although that risk has a high level of uncertainty. Because SWMU MP-11 poses negligible risk to ecological and human receptors under current land use, as a hazardous waste management facility, and its anticipated future land use is unlikely to change, the U.S. Army recommends no further corrective action. To address the potential for hypothetical future resident and/or trespasser exposure to PCBs in groundwater and surface water, the U.S. Army recommends that a notation be added by the installation to Fort Belvoir's Master Plan and geographic information system (GIS) files to ensure that SWMU MP-11 land use is consistent with the findings of the RFI. Master plan and GIS file notations for SWMU MP-11 will not require the preparation a LUCIP.

3.2 SWMU MP-13: Theote Road / Warren Road Wash Yard Area

Use of SWMU MP-13 by Fort Belvoir for the stockpiling of construction debris and soil, and the unauthorized rinsing of potentially contaminated equipment and vehicles, prompted the U.S. Army to conduct a preliminary soil investigation. The results of the preliminary investigation led to the preparation and completion of an RFI, which included a multimedia sampling effort, HHRA, and SLERA/BERA. Prior to the completion of the RFI report, the Fort Belvoir DPW, to address PAHs and metals in surface soil, removed approximately 2,760 cubic yards of contaminated soil and a construction debris pile from the site. The RFI, in consideration of DPW's actions, concluded that 1) SWMU MP-13 poses negligible risk to ecological receptors; 2) future hypothetical resident exposure to arsenic, chromium, cobalt, and thallium in groundwater poses an unacceptable risk, although those metals are likely attributed to background rather than a site-related release; 3) SWMU MP-13 is currently undeveloped and no longer used for storage of soil or construction debris but that future land use, based on Fort Belvoir's Master Plan, could include commercial, recreational, and/or potentially residential uses; and 4) groundwater at the

site is not used as a potable water source because Fort Belvoir obtains their potable supply from Fairfax Water. Because SWMU MP-13 poses negligible risk to ecological and human receptors under current land use but anticipated future land use could include potential incompatible uses, according to Fort Belvoir's Master Plan, the U.S. Army recommends that administrative LUCs be applied by the installation to Fort Belvoir's Master Plan and GIS files to ensure that groundwater is not used for potable purposes in the future. Further, preparation of a LUCIP is recommended by the U.S. Army to define implementation, maintenance, and enforcement requirements for the groundwater use prohibition.

3.3 SWMU MP-14: Building 2476 Hazardous Storage Area

Removal of a hazardous material locker from the parking lot of Building 2476 and the identification of stained soils at that time, prompted the U.S. Army to conduct a preliminary soil investigation. The results of the preliminary investigation led to the preparation and completion of an RFI, which included a multimedia sampling effort, HHRA, and SLERA/BERA. The RFI concluded that 1) SWMU MP-14 poses negligible risk to ecological receptors; 2) future hypothetical resident exposure to COCs in soil and groundwater poses an unacceptable risk; 3) SWMU MP-14 is unlikely to be developed for residential use; and 4) groundwater at the site is not used as a potable water source because Fort Belvoir obtains their potable supply from Fairfax Water. Because SWMU MP-14 poses negligible risk to ecological and human receptors under current land use and its anticipated future land use, industrial operations, is unlikely to pose an unacceptable risk, the U.S. Army recommends no further corrective action. To address the potential for hypothetical future resident exposure to COCs in soil (arsenic and PAHs) and groundwater (cobalt), the U.S. Army recommends that a notation be added by the installation to Fort Belvoir's Master Plan and GIS files to ensure that SWMU MP-14 land use is consistent with the findings of the RFI. Master plan and GIS file notations for SWMU MP-14 will not require the preparation a LUCIP.

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Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
804-698-4000

January 4, 2021

Mrs. Wilamena Harback
Chief Environmental Division
United States Army Garrison, Fort Belvoir
9820 Flagler Rd., Suite 213
Fort Belvoir, VA 22060

Re: Review of *RCRA Facility Investigation Report for SWMU MP-13: The Theote Rd. / Warren Rd. Wash Area*
Fort Belvoir, VA

Dear Mrs. Harback,

Thank you for providing the Virginia Department of Environmental Quality (VDEQ), Office of Remediation Programs (ORP), the opportunity to review the aforementioned report dated December, 2020. VDEQ concurs that no further action is necessary and that groundwater use should be prohibited through an administrative LUC at the site.

Should you have any questions or comments, please contact me at (804) 698-4126 or by email at cortney.marquette@deq.virginia.gov.

Sincerely,

Cortney Marquette
Remedial Program Manager
Office of Remediation Programs

2025

MP14: Building 2476 Former Hazmat Storage Locker

PCB TMDL ACTION PLAN – APPENDIX A-15

FORT BELVOIR

Building 2476 Former Hazmat Storage Locker (MP14)

Building 2476 (SWMU MP-14) was built as a Vehicle Maintenance Shop/Motor pool was used by the 911th Technical Rescue Engineer Company since 2008 for organizational vehicle maintenance. A hazardous material storage locker containing unknown waste chemicals was located in the SW corner of the facility's parking lot. The locker which was on top of grass and soil without any secondary containment was removed in August of 2015. After removing the hazmat locker personnel noted a hole in the bottom of the locker and localized discoloration in the soils where the locker was stored. The affected area consisted of approximately 1,600 sq ft. Figure 16 shows the location of MP14.

On 26 August 2015, the Restoration Program conducted surface soil sampling of the stained soil that was underneath and on either side of the former storage site. The soil samples were sampled for VOCs, SVOCs, TPH, pesticide, metals, PAH compounds, and PCB compounds. Aroclors 1254 and 1260 were detected in one of the four samples collected with reported concentrations at 0.016 and 0.098 mg/kg, respectively. Although the reported PCB concentrations did not exceed the residential risk-based SSL (0.24 mg/kg) for protection of human health, potential impacts to groundwater and the ecological effects for the masked shrew, determined the need of additional investigation. Additional constituents detected above screening criteria in soils at MP14 consisted of metals (arsenic, cobalt, thallium) and PAH compounds (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene). There are no direct drainage features or stormwater conveyance systems in the vicinity of the locker. Surface run-off occurs as sheet flow to Mason Run before it intersects Accotink Creek just south of Route 1. It is unlikely the area described as MP14 would discharge PCBs to impaired water bodies and therefore the site is recommended for No Further Action.

The site has been fully characterized and completed RCRA Phase I investigations as of September 2020 defining the nature and extent of the contamination. All investigations and remediation were completed in accordance with the Fort Belvoir RCRA Part B Permit Corrective Action module IV and work plans approved by VADEQ. As the site was investigated under the RCRA program and there is no direct conveyance of runoff to surface waters, no stormwater characterization sampling is required at MP-14. Sampling occurred in October 2018 at the locations approved in *Final Quality Assurance Project Plan Addendum/Work Plan for sites MP-11, MP-12, MP-13, MP-14, L-09, and A-24* (AECOM, 2018). All PCB sampling results from the RCRA investigations were used to update the historical sample summary located in Appendix A – Table A-14. The site received a letter from VADEQ on 18 September 2020 stating that no further action or investigation is necessary at site MP-14 as long as the current land use designation remains in place. The site received a final letter from VADEQ on 12 August 2021 for NFA.

It should be noted that this site is currently slated for a complete re-development as a MILCON project which will ultimately cover this site under asphalt and change the drainage characteristics for the site. Any changes in site status, once they occur, will be reported during the MS4 annual reporting process.

Conclusion: No Further Action.

Tabe A-14: MP-14 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)/ (mg/L)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
SS-2476-01	8/26/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS-2476-02	8/26/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS-2476-03	8/26/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	0.016 J	0.098
SS-2476-04	8/26/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB1-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB2-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB3-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB4-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB5-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	0.132 J	ND	ND	ND
MP14-SB6-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB1-GW-MSD	4/5/2018	Water	8082A	NA	0.00238	ND	ND	ND	ND	ND	0.00227
MP14-SB1-GW-MSD	4/5/2018	Water	8082A	NA	0.00214	ND	ND	ND	ND	ND	0.00249

J: Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value
ND: Not Detected
NA: Not Available
All Total PCB (tPCB) data presented are adjusted ('censored') valves The source of this data: TestAmerica, 2015

CONTRACT NO W912DR-12-D-0014	
CARTOGRAPHY BY B.Bouton	
CHECKED BY L. Heness	DATE 3/26/2020
SCALE 1 in = 15 ft	SHEET 1 of 1
Figure 4-1 - Sample Locations.mxd	

Figure 4-1
Sample Locations
RCRA Facility Investigation Report
SWMU-MP14: Building 2476 Hazardous Materials Storage Locker
Fort Belvoir, Virginia

Celebrating 30 years
PLEXUS scientific

Source: Fort Belvoir

site is not used as a potable water source because Fort Belvoir obtains their potable supply from Fairfax Water. Because SWMU MP-13 poses negligible risk to ecological and human receptors under current land use but anticipated future land use could include potential incompatible uses, according to Fort Belvoir's Master Plan, the U.S. Army recommends that administrative LUCs be applied by the installation to Fort Belvoir's Master Plan and GIS files to ensure that groundwater is not used for potable purposes in the future. Further, preparation of a LUCIP is recommended by the U.S. Army to define implementation, maintenance, and enforcement requirements for the groundwater use prohibition.

3.3 SWMU MP-14: Building 2476 Hazardous Storage Area

Removal of a hazardous material locker from the parking lot of Building 2476 and the identification of stained soils at that time, prompted the U.S. Army to conduct a preliminary soil investigation. The results of the preliminary investigation led to the preparation and completion of an RFI, which included a multimedia sampling effort, HHRA, and SLERA/BERA. The RFI concluded that 1) SWMU MP-14 poses negligible risk to ecological receptors; 2) future hypothetical resident exposure to COCs in soil and groundwater poses an unacceptable risk; 3) SWMU MP-14 is unlikely to be developed for residential use; and 4) groundwater at the site is not used as a potable water source because Fort Belvoir obtains their potable supply from Fairfax Water. Because SWMU MP-14 poses negligible risk to ecological and human receptors under current land use and its anticipated future land use, industrial operations, is unlikely to pose an unacceptable risk, the U.S. Army recommends no further corrective action. To address the potential for hypothetical future resident exposure to COCs in soil (arsenic and PAHs) and groundwater (cobalt), the U.S. Army recommends that a notation be added by the installation to Fort Belvoir's Master Plan and GIS files to ensure that SWMU MP-14 land use is consistent with the findings of the RFI. Master plan and GIS file notations for SWMU MP-14 will not require the preparation a LUCIP.

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Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
804-698-4000

September 18, 2020

Mrs. Wilamena Harback
Chief Environmental Division
United States Army Garrison, Fort Belvoir
9820 Flagler Rd., Suite 213
Fort Belvoir, VA 22060

Re: Review of *Draft Final RFI for SWMU MP-14: Building 2476 Hazardous Storage Area*
Fort Belvoir, VA

Dear Mrs. Harback,

Thank you for providing the Virginia Department of Environmental Quality (VDEQ), Office of Remediation Programs (ORP), the opportunity to review the aforementioned report dated July 2020. VDEQ concurs that no further action or investigation is necessary at SWMU MP-14 as long as the current land use designation remains in place. Should that designation change, then further action would be necessary.

Should you have any questions or comments, please contact me at (804) 698-4126 or by email at cortney.marquette@deq.virginia.gov.

Sincerely,

Cortney Marquette
Remedial Program Manager
Office of Remediation Programs

APPENDIX B:
DETAILED HISTORICAL PCB USE ANALYSIS AND RUBRIC

The following document by Tidewater Inc. was revised and updated by SES Construction and Fuel Services, LLC (SCF) in January 2018 and March 2020. All revisions made by SFC LLC are noted in red font or with a strikeout. This appendix was further updated by Aerostar in February 2025 to include any newly available information on the historic sites, update assessment based on new information and consider TMDL details that were not previously captured. All revisions made by Aerostar are noted in blue.

The purpose of the historic use analysis is to evaluate each site to determine the location of outfalls discharging to surface waters that would have the potential to discharge PCBs in stormwater during a rain event and recommend outfall sampling points. As a part of the 2017/2018 update all site data was reviewed, and new sites were evaluated for their potential to discharge PCBs to surface waters. As a part of the 2025 update, a site was added along with additional screening questions to determine PCB TMDL applicability across the sites.

For PCBs to discharge in stormwater they first must be present at the site and exposed to precipitation. If it can be concluded, based on multiple lines of evidence, that PCBs are no longer present at a particular site or exposed to precipitation, it is reasonable to conclude that PCBs would not be discharged in stormwater from that site. Additionally, if PCBs are still thought to be present at a site, even in very low concentrations, for PCBs to be discharged in stormwater from the site, drainage area analysis of the site would need to show a likely pathway for the stormwater discharging to surface waters via a system outfall.

The historic use and sampling point analysis proceeded as follows:

1. A rubric of parameter questions was established to use to evaluate each site.
2. Historical documents from each site were reviewed to evaluate each site using the list of established parameters.
3. A map showing the area of interest for the site, site elevations and the nearest stormwater outfalls and features, was created for each site.
4. Drainage to a specific water body was categorized for each site and determined to direct or indirect drainage and if drainage occurs through the MS4 or ISW stormwater system.
5. The location of the site in reference to the defined PCB TMDL 'direct drainage area' was determined.
6. Conclusions were drawn regarding each site and presented using a weight of evidence approach. At each site for which it is appropriate, sampling locations are suggested.

Drainage

A summary list was provided by DPW-ENRD that contains specification of site drainage. The list was confirmed and updated with new site data.

Watershed Delineation Project and Problem Site Descriptions including Maps and Photographs, Volumes I-III" dated 1 March 1999 prepared for Fort Belvoir (Performance Group, Inc. 1999) were used. Mr. Chris Landgraf of Performance Group, Inc. performed the work to verify drainage descriptions and receiving water bodies. In addition, the current stormwater GIS layers ~~and map book~~ were used to evaluate stormwater conveyance structures for each site.

The table below provides the DPW-ENRD description, the water body of interest to the PCB TMDL, and classification of the site as direct or indirect drainage. Direct drainage sites drain to a swale or tributary and then directly to named PCB TMDL receiving waters. Indirect drainage sites drain first to a swale or tributary, then to another swale or tributary or unnamed water body before finally draining to named PCB TMDL receiving waters. PCB TMDL receiving waters related to Fort Belvoir permitted outfalls include Gunston Cove, Accotink Creek, and Dogue Creek.

Site	Description	Drainage Description ~~from Fort Belvoir DPW-ENRD~~	Receiving PCB TMDL Water Body	Within TMDL Direct Drainage Area?	Direct or Indirect Drainage
A23	Former Coal Storage Area	The closest receiving stream is an unnamed tributary (intermittent at the area closest to the site) to Gunston Cove.	Gunston Cove	Yes	Direct
A24	Former DPDO Storage Area	The closest receiving stream is an unnamed tributary (intermittent at the area closest to the site) to Accotink Bay.	Accotink Bay	Yes	Direct
A24a	Impacted Ephemeral Channel west of DPDO Yard	In stream hotspot located within an ephemeral channel flowing east to west into the Accotink Bay.	Accotink Bay	Yes	Direct
B03	Former BLDG632 Hazardous Waste Storage Area	This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove.	Gunston Cove	Yes	Indirect
B04	Former BLDG633 Hazardous Waste Storage Area	This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove.	Gunston Cove	Yes	Indirect
B09	Former Building 1430 Transformer Storage Area	This location does not have any direct drainage swales, but the closest stream is an unnamed tributary to Accotink Creek.	Accotink Creek	Yes	Indirect
B10	Building 190 Former Indoor Storage Room	This location does not have a direct stormwater discharge, but the curb inlets and sheet flow would eventually discharge to an unnamed tributary that flows into Accotink Bay.	Accotink Bay	Yes	Indirect
L03	Former Asphalt Storage Pad near Building 2596	This area would drain to stormwater swales, to an unnamed tributary, to the wetlands in Jackson Miles Abbott Wetland Refuge, to Mulligan Pond, to Dogue Creek, to the Potomac River.	Dogue Creek	No	Indirect
L04	Hangar 3126 Former outdoor concrete pad transformer storage area	This area would drain to drainage swales to an unnamed tributary to the Accotink Creek and to Accotink Bay.	Accotink Creek	No	Indirect
L47	Former Concrete Pad Transformer Storage Area	This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove.	Gunston Cove	Yes	Indirect
N13	Building 1490 Hazardous Material Storage Area	This area would drain to drainage swales to unnamed tributary to wetlands to Accotink Creek.	Accotink Creek	Yes	Indirect
~~Building 1495~~ MP11	Building 1495 Outdoor Transformer Storage Area	This area would drain to drainage swales to unnamed tributary to wetlands to Accotink Creek.	Accotink Creek	Yes	Indirect
MP12	249th Motorpool Area Stream Contamination	This area is located within a stream; the stream is an unnamed tributary to Accotink Bay	Accotink Bay	Yes	Direct
MP13	Theote Road/Warren Road Wash Yard Area	This area drainage via a culvert to an unnamed tributary to Gunston Cove	Gunston Cove	Yes	Direct
MP14	Building 2476 Former Hazmat Storage Locker	This area has no stormwater infrastructure; it would drain via sheet flow across an unpaved road to wetlands before going through a culvert and discharging to Accotink Creek	Accotink Creek	No	Indirect

Rubric Parameters

The rubric parameter questions were established to provide important details and help support developing lines of evidence regarding the status of each site. The same rubric, with some additional questions, and methodology was used to assess all sites for the 2017/2018 update to the PCB TMDL Action Plan. Additional questions were added during the 2025 update to the Action Plan based on more detailed mapping of the defined direct drainage area, MS4 Service Area based on 2020 Census urban Area, and changes to drainage areas permitted under the different Fort Belvoir VPDES permits.

The parameters used ~~are~~ were as follows:

- Was the site a formal storage area?
- Were transformers noted as being present at some point or established as the source of PCBs at the site?
- Were PCBs confirmed present at the site and how?
- Were PCBs stored indoors or outdoors?
- Was there secondary containment present at storage sites?
- Was there observable staining likely or confirmed from PCB fluids?
- Was there a reportable PCB release and when?
- Has the site undergone remediation?
- Has the site undergone ~~demolition~~ demolition/renovation?
- Is the site now wooded?
- Is the site still in use,
- Is it ~~but~~ now serving a different purpose?
- Was PCB data collected at the site?
- Has the site been recommended for closure or no further action (NFA) in past evaluations?
- Has the site been closed through a regulatory agency and when?
- Has the final site determination been documented in a Statement of Basis?
- Does runoff from the site reach impaired water directly or indirectly?
- Is the site located within the 'direct drainage watershed segments to the Tidal Potomac' defined in the 2007 TMDL of PCBs for the Tidal Portions of the Potomac?
- Does the site discharge through either the MS4 or ISW permitted stormwater system?

For each site evaluated the following is presented:

Description
A short narrative description of site characteristics and previous remediation efforts, site changes, and structural practices installed at the site.

Completed Rubric
A table showing the completed rubric for each site is shown.

Site Conclusions
For each site, a conclusion, is made regarding the requirements under the PCB TMDL Action Plan. The conclusion is based on the historical site assessment and site visits and includes the weight of evidence available in support of a conclusion for no further action (NFA).

Maps
Maps were created showing the location of each site, site elevations and the nearest stormwater outfalls and features. These maps are presented in Appendix A. If the evaluation of the site resulted in a determination that characterization or monitoring is a required a map showing suggested sampling locations is presented below the rubric.

A23: Although site A23 is the site of a PCB release, it has undergone extensive remediation. Confirmation soil samples indicated that any remaining PCB levels were below regulatory limits (Sample Data provided in Appendix A). As such, the site as a SWMU has been recommended for no further action. Regarding the PCB TMDL, in the past PCBs were spilled and exposed to precipitation. However, the extensive remediation that took place at the site removed the bulk of exposed PCBs and created a barrier for PCB exposure by adding clean fill to areas that were excavated and installing a concrete cap. It is unlikely that any residual remaining PCBs present at the site would discharge to surface waters. PCBs are carried primarily by sediment and the concrete cap and partially wooded nature of the site would reduce potential for any ~~potentially~~ contaminated sediments to travel.

Site	**A23**
Description	Former Coal Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	Yes, ~~reported~~ 1979
Has the site undergone remediation?	Yes
Has the site undergone ~~demolition~~ demolition/renovation?	N/A
Is the site now wooded?	Partially
Is the site still in use~~, but now serving a different purpose~~?	~~Yes~~ No
Is it being used for the same or different purpose?	Different
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, NFA
Has the site been closed through a regulatory agency and when?	Yes, 2014
Has the final site determination been documented in a Statement of Basis?	~~No~~ Pending, 2025
Does runoff from the site reach impaired water directly or indirectly?	Direct
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	Yes (ISW 2017-2025 and MS4 2025 forward)

Weight of Evidence:

- Extensive remediation,
- Sampling confirming PCBs are below regulatory limits,
- Has a concrete cap and is partially wooded minimizing PCB transport, and
- Received regulatory concurrence for NFA as a SWMU with land use controls to include inspection of the concrete cap.

Conclusion:

No further action under this TMDL Action Plan.

A24: Although site A24 is the site of a PCB release, it has undergone extensive remediation. Confirmation soil samples indicated that any remaining PCB levels were below regulatory limits (Sample Data provided in Appendix A). As such, the site as a SWMU was ~~has been~~ recommended for no further action which the EPA approved in 2014 after the evaluation of the installed soil cap. During the investigation of the cap some low-level detections of Aroclor 1260 were found in a drainage ditch near A24, which is being investigated under a separate action as site A24a, described below. Regarding the PCB TMDL, in the past PCBs were spilled and exposed to precipitation. However, the extensive remediation that took place at the site removed the bulk of the exposed PCBs and protected against future exposure by placing clean fill in areas that were excavated. It is unlikely that any residual remaining PCBs present at the site would discharge to surface waters. PCBs are carried primarily by sediment and the thickly wooded nature of the site would reduce potential for any contaminated sediments to travel.

Site	A24
Description	Former DPDO Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	Yes, 1979
Has the site undergone remediation?	Yes
Has the site undergone demolition/renovation?	N/A
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, NFA
Has the site been closed through a regulatory agency and when?	Yes, 2014
Has the final site determination been documented in a Statement of Basis?	~~No~~ Pending, 2025
Does runoff from the site reach impaired water directly or indirectly?	Direct
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	No

Weight of Evidence:

- Extensive remediation,
- Sampling confirming PCBs are below regulatory limits,
- Fully wooded, and
- Clean fill and soil cap installed minimizing PCB transport, ~~and~~
- Received regulatory concurrence for NFA as a SWMU with land use controls to include inspection of the concrete cap.

Conclusion:

No further action under this TMDL Action Plan.

A24a: PCB impacted soils/sediment were found in the ephemeral channel during a 2015 study which recommended further evaluation of drainage features located outside of the A24 delineated area. Per the conditions for closure of site A24; Site A24a was opened following these low-level PCB detections. In 2018 samples were collected along the 3,000-foot downgradient channel. The samples identified a singular location in the channel where soil did not exceed the TSCA threshold but did exceed EPA's Ecological Screening Level (ESL). To address this ecological risk, a hot spot removal action was recommended for the area. In 2022 a corrective measures study was conducted to obtain data needed to delineate the horizontal and vertical extent of PCB contamination for hotspot soil removal within the channel. During this effort at least one location was determined to contain PCBs above the 50-ppm threshold triggering TSCA PCB regulatory applicability. In a letter from 2023, US EPA assumes oversight of the remediation efforts at A24a due to the soils meeting the definition of PCB remediation waste under TSCA, where VADEQ does not have regulatory authority. In 2024, Fort Belvoir continued coordination with US EPA Region III to develop a site characterization plan which included proposed sampling. Sampling occurred in November 2024 and as of February 2025, a report of findings was in the process of being drafted.

Site	A24a
Description	Impacted Ephemeral Channel west of DPDO Storage Area
Was the site a formal storage area?	No
Were transformers present within the storage area?	No
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	Yes, 1979
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	N/A
Is the site now wooded?	Yes
Is the site still in use?	N/A
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	No, Undergoing Investigations under TSCA
Has the site been closed through a regulatory agency and when?	No
Has the final site determination been documented in a Statement of Basis?	No
Does runoff from the site reach impaired water directly or indirectly?	Direct
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	No

Weight of Evidence:

- Site is undergoing characterization under TSCA in coordination with US EPA Region III
- Will undergo hotspot removal and remediation
- Site is located instream and therefore does not discharge through the permitted MS4

Conclusion:

No further action under this TMDL Action Plan.

B03: Site B03 was a site used for PCB storage. No PCB releases were reported to have occurred at B03. The storage building has been demolished and the area remediated. The site has achieved regulatory closure, and the closure report documents the absence of PCBs at the site. This site was included in the 2014 Statement of Basis for approval of final closure with no land use restrictions.

Site	B03
Description	Former BLDG632 Hazardous Waste Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Unknown
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	Unknown
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	Yes
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	~~No~~ Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 1997
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	No

Weight of Evidence:

- PCB items kept indoors not exposed to precipitation,
- Storage building demolished and site remediated,
- Sampling confirms absence of PCBs,
- Regulatory closure achieved with no land use restrictions, and
- Has an indirect drainage path and does not discharge through the permitted MS4.

Conclusion:

No further action under this TMDL Action Plan.

B04: Site B04 was a site used for PCB storage. No PCB releases were reported to have occurred at B034 The storage building has been demolished and the area remediated. The site has achieved regulatory closure, and the closure report documents the absence of PCBs at the site. This site was included in the 2014 Statement of Basis for approval of final closure with no land use restrictions.

Site	B04
Description	Former BLDG633 Hazardous Waste Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Unknown
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	Unknown
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	Yes
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 1997
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	No

Weight of Evidence:

- PCB items kept indoors not exposed to precipitation,
- Storage building demolished and site remediated,
- Sampling confirms absence of PCBs,
- Regulatory closure achieved with no land use restrictions, and
- Has an indirect drainage path and does not discharge through the permitted MS4.

Conclusion:

No further action under this TMDL Action Plan.

B09: Site B09 was a transformer storage area formerly located at Building 1430. While transformers were stored indoors and outdoors at this site, secondary containment was present. Building 1430 no longer exists and the area where the building once stood is now used as a storage area for trailers and large generators. Soil samples and wipe samples confirmed the absence of any PCBs at the site. This site was administratively closed in 2012 and included in the 2014 Statement of Basis for approval of final closure with no land use restrictions.

Site	B09
Description	Former Building 1430 Transformer Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Both
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	Different
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 2012
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	No

Weight of Evidence:

- PCB items kept indoors not exposed to precipitation,
- Storage building demolished and site remediated,
- Sampling confirms absence of PCBs,
- Regulatory closure achieved with no land use restrictions, and
- Has an indirect drainage path and does not discharge through the permitted MS4.

Conclusion:

No further action under this TMDL Action Plan.

B10: B10 was an indoor storage area that was noted to have stored PCB containing equipment. Specifics of what was stored there and for how long are unknown. There were never any reported releases at this site, nor was staining suggesting leaks ever reported. The storage room also had secondary containment. B10 as a SWMU achieved regulatory closure in 1999. This site was included in the 2014 Statement of Basis for approval of final closure with no land use restrictions.

Site	B10
Description	Building 190 Former Indoor Storage Room
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Unknown
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	No
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	Different
Was PCB soil data collected at the site?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 1999
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	Yes

Weight of Evidence:

- ~~Any~~ PCB containing equipment was stored indoors and not exposed to precipitation,
- Secondary containment was present, ~~and~~
- R~~e~~gulatory closure achieved ~~for SWMU site.~~ with no land use restrictions, and
- Has an indirect drainage path and does not discharge through the permitted MS4.

Conclusion:

No further action under this TMDL Action Plan.

L03: Site L03 was never an official storage area. Transformers were reported being located at the site and fluid staining the asphalt was also noted. ~~However, no known~~ Sampling occurred at the site in 2013 and there is no documentation of PCB contamination being present. Additionally, the area that would have once been impacted has been ~~the asphalt pad has been demolished and~~ redeveloped as part of a parking lot. Given the lack of evidence of the site being an environmental concern, the site was recommended for NFA as a SWMU. The site has achieved regulatory closure in 2013, and closure report documents the absence of PCBs at the site. Additionally, this site is located within the boundaries of HECSA, land which was transferred to the Army Corp of Engineers in 1981 and does not receive coverage under Fort Belvoir permits.

Site	**L03**
Description	Former Asphalt Storage Pad near Building 2596
Was the site a formal storage area?	No
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	No
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 2013
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	No
Does the site discharge through either the MS4 or ISW permitted stormwater system?	No

Weight of Evidence:

- PCB contamination never confirmed at the site,
- Concrete pad and old building have been demolished and the area entirely redeveloped,
- Regulatory closure achieved with no land use restrictions,
- Has an indirect drainage path and does not discharge through the permitted MS4, and
- This site is not regulated under Fort Belvoir's permit due to not being classified as urban and not being owned/operated by the permittee.

Conclusion:

No further action under this TMDL Action Plan.

L04: Site L04 was a concrete pad that housed actively used transformers. While reports indicated leaking fluid was visible, soil samples collected later confirmed the absence of PCBs at the site. There is no longer evidence of the transformer area, and the site was demolished and has been redeveloped as a picnic and barbeque area. L04 achieved regulatory closure in 2012 and was included in the 2014 Statement of Basis.

Site	L04
Description	Hangar 3126 Former outdoor concrete pad transformer storage area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	Different
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 2012
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	No
Does the site discharge through either the MS4 or ISW permitted stormwater system?	Yes (ISW)

Weight of Evidence:

- Transformer area demolished and redeveloped,
- Sampling confirmed absence of PCBs,
- Regulatory closure was achieved with no land use restrictions, and
- Indirect drainage path

Conclusion:

No further action under this TMDL Action Plan.

L47: Site L47 was a concrete pad that was used to store transformers until they could be tested for PCBs and then disposed of properly or moved to another storage area. The pad was located outside, and transformers were exposed to precipitation. However, there were no reportable releases and even though stains on the pad were reported it is unknown whether the staining liquid contained PCBs or not since the transformers at the site were being held for PCB testing. The pad has since been removed and the site is now wooded with thick brush. Sampling occurred at the site in January of 2013 and determined that no PCBs were detected in soils surrounding the pad location. PCBs are carried primarily by sediment and the thickly wooded nature of the site would reduce potential for any ~~potentially~~ contaminated sediments to travel. Additionally, there are no stormwater drainage features nearby suggesting potential residual PCB contamination would not have a likely pathway to drain to surface waters. The site achieved regulatory closure and closure report documents the absence of PCBs at the site.

Site	**L47**
Description	Former Concrete Pad Transformer Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	Unknown
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 2013
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	No

Weight of Evidence:

- No reportable releases,
- Sampling confirmed absence of PCBs,
- Transformer pad area demolished,
- Fully wooded,
- Regulatory closure achieved with no land use restrictions, and
- Has an indirect drainage path and does not discharge through the permitted MS4.

Conclusion:

No further action under this TMDL Action Plan.

N13: Site N13 was an indoor storage area for hazardous materials including PCB containing materials. It was ~~is~~ permitted and managed as a one-year hazardous waste storage area under a RCRA Part B Permit until 2019. The site had ~~s~~ not accepted any waste, hazardous or otherwise, since 2011. In March of 2018 VADEQ was formally notified that closure of the facility hazardous waste storage facility has commenced with an evaluation of the integrity of the foundation by a Professional Engineer (PE). The facility was decontaminated on 9 and 10 April 2019 as per the Closure Plan contained in the 2015 RCRA Part B Permit and modified/approved by VADEQ on 5 April 2019. The facility was then demolished in May 2020.

Site	N13
Description	Building 1490 Hazardous Material Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Unknown
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	~~No~~ Yes - Decontamination
Has the site undergone demolition/renovation?	~~No~~ Yes
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	~~Same~~ N/A
Was PCB soil data collected at the site?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, NFA
Has the site been closed through a regulatory agency and when?	Yes, 2012 and 2019
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	Yes, (ISW 2017-2025 and MS4 2025 forward)

Weight of Evidence:

- No reportable releases,
- PCB materials stored indoors and not exposed to precipitation,
- Secondary containment is in place,
- Regulatory closure achieved ~~due to permit coverage,~~ with no land use controls after decontamination and confirmation samples. and
- Indirect drainage path.

Conclusion:

No further action under this TMDL Action Plan.

~~**Building 1495**~~ **MP11:** The Building 1495 site consists of the northeast corner of the parking lot for building 1495. PCB containing transformers were stored in the area and fluid was reported as leaking from the transformers during 2012. ~~Currently s~~Stains were visible on the asphalt at the site and containment materials had ~~have~~ been placed around the affected areas. Portions of the site have been remediated through soil removal at impacted areas during a utility project. Additionally building 1495 was fully renovated in 2015 to include the parking area, which was asphalted, and now acts as a cap over portions of the contaminated site. ~~The site has not yet been remediated.~~ In 2020 the site underwent a RCRA facility investigation to determine the full extent of contamination from the leaking transformers. The investigation concluded that there was negligible risk to ecological and human receptors from PCBs released at SWMU MP-11 and recommended NFA for the site which was approved by VADEQ in June 2020. ~~has not yet been determined and~~ ~~Additionally,~~ Although the site is considered closed under RCRA, it should be noted that sampling methodologies used are different than those procedures outlined in VADEQ's TMDL Guidance Memo No. 14-2004, which are utilized in this Action Plan. Since PCBs are currently being detected in stormwater samples collected ~~present~~ at the site and there are direct stormwater drainage features onsite, there is a likely pathway to impaired waters therefore, this site should continue monitoring under this PCB Action Plan. ~~requires additional investigation.~~

Site	**MP11**
Description	Building 1495 Outdoor Transformer Storage Area
Was the site a formal storage area?	~~No~~ Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	Yes, 2012
Has the site undergone remediation?	Yes
Has the site undergone demolition/renovation?	~~Yes~~ N/A
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	~~Same~~ Different
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	~~No~~ Yes, NFA
Has the site been closed through a regulatory agency and when?	~~No~~ Yes, 2020
Has the final site determination been documented in a Statement of Basis?	~~No~~ Pending, 2025
Does runoff from the site reach impaired water directly or indirectly?	~~Indirect~~ Direct
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	Yes, ISW

Weight of Evidence:

- Transformers have been removed, and multiple rounds of soil removal have occurred
- Portions of the area have been paved over and are now only used for solid waste and recycling dumpsters
- RCRA investigation concluded that there was minimal risk to human health and the environment, but stormwater samples continue to detect total PCBs at levels above water quality criteria

Conclusion:

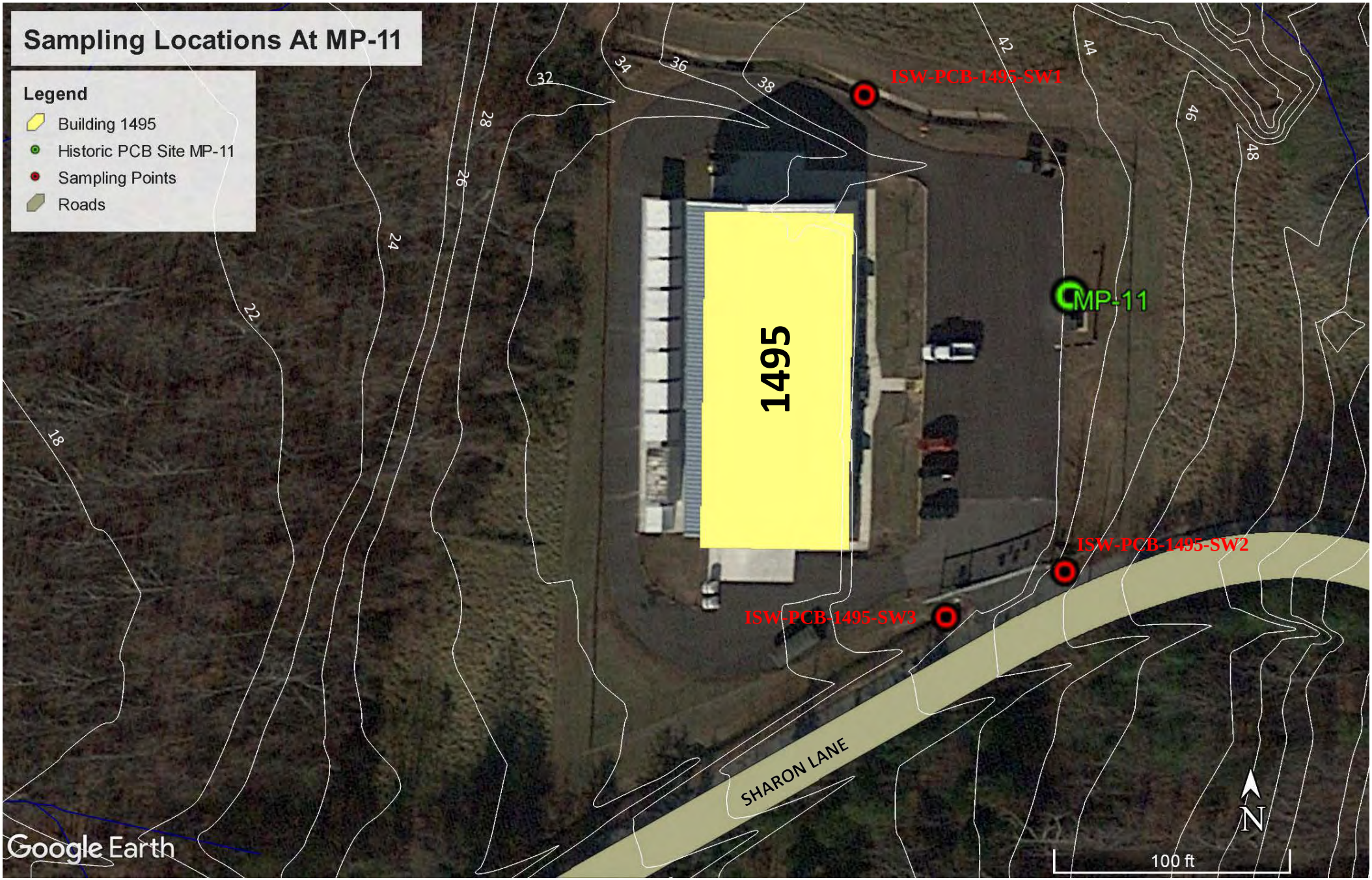
Characterization has been completed, and monitoring should continue at ~~until~~ MP11 ~~achieves regulatory closure or~~ until sampling determines that Water Quality Criteria has been met for two consecutive events.

~~Recommended~~ Sampling ~~Locations~~:

Three stormwater sampling locations were ~~are~~ recommended for monitoring of stormwater discharges at MP11 in the 2013 PCB TMDL Plan. t~~he Building 1495 site~~. The first location (#1) is north of the affected asphalt area at the ~~beginning of the~~ concrete channel that runs along the northern border of the property. Location #1, referred to as ISW-PCB-1495-SW1, is located outside of the fenced area. The second location (#2), referred to as ISW-PCB-1495-SW2, is south of the affected asphalt area just before the entrance to the culvert running under the access driveway to the parking lot. A backup sampling location at the exit of the culvert ~~was also~~ designated ~~for~~ location #3~~2~~, ISW-PCB-1495-referred to as SW3. since the culvert entrance is located behind the access fence and may result~~s~~ in access problem. The exit of the culvert is outside of the fenced area. The ~~recommended~~ sampling locations are shown on the ~~aerial view of the site below~~ map below.

The site was originally sampled twice a year to characterize the stormwater leaving the site as well show any seasonal variation in the results. The characterization including seasonal variation was completed in 2019 after approval of the 2018 PCB TMDL Action Plan. The samples collected in 2019 confirmed expectations and aligned with US EPA guidance which stated, "*As PCBs bio-accumulate over time, annual variations may be considered more important than seasonal variations, particularly if a fish tissue target is used*" (U.S. EPA, 2011). Therefore, the sampling plan was revised to require that MP11 be sampled at least once annually during critical conditions when heavier more intense rain is expected to displace the most sediment.

Throughout the sampling history at MP11 under the PCB TMDL Action Plan location ISW-PCB-1495-SW2 has not been used, although it has been kept in as an alternate in the sampling plan. At this point in time any data collected at this location would not provide a good basis for comparison and therefore, moving forward it will be removed from the sampling plan.


Sampling Locations At MP-11
Legend
Building 1495
Historic PCB Site MP-11
Sampling Points
Roads
ISW-PCB-1495-SW1
MP-11
1495
ISW-PCB-1495-SW2
ISW-PCB-1495-SW3
SHARON LANE
N
100 ft
Google Earth

MP12: Site MP12 was associated with ~~is comprised of~~ seven (7) ~~six (6)~~ abandoned barrels which found ~~are located in and~~ along the bank of the stream receiving discharge from the new 249th Engineering Battalion Motorpool. The drums were discovered during a wetland stream assessment a~~n~~d were noted to be ~~they are.~~ corroded, unlabeled, and randomly distributed in the stream channel. The source or former contents of the drums is unknown as the dumping was not authorized. Preliminary surface soil samples were collected near the abandoned drums. Sample results indicated the presence of some low-level PCBs (below 1ppm and EPA residential screening levels) at two of the drum locations. The site is located in stream, does not discharge through the MS4 system, ~~and is downstream from ISW RO 033~~. The site ~~will be~~ received a full RCRA facility investigation in 2018 ~~in order~~ to determine the natural and extent of contamination in soil, surface water, and sediment. The investigation and risk assessment concluded that there was negligible risk to ecological and human receptors and the drums were removed from the stream bed. Based on these results VADEQ concurred that No further action was required on August 24, 2020.

Site	**MP12**
Description	249th Motorpool Area Stream Contamination
Was the site a formal storage area?	No
Were transformers present within the storage area?	No
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	~~No~~ Yes – Drum Removal
Has the site undergone demolition/renovation?	N/A
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	~~No~~ Yes, Closure
Has the site been closed through a regulatory agency and when?	~~No~~ Yes, 2020
Has the final site determination been documented in a Statement of Basis?	~~No~~ Pending, 2025
Does runoff from the site reach impaired water directly or indirectly?	Direct
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	No

Weight of Evidence:

- Site is located instream and therefore does not discharge through the permitted MS4
- Initial sampling at the site showed PCBs below residential levels
- Investigation and risk assessment concluded that there was negligible risk to ecological and human receptors from the release and drums were removed from the stream bed.

Conclusion:

No further Action under this TMDL Action Plan

MP13: PCBs were confirmed at MP13 after Restoration Program conducted an initial site assessment brought upon when stained soils and odor were noted while inspecting an active construction project. Vehicles and equipment from the construction efforts were being washed within the unpaved area between Warren, Theote, and Marrow roads. The site was fully vegetated with the presence of shrubs, the stockpile locations are still noticeable along Warren Road. The area was being used as a laydown area and wash yard. The stockpiles and the rest if the area were sampled and showed the presence of low-level PCBs (less than 0.1 ppm and below residential screening levels) throughout the soils on site. ~~No remediation has occurred at the site and A~~ RCRA facility investigation was ~~will be~~ conducted in 2018 to determine the limits and extent of contamination and found negligible risk to ecological and human receptors. VADEQ concurred with the findings of this investigation and approved a no further action determination in 2021. This investigation did not include sampling for PCBs as it was eliminated as a contaminant of concern under the RCRA Program. After the investigation, in March 2019, to address other contaminates in the surface soil MP13, the Directorate of Public Works (DPW) excavated an approximately 149,000 square foot area at the site to a depth of 0.5 feet bgs and removed all stockpiles and construction debris. Post excavation confirmation sampling was completed which included eight (8) within the footprint of the excavation area with the highest PCB detection of 0.034 mg/kg. Additionally, six (6) soil samples were collected from the stockpiled (bermed) soil prior to disposal, which had a similar detection with a high of 0.03 mg/kg. Although the site is considered closed under RCRA, it should be noted that sampling methodologies used are different than those procedures outlined in VADEQ's TMDL Guidance Memo No. 14-2004, which are utilized in this Action Plan. In 2022, a separate investigation was completed of a portion of the site which utilized the same laboratory methods used in this TMDL Action Plan. These results showed PCBs were present in soils at much higher levels with the lowest detection being 0.2 mg/kg and highest being 4.4 mg/kg. Since PCBs are currently being detected in stormwater samples collected above the water quality criteria. There is also a direct stormwater drainage feature onsite, which is a likely pathway to impaired waters therefore, this site should continue monitoring under this PCB Action Plan.

Site	**MP13**
Description	Theote Road/Warren Road Wash Yard Area
Was the site a formal storage area?	No
Were transformers present within the storage area?	No
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	Yes, 2015
Has the site undergone remediation?	~~No~~ Yes – Soil Removal
Has the site undergone demolition/renovation?	N/A
Is the site now wooded?	No
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	~~No~~ Yes, NFA
Has the site been closed through a regulatory agency and when?	~~No~~ Yes, 2021
Has the final site determination been documented in a Statement of Basis?	~~No~~ Pending, 2025
Does runoff from the site reach impaired water directly or indirectly?	Direct
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	Yes
Does the site discharge through either the MS4 or ISW permitted stormwater system?	Yes, MS4

Weight of Evidence:

- Soil removal was completed in 2019 which removed the top 6" of soil across the site.
- RCRA investigation concluded that there was minimal risk to human health and the environment, but stormwater samples continue to detect total PCBs at levels above water quality criteria.
- Sampling in 2022 done using the same methodology as in the TMDL Plan revealed that PCBs are still being detected in soils above the 1 ppm screening level.

Conclusion:

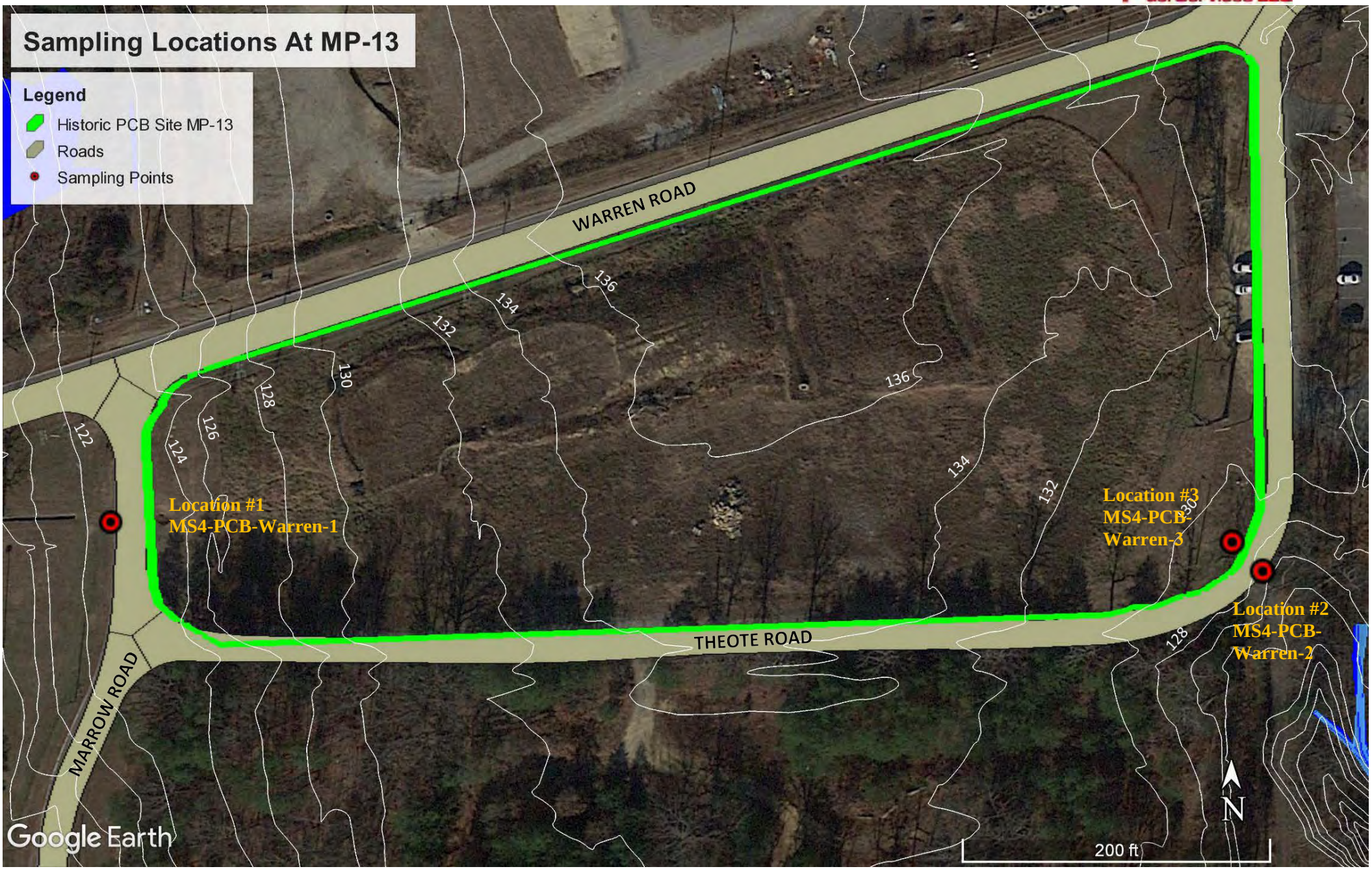
Characterization has been completed, and monitoring should continue at ~~until~~ MP13 ~~achieves regulatory closure or~~ until sampling determines that Water Quality Criteria has been met for two consecutive events.

~~Recommended~~ Sampling ~~Locations~~:

Two stormwater sampling locations were recommended for monitoring of stormwater discharges at the Warren Road/Theote road site in the 2018 PCB TMDL Action Plan. The first location #1, referred to as MS4-PCB-Warren-1, is west of the affected wash yard area at the concrete channel that runs along Warren Road, it is at the culvert outlet crossing Morrow Road. The second location (#2), referred to as MS4-PCB-Warren-3, is east of the affected wash yard area ~~just before the entrance to the~~ at the culvert outlet running under Theote Road and discharging to the neighboring stream. A backup sampling location at the entrance of the culvert designated location #3, referred to as MS4-PCB-Warren-2, since the culvert outlet is located within a large briar patch and may result in access problems. Location #3 is slightly crushed and may allow water from MP13 to puddle up which may show higher than expected PCB values due to sediment accumulation. The recommended sampling locations are shown on the map below.

Initial sampling at MP13 occurred in 2017 to characterize stormwater runoff while RCRA investigations were being planned. In 2019, the sampling plan was developed and required that MP13 be sampled at two locations (MS4-PCB-Warren-1 and MS4-PCB-Warren-2) at least once annually during critical conditions when heavier more intense rain is expected to displace the most sediment.

Following the excavating of the site and removal of soils, the site was regraded, seeded, and stabilized in 2020. After this regrading, the drainage of runoff at the site was altered and MS4-PCB-Warren-1 began receiving little to no flows during rain events, with the last sample collected in 2020. At this point in time, the culvert at the east side of MP13, where MS4-PCB-Warren-2 is the inlet and MS4-PCB-Warren-3 is the outlet, conveys the majority of runoff. Throughout the sampling history at MP13 under the PCB TMDL Action Plan location MS4-PCB-Warren-3 has not been used, although it has been kept in as an alternate in the sampling plan. Although data from samples collected MS4-PCB-Warren-3 would not provide a good basis for comparison to the 2017 baseline it can offer valuable information when compared to MS4-PCB-Warren-2 (i.e. identify clogging in piping or historic sediment accumulation) and will therefore be kept in the sampling plan.


Sampling Locations At MP-13
Legend
Historic PCB Site MP-13
Roads
Sampling Points
WARREN ROAD
THEOTE ROAD
MARROW ROAD
Location #1
MS4-PCB-Warren-1
Location #3
MS4-PCB-
Warren-3
Location #2
MS4-PCB-
Warren-2
122
124
126
128
130
132
134
136
Google Earth
N
200 ft

MP14: Site MP14 ~~is comprised of~~ was associated with the location of a hazardous material storage locker located in the SW corner of the parking lot for Building 2476 which was used as a Vehicle Maintenance Shop/Motorpool. The locker had ~~been stored~~ sat on top of grass and soil without secondary containment. When the locker was removed from the area in preparation for future projects in the area, personnel found a hole in the bottom of the locker and saw discoloration in the soil where the locker was stored. The ~~DERP~~ Restoration Program conducted surface soil sampling of the stained soil that was under the storage locker and on either side of the storage locker which showed low level detections of PCB (below 1 ppm and residential screening levels) at one of the sample locations. There are no direct drainage features, or stormwater conveyance systems ~~structures~~ located near the site and the surroundings are heavily wooded. ~~The DERP will be conducting a~~ A RCRA Facility Investigation (RFI) at site MP14 was completed in 2018 to ~~assess and~~ determine the nature and extent of the contamination at this site. This investigation included collection of PCB samples at six (6) locations around where the locker previously stood. The investigation and risk assessment concluded that there was negligible risk to ecological and human receptors. Additionally, the site will be completely redeveloped and soils from this area will be removed during site preparation. Based on these results VADEQ concurred that No further action was required on September 18, 2020.

Site	M14
Description	Building 2476 Former Hazmat Storage Locker
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	No
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	~~Yes~~ No
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	~~Yes~~ Planned
Is the site now wooded?	No
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	~~No~~ Yes, NFA
Has the site been closed through a regulatory agency and when?	~~No~~ Yes, 2020
Has the final site determination been documented in a Statement of Basis?	~~No~~ Pending, 2025
Does runoff from the site reach impaired water directly or indirectly?	Indirect
Is the site located within the 'direct drainage watershed segments to the Tidal Potomac?	No
Does the site discharge through either the MS4 or ISW permitted stormwater system?	No

Weight of Evidence:

- No stormwater structures in the area and therefore does not discharge through the permitted MS4
- Sampling at the site showed PCBs below residential levels
- Indirect drainage path and located outside of the direct drainage area for the PCB TMDL.

Conclusion:

No further action under this TMDL Action Plan.

Site	A23	A24	A24a[1]	B03	B04	B09	B10	L03	L04	L47	N13	MP11	MP12[1]	MP13	MP14
Description	**Former Coal Storage Area**	**Former DPDO Storage Area**	**Impacted Ephemeral Channel**	**Former BLDG632 Hazardous Waste Storage Area**	**Former BLDG633 Hazardous Waste Storage Area**	**Former Building 1430 Transformer Storage Area**	**Building 190 Former Indoor Storage Room**	**Former Asphalt Storage Pad near Building 2596**	**Hangar 3126 Former outdoor concrete pad transformer storage area**	**Former Concrete Pad Transformer Storage Area**	**Building 1490 Hazardous Material Storage Area**	**Building 1495 Outdoor Transformer Storage Area**	**249th Motorpool Area Stream Contamination**	**Theote Road/Warren Road Wash Yard Area**	**Building 2476 Former Hazmat Storage Locker**
Was the site a formal storage area?	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes
Were transformers present within the storage area?	Yes	Yes	No	Unknown	Unknown	Yes	Unknown	Yes	Yes	Yes	Unknown	Yes	No	No	No
Were PCBs confirmed to be present at the site?	Yes	Yes	Yes	No	No	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Were PCBs stored indoors or outdoors?	Outdoor	Outdoor	Outdoor	Indoor	Indoor	Both	Indoor	Outdoor	Outdoor	Outdoor	Indoor	Outdoor	Outdoor	Outdoor	Outdoor
Was secondary containment present at storage sites?	No	No	No	Yes	Yes	Yes	Yes	No	No	Unknown	Yes	No	No	No	Yes
Was there observable staining suggesting the presence of PCBs?	Yes	Yes	No	Unknown	Unknown	No	No	Yes	No	No	No	Yes	No	No	Yes
Was there a reportable PCB release and when?	Yes, 1979	Yes, 1979	Yes, 1979	No	No	No	No	No	No	No	No	Yes, 2012	No	Yes, 2015	No
Has the site undergone remediation?	Yes	Yes	No	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Has the site undergone demolition/renovation?	N/A	N/A	N/A	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A	N/A	N/A	Yes
Is the site now wooded?	Partially	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No	No	Yes	No	No
Is the site still in use?	No	No	No	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	No
Is it being used for the same or different purpose?	Different	N/A	N/A	N/A	N/A	Different	Different	N/A	Different	N/A	N/A	Different	N/A	N/A	Same
Was PCB soil data collected at the site?	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, NFA	Yes, NFA	No	Yes, Closure	Yes, Closure	Yes, Closure	Yes, Closure	Yes, Closure	Yes, Closure	Yes, Closure	Yes, NFA	Yes, NFA	Yes, Closure	Yes, NFA	Yes, NFA
Has the site been closed through a regulatory agency and when?	Yes, 2014	Yes, 2014	No	Yes, 1997	Yes, 1997	Yes, 2012	Yes, 1999	Yes, 2013	Yes, 2012	Yes, 2013	Yes, 2012 & 2019	Yes, 2020	Yes, 2020	Yes, 2021	Yes, 2020
Has the final site determination been documented in a Statement of Basis?	Pending[3]	Pending[3]	No	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Pending[3]	Pending[3]	Pending[3]	Pending[3]
Does runoff from the site reach impaired water directly or indirectly?	Direct	Direct	Direct	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Direct	Direct	Indirect
Located Within PCB TMDL Direct Drainage Area?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Discharges Through Either the MS4 or ISW permit regulated stormwater system?	Yes	No	No	No	No	Yes	Yes	No	Yes	No	Yes	Yes, ISW	No	Yes, MS4	No
Total[2]			**1.4**									**2.0**		**1.7**	

Cells shown in Orange are characteristics that have been determined to not effect the overall assessment for the site either through previous investigations or because currently available information

Cells shown in Red are characteristics that were determined to be negative in the assessment of the site and are signs of the potential release of PCBs

Cells shown in Green are characteristics that have been determined to positively impact the site and effectively remediate or mitigate effects from the potential release of PCBs

[1] Note that sites A24a and MP12 are located outside VPDES regulated areas of Fort Belvoir and do not discharge from Fort Belvoir's MS4 or ISW stormwater systems, therefore these sites will not be covered under the PCB TMDL Action Plan. MP12 was still evaluated under the Restoration Program at Fort Belvoir to include any required investigations, mitigation, and/or monitoring required under RCRA. A24a is similarly being investigated under TSCA authority.

[2] Note that the totals shown here are the ratio of negative to positive characteristics that show a possibility to release PCBs into impared waters. A ratio higher than 1 shows that a site has a higher probability to discharge PCBs to impaired water bodies due to historic contamination. Any sites with a ratio larger than 1 and which discharge through either the MS4 or ISW permitted systems, are recommended for characterization and/or monitoring in this 2025 TMDL Action Plan.

[3] Note that statement of basis is being drafted and will be formally finalized around August 2025.

APPENDIX C:
VADEQ COMMENTS ON PREVIOUS ACTION PLANS

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

December 16, 2015

By Email (felix.m.mariani3.civ@mail.mil)

Mr. Felix M. Mariani
Chief, Environmental and Natural Resources Division
U.S. Army – Fort Belvoir
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060

RE: Virginia Pollutant Discharge Elimination System (VPDES) MS4 Registration No. VAR040093
U.S. Army – Fort Belvoir
Local TMDL Action Plan Approval

Ms. Couch:

The following Local TMDL Action Plan (plan) for the above-referenced registration number was submitted in early 2013 to the Virginia Department of Conservation and Recreation in accordance with Section I.B of General VSMP Permit for Discharges of Stormwater from Small MS4s (4VAC50-60-1240), which was in effect at the time of your submittal. This plan is accepted by Virginia Department of Environmental Quality (DEQ) to meet the requirements of Section I.B of the General VPDES Permit for Discharges of Stormwater from Small MS4s, which became effective July 1, 2013 (9VAC25-890-40).

- Final, Virginia Pollutant Discharge Elimination System (VPDES) MS4 Permit, Fort Belvoir PCB TMDL Action Plan at U.S. Army Garrison Fort Belvoir, Virginia, dated March 2013

The above referenced Local TMDL Action Plan is approved and is an enforceable part of the MS4 Program Plan.

Please be advised the informational requirements to be provided in a Local TMDL Action Plan were revised since submittal of your plan. Based upon DEQ's review of your plan, the majority of the information required by Section I.B.2 of the current General VPDES Permit for Discharges of Stormwater from Small MS4s was provided; however, DEQ requests the following comments be addressed in the next revision of the plan:

1. Develop and maintain a list of your legal authorities, such as ordinances, state and other permits, orders, specific contract language, and interjurisdictional agreements applicable to reducing the pollutant identified in each applicable wasteload allocation. (Section I.B.2.a)

2. Revise Table 2 under Section 4.1 entitled "PCB TMDL Action Plan" to reference the current General VPDES Permit for Discharges of Stormwater from Small MS4s.

Please note any future modifications to an approved local TMDL Action Plan shall be made in accordance with the Program Plan Modification Section of the MS4 General Permit (Section II.F).

You may contact Susan Mackert at (703) 583-3853 or susan.mackert@deq.virginia.gov or me at 703-583-3843 or bryant.thomas@deq.virginia.gov should you have any questions or concerns regarding this letter.

Respectfully,

Bryant Thomas
Water Permits and Planning Manager

cc (by electronic mail):
Ms. Pamela Couch, Stormwater Program Manager, U.S. Army – Fort Belvoir (pamela.j.couch2.civ@mail.mil)

//skm

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE
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Andrew R. Wheeler
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4000

Thomas A. Faha
Regional Director

March 7, 2022

By Email: *(calli.j.kaufhold.civ@army.mil)*

Mr. Calli Kaufhold, Environmental Specialist
Directorate of Public Works, Environmental Division
9430 Jackson Loop Suite 109, Building 1442 (Room 203)
Fort Belvoir, VA 22060-5116

Re: Virginia Pollutant Discharge Elimination System (VDPES) MS4 Registration No. VAR040093
Lower Accotink Creek *E. coli* TMDL Action Plan/Tidal Potomac PCB TMDL Action Plan

Dear Mr. Kaufhold:

The Department of Environmental Quality (DEQ) has reviewed the following local TMDL action plans applicable to Fort Belvoir received by the DEQ Northern Regional Office (DEQ-NRO) on April 17, 2020 in accordance with the requirements of Part II.B.1 of the MS4 General Permit dated November 1, 2018:

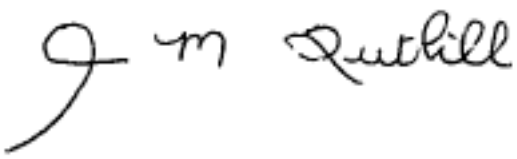
- Accotink Creek (Lower) *E. coli* TMDL Action Plan addressing the TMDL approved by the Environmental Protection Agency (EPA) on December 18, 2008 and the State Water Control Board (SWCB) on April 28, 2009, and
- Tidal Potomac and Anacostia River Watershed PCB TMDL Action Plan addressing the TMDL approved by EPA on October 31, 2007 and the SWCB on April 11, 2008.

DEQ requests that Ft. Belvoir provide the following information:

- *E. coli* TMDL Action Plan – The TMDL action plan must clearly identify the significant sources of the pollutants of concern discharging to the MS4 not covered under a separate VDPES permit.
- PCB TMDL Action Plan – Indicate the effect of Resource Conservation and Recovery Act (RCRA) sites A-23, A-24, MP-11, and MP-13 to the MS4 service area.

Please provide the abovementioned information to DEQ-NRO by **April 11, 2022**. If you have any questions, do not hesitate to contact me by phone at 571-866-6090 or by email at anna.tuthill@deq.virginia.gov.

Sincerely,



Anna M. Tuthill
NRO Regional MS4 Coordinator/Inspector

cc: Margaret Dannemann, NRO Water Quality Planning Supervisor
Ed Stuart, NRO Water Compliance Manger
ECM

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE
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Travis A. Voyles
Acting Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

Thomas A. Faha
Regional Director

May 23, 2022

By Email: *(calli.j.kaufhold.civ@army.mil)*

Mr. Calli Kaufhold, Environmental Specialist
Directorate of Public Works, Environmental Division
9430 Jackson Loop Suite 109, Building 1442 (Room 203)
Fort Belvoir, VA 22060-5116

Re: Virginia Pollutant Discharge Elimination System (VDPES) MS4 Registration No. VAR040093
Lower Accotink Creek *E. coli* TMDL Action Plan/PCB TMDL Action Plan

Dear Mr. Kaufhold:

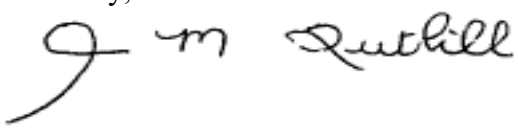
The Department of Environmental Quality (DEQ) has reviewed the following local TMDL action plans applicable to Fort Belvoir received by the DEQ Northern Regional Office (DEQ-NRO) on April 17, 2020 in accordance with the requirements of Part II.B.1 of the MS4 General Permit dated November 1, 2018 and additional information on April 28 and May 18, 2022:

- Accotink Creek (Lower) *E. coli* TMDL Action Plan addressing the TMDL approved by the Environmental Protection Agency (EPA) on December 18, 2008 and the State Water Control Board (SWCB) on April 28, 2009, and
- Tidal Potomac and Anacostia River Watershed PCB TMDL Action Plan addressing the TMDL approved by EPA on October 31, 2007 and the SWCB on April 11, 2008.

The aforementioned TMDL action plans are acceptable. Notify DEQ-NRO MS4 staff within 30 days of finding any previously unidentified significant source of PCBs within the MS4 service area.

If you have any questions, do not hesitate to contact me by phone at 571-866-6090 or by email at anna.tuthill@deq.virginia.gov.

Sincerely,



Anna M. Tuthill
NRO Regional MS4 Coordinator/Inspector

cc: Margaret Dannemann, NRO Water Quality Planning Supervisor
Ed Stuart, NRO Water Compliance Manger
ECM

Commonwealth of Virginia

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Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

Thomas A. Faha
Regional Director

March 17, 2023

By Email: *(Sybille.r.vega.civ@army.mil)*

Ms. Sybille R. Vega
Chief, Environmental Division
9430 Jackson Loop Suite 109, Building 1442 (Room 203)
Fort Belvoir, VA 22060-5116

Re: Virginia Pollutant Discharge Elimination System MS4 Registration No. VAR040093
Ft. Belvoir FY2022 MS4 Annual Report Review

Dear Ms. Vega:

The Department of Environmental Quality, Northern Regional Office (DEQ-NRO) received a response to the January 31, 2023, review of the FY2022 MS4 annual report for Ft. Belvoir on February 28, 2023. On March 6, 2023, DEQ-NRO MS4 staff discussed outstanding issues listed below in the annual report review response with Ft. Belvoir staff:

1. Based on the information provided, it appears that approximately 50% of the publicly owned stormwater management facilities (SMFs) at Ft. Belvoir were inspected in FY2022. Part I.E.5.i (2) of the MS4 annual report states in part that; the permittee shall inspect SMFs owned operated by the permittee no less than once per year." **Indicate why annual inspections of all public SMFs within the MS4 were not conducted in FY2022.**

2. The Ft. Belvoir Directorate of Public Works Environmental (DPW-ENV) team conducts its annual evaluation of high-priority municipal facilities based upon a no-exposure risk. Determination of high-priority municipal facilities in a MS4 is based on the assessment of the high priority for the discharge of pollutants from facilities not covered under a separate VPDES permit (Part I.E.6.c of the MS4 General Permit).

3. The February 28, 2023, response to the report review discusses annual sampling of two outfalls associated with the Warren and Theote Road Laydown area (MP-13) and runoff from the area exceeding the water quality standards for PCBs. Ft. Belvoir discontinued annual monitoring at MP-13 on October 29, 2021. Since PCBs appear be discharged through the MS4, this is considered an illicit discharge; only stormwater (with some exceptions) is allowed to be discharged into the MS4. **DEQ asks that the April 15, 2020, PCB TMDL action plan be revised to include an updated monitoring and mitigation plan. The plan must include the identification of the MS4 outfalls as noted on the MS4 map, and include a plan and schedule focused on**

reduction of PCBs in the stormwater discharge. Any monitoring data presented in a report must indicate the MS4 outfall number and use proper VELAP certified methodology.

Please provide the requested information to DEQ-NRO on or before 90 days of receipt of this correspondence (**June 15, 2023**). If you have any questions, please contact me at anna.tuthill@deq.virginia.gov or 571-866-6090.

Sincerely,

Anna M. Tuthill
NRO Regional MS4 Coordinator/Inspector

cc: Margaret Dannemann, NRO Water Quality Planning Supervisor
Rebecca Johnson, NRO Water Compliance Manger
ECM

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

Richard C. Doucette, CPG
Regional Director

June 26, 2023

By Email: *(ashley.c.mcmahon2.civ@army.mill)*

Ms. Ashley McMahon, Acting Branch Chief
Directorate of Public Works, Environmental Division
9430 Jackson Loop Suite 109, Building 1442 (Room 203)
Fort Belvoir, VA 22060-5116

Re: Virginia Pollutant Discharge Elimination System MS4 Registration No. VAR040093
Ft. Belvoir FY2022 MS4 Annual Report/June 14, 2023, PCB TMDL Action Plan

Dear Ms. McMahon:

The Virginia Department of Environmental Quality, Northern Regional Office (DEQ-NRO) received the Ft. Belvoir FY2022 MS4 Annual Report for the period of July 1, 2021, through June 30, 2022, initially on September 28, 2022, and additional information on February 28, and June 13, 2023. The FY2022 MS4 Annual Report, submitted in accordance with the annual reporting requirements contained in Parts I.D, I.E.1.g, I.E.2.f, I.E.3.e, I.E.4.d, I.E.5.i, I.E.6.q, II.A.13, and II.B.9 of the November 2018 Municipal Separate Storm Sewer System General Permit (MS4 General Permit), is found to be acceptable.

The current PCB TMDL action plan infers that MP 011, 12th Aviation Motor Pool/Washrack, is within the MS4. It is currently part of the Stormwater Industrial permit VA0092771 until the permit is reissued and the respective outfall has been removed from Permit No. VA0092771 . The revised PCB TMDL action plan submitted to DEQ on June 13, 2023, is acceptable. However, a disclaimer must be added to the PCB TMDL action plan to indicate MP 011 is part of VDPES Permit No. VA0092771.

Contact me at anna.tuthill@deq.virginia.gov or 571-866-6090 if you have questions.

Respectfully,

A M Tuthill

Anna M. Tuthill
NRO Regional MS4 Coordinator/Inspector

cc via electronic copy: Susan Mackert, DEQ Water Permit Writer, Senior II
Margaret Dannemann, DEQ-NRO TMDL Manager
ECM

APPENDIX D:
POLICY MEMO – STORMWATER POLLUTION PREVENTION

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR
9820 FLAGLER ROAD, SUITE 213
FORT BELVOIR, VIRGINIA 22060-5928

AMIM-BVP-E

MEMORANDUM FOR US Army Fort Belvoir Personnel

SUBJECT: Fort Belvoir Policy Memorandum #25, Prohibition of Illicit/Unauthorized Discharges to the Municipal Separate Storm Sewer

1. References.

a. Clean Water Act (33 USC Sec. 1251)

b. General Virginia Pollution Discharge Elimination System Permit (VPDES) for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), Permit # VAR040093 (9VAC25-890-40)

c. VPDES Industrial Stormwater Individual Major Permit #VA0092771

d. Industrial Stormwater VPDES Discharges (9 Virginia Administrative Code 25-31, 25-151 and 25-120)

2. Purpose. To prevent illicit discharges and illegal dumping into the storm sewer systems at Fort Belvoir Main Post and Fort Belvoir North Area to ensure protection of water quality of Fort Belvoir waterways and compliance with Fort Belvoir VPDES MS4 and Industrial Stormwater permits.

3. Definitions.

a. Illegal dumping: Any dumping of solid or liquid material into the storm sewer system.

b. Illicit connection: Any drain or conveyance, whether on the surface or subsurface, which allows a non-stormwater discharge to enter the storm sewer system and any connections to the storm sewer system from indoor drains, sinks or sanitary sewer.

c. Illicit discharge: Any discharge to the storm sewer system that is not composed entirely of stormwater that causes or contributes to pollution. Illicit discharges may include, but are not limited to: hazardous materials such as paints, varnishes and

solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes such as garbage, yard wastes (grass clippings and leaves), mulch, discarded or abandoned objects, pesticides, herbicides, fertilizers, sewage; dissolved and particulate metals, pet/animal wastes, construction wastes and residues and noxious or offensive material of any kind.

d. Storm sewer system: A collection of underground pipes and conveyances (ditches, channels) that drain to Fort Belvoir waterway. The water that drains through the storm sewer is not treated to remove pollutants. Whatever pollutants enter the storm sewer system directly end up in waterways.

e. Stormwater: Precipitation that flows across the land surface or through conveyances to one or more waterways and that may include rain runoff, snow melt runoff and surface runoff and drainage.

f. Waterways: Includes all bodies of water, but is not limited to, rivers, streams, bays, wetlands stormwater management ponds and drainage ditches.

3. Applicability. This policy applies to military and civilian personnel, tenant and satellite organizations, mission partners, housing residents and contractor activities at Fort Belvoir and Fort Belvoir North Area.

4. Background. As stormwater flows across the ground, off of a roof or through a parking lot, it can pick up various pollutants such as oil, grease, spilled materials, loose soil and other debris. When it rains, stormwater flows to the storm sewer system and eventually drains directly into Fort Belvoir waterways and ultimately to the Chesapeake Bay with no treatment for pollutant removal.

5. Policy. Fort Belvoir is committed to protecting water quality of waterways on and surrounding Fort Belvoir to ensure that human health, ecosystem health and the ability to conduct recreational opportunities are not impacted by stormwater pollution. Reference a. requires the establishment of an enforceable policy that prohibits illicit discharges and illegal dumping.

a. Prohibited Discharges into Storm Sewer System: The following are common sources of illicit discharges/illegal dumping at Fort Belvoir that are prohibited from entering into the storm sewer system: sanitary sewer overflows, trash, paint, grease,

motor oil or other lubricants, fuel, cooking oil, salt, fertilizer, pesticides chemicals, liquid materials, lawn wastes (grass clippings and leaves), mulch, cigarette butts, sand, soil, construction materials, wash waters containing soaps, detergents and degreasers of any kind, fire hydrant and water line flushing and potable water tank discharge without prior de-chlorination, and pet/animal waste.

b. Materials Storage: All personnel are responsible for ensuring proper storage of materials. Materials should be stored inside, under roof, whenever possible. If outside storage of materials cannot be avoided, materials must be elevated off the ground and covered to prevent stormwater from coming in contact with material and being carried into the storm sewer. Keep it “High and Dry”! Any outdoor materials storage areas should be located away from components of the storm sewer system (inlets, drains, swales, stormwater management ponds, ditches). Personnel responsible for bulk storage areas for items such as salt, mulch, and soil stockpiles will implement best management practices to ensure that material does not enter storm sewer during a storm event. Any liquid materials must be stored in adequate secondary containment.

c. Spill Response: All personnel are responsible for following the Fort Belvoir Master Spill Plan. Fort Belvoir Spill Response Procedures can be found at https://home.army.mil/belvoir/index.php/download_file/force/822/549

d. Waste Material Disposal: All personnel are responsible for proper disposal of all hazardous and nonhazardous waste materials, including yard wastes. Hazardous waste disposal is required to be conducted in accordance with the Fort Belvoir Hazardous Waste Minimization and Management Plan.

e. Vehicle Cleaning, Maintenance and Storage: Operations, including fueling, cleaning and maintenance of aircraft, equipment, campers, boats and vehicles should be conducted indoors or under cover to prevent exposure to stormwater whenever possible. Cleaning of vehicles may be conducted outside only at an authorized wash rack or commercial car wash.

f. Use of Deicing Materials: Application of any deicing agents containing urea or other forms of nitrogen or phosphorous or ethylene glycol to parking lots, roadways, sidewalks or other paved surfaces is prohibited per reference a.

g Waste Container Management: All personnel are responsible for ensuring that tops and sides of dumpsters are closed and notifying the Directorate of Public Works (DPW), Operations and Maintenance (O&M), Solid Waste Program Manager, 703-806-0061, if the dumpster is rusty, leaking or missing a drain plug that could allow for dumpster contents to leak onto the ground.

h. Illicit Connections: All personnel are responsible for reporting any discovered or suspected illicit connections to the DPW Environmental Division (ENV), Stormwater Program Manager, 703-806-0627.

i. Annual Training: As required by reference a., the following personnel are required to attend annual training in the recognition, prevention and reporting of illicit discharges: personnel employed in and around maintenance and public works facilities; personnel employed for road, street and parking lot maintenance; personnel employed in and around recreational facilities; and personnel employed at facilities where Stormwater Pollution Prevention Plans have been implemented. Additional categories of personnel may require training if personnel are found to have caused an illicit discharge. DPW ENV will schedule and provide training for all required personnel.

j. All stormwater concerns and suspected illicit connections may be submitted via email at usarmy.belvoir.id-sustainment.mbx.dpw-environmental@army.mil.

6. Proponent. The proponent for this policy is the Directorate of Public Works. The technical POC is the Stormwater Program Manager at 703-806-0627. The point of contact is Mr. Yun Heo, Director of Public Works.

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Encl

DAVID J. STEWART
COL, EN
Commanding

APPENDIX E:
EDUCATIONAL MATERIALS

Brochure:
PCBs & How to Keep Yourself Safe

BMP Fact Sheet:
PCB Awareness

Training Slides:
PCB TMDL Traiing Slides for SWPPP Facilities

WHAT TO LOOK FOR...

- Yellow, oily liquid or tar-like potting material that leaks from the FLB or transformers.
- Older, derelict transformers around the Installation

How YOU can help...

1. *Get familiar with PCBs*—Knowing what PCBs are and how to identify them is key to reducing potential exposure.
2. *See something, say something*—Before PCBs were restricted, there were no regulations on how to safely discard the items and the long-term environmental effects were still unknown. Therefore, many transformers and electrical equipment were discarded in forests and unoccupied sites. If you see something that looks misplaced out in a field or the woods, report it to DPW.
3. *Take smart actions*—Exercise caution if you come across what you think might be contaminated with PCBs. Report the PCB contamination to DPW/ENRD

REPORT POTENTIAL PCB SOURCES IMMEDIATELY!

A leaking fluorescent light ballast or transformer may increase PCB levels in the air, therefore, measures should be taken to avoid personal exposure and future exposure for others.

A typical pre-1979 PCB-containing fluorescent light ballast

HOW TO REPORT TO DIRECTORATE OF PUBLIC WORKS

1. Call the Environmental an Natural Resources Division at:
   703-806-3406
   703-806-0137
2. Report what was observed and the location of potential PCB contamination

PCBS & HOW TO KEEP YOURSELF SAFE

Typical PCB-containing Transformer

WHAT ARE PCBs?

Polychlorinated **B**iphenyls belong to a class of man-made chemicals known as chlorinated hydrocarbons. PCBs were prominently manufactured by the US between 1929 and 1979. Due to their chemical stability, non-flammability, and superior insulating properties PCBs were used in a large number of industrial and commercial products.

Products that used PCBs:

- Electrical equipment
- Paints
- Plastics
- Dyes and pigments
- Light bulbs
- Caulking
- Carbon paper
- Transformers and capacitors
- Adhesives and tapes
- Floor finish

The discharge of PCB's into the environment was outlawed by federal environmental regulations in 1976 but the effects of PCBs are still being felt today. PCBs are unique in that PCB molecules bind to fine sediments and can remain stable in the environment for long periods cycling between air, water, and soil.

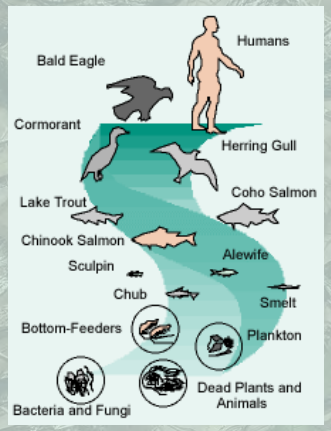
1865 First PCB-like chemical discovered

1929 EPA banned manufacturing of PCBs

1929-1979 2 million tons of PCBs were produced

WHY ARE PCBs SO HARMFUL?

During the time PCB's were manufactured, there were no regulated controls on disposal. PCBs do not break down easily and therefore are found widely distributed in our environment. PCB concentrations in the environment are quite low, however, because of bioaccumulation, this becomes harmful to humans and other predatory animals in high concentrations.



Bioaccumulation occurs when bottom feeders ingest sediment containing PCBs. Larger animals then eat these bottom feeders multiplying the amount of PCBs they have in their body. PCB's can become a million times more concentrated in larger predatory animals such as fish and birds. So when we eat fish that come from contaminated streams we are at risk of consuming large amounts of PCB's as well.

1977 EPA makes it illegal to discharge PCBs into navigable water

1978 EPA increased PCB regulation limit (500 ppm to 50 ppm)/ EPA began controlling PCB waste disposal

1979 EPA banned manufacturing of PCBs

HOW TO IDENTIFY PCBs?

PCBs have no known taste or smell, and range in consistency from an oil to a waxy solid. It can be difficult to distinguish PCB's from other materials so it is important to become familiar with the most common sources of PCB's contamination. **PCBs are most commonly reported in:**

- Poorly maintained hazardous waste sites
- Leaks from old electrical transformers

The following criteria are provided to help identify transformers and Fluorescent Light Ballasts (FLBs) that may contain PCBs:

- FLBs and Transformers manufactured before July 1, 1979 may contain PCBs
- Products manufactured between July 1, 1979 and July 1, 1998 that do not contain PCBs must be labeled "No PCBs"
- If an FLB or Transformer is not labeled "No PCBs," it is best to assume it contains PCBs unless it is manufactured after 1979
- Products manufactured after 1998 are not required to be labeled

2002 Potomac River placed on DEQ Impaired list for PCB in fish tissue

2010 Accotink Creek placed on DEQ Impaired list for PCB in fish tissue

2015 PCB TMDL Action was implemented at Fort Belvoir

PCB AWARENESS
BMP FACTSHEET 17 Rev. 04/2023

A typical pre-1979 PCB-containing fluorescent light ballast (FLB)

Targeted Pollutants	
Sediment	
Nutrients	
Trash	
Metals	
Bacteria	
Oil & Grease	
Chemicals	X
Salt	

Objectives	
Cover	
Contain	
Educate	X
Reduce/Minimize	
Product Substitution	

DESCRIPTION

PCB stands for Polychlorinated Biphenyl. This chemical is a class of man-made chemicals known as chlorinated hydrocarbons. PCBs were manufactured by the US between 1929 and 1979. Due to their chemical stability, non-flammability, and superior insulating properties, PCBs were used in a large number of industrial and commercial products. These products include; electrical equipment, paints and plastics, dyes and pigments, light bulbs, caulking, carbon paper, and many types of adhesives.

****Always exercise caution if you come across what you think might be a contaminated area or old equipment (transformers and light ballasts) with PCBs. If you believe you may have found a source of PCB contamination contact DPW/ENV. DIV. at 703-806-0020 or 703-806-3694.**
SEE SOMETHING, SAY SOMETHING!**

IDENTIFICATION GUIDELINES

PCBs have no known taste or smell and range in consistency from an oil to a waxy solid. It can be difficult to distinguish PCBs from other materials so it is important to become familiar with the most common sources of PCBs contamination. PCBs are most commonly reported in poorly maintained hazardous waste sites and leaks from old electrical transformers.
Fort Belvoir also has many older sites that may house old transformers or Fluorescent Light Ballasts (FLBs) that have not yet been discovered and therefore disposed of properly. The following criteria are provided to help identify transformers and FLBs that may contain PCBs:

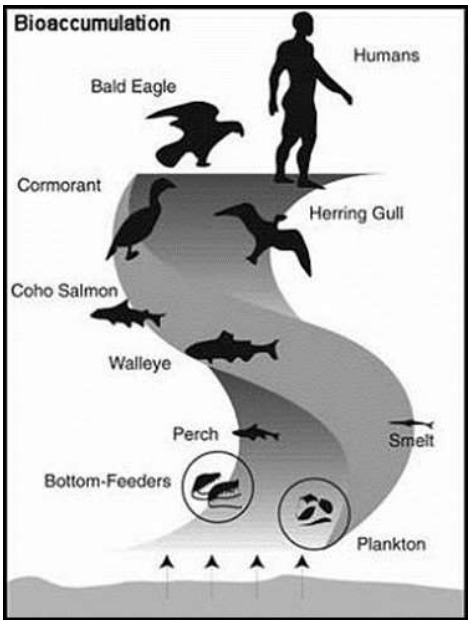
- FLBs and transformers manufactured before July 1, 1979 may contain PCBs.
- Products manufactured between July 1, 1979 and July 1, 1998 that do not contain PCBs must be labeled "No PCBs".
- If a FLB or Transformer is not labeled "No PCBs", it is best to assume it contains PCBs unless it is manufactured after 1979.
- Products manufactured after 1998 are not required to be labeled.

PCBs may be present as a yellow, oily liquid or in the tar-like potting material that leaks from the FLB or transformer. A leaking FLB or transformer may increase PCB levels in the air. Therefore, measures should be taken to avoid personal exposure.

PCB AWARENESS
BMP FACTSHEET 17

ENVIRONMENTAL IMPACTS OF PCBs

The discharge of PCBs into the environment was outlawed by federal environmental regulations in 1976. However, the effects of PCBs are still evident today because PCB's are unique in that PCB molecules bind to fine sediments and can remain stable in the environment for a very long time. Between 1929 and 1979 when PCBs were manufactured, there were often no effective controls for disposal. Because PCBs do not break down easily, they are now found widely distributed in our environment. Generally, concentrations in the environment are quite low, however, the chemical properties of PCBs cause them to be concentrated up the food chain through a process called bioaccumulation. Bioaccumulation takes place when bottom feeders that ingest sediment containing PCBs are eaten by larger animals. PCBs can become a million times more concentrated in larger predatory animals such as fish and birds. So when we eat fish that come from contaminated streams we are at risk of consuming large amounts of PCBs as well. The adjacent diagram helps explain what bio accumulation is. The health effects of PCBs have been widely studied. Evidence shows PCBs cause a variety of adverse health effects including developmental disorders, cancer and disorders of the immune system, reproductive system, nervous system and endocrine system.



POSSIBLE EXPOSURE TO PCBS

Because PCBs are no longer manufactured or widely used today, there are relatively few ways people can be exposed to concentrated PCBs. The most common exposure routes include:

- Food**:** PCBs in food are probably the single most significant source of exposure for people. PCBs can be highly concentrated in the fish of waters contaminated with even low levels of PCBs. Predator fish at the top of the food chain as well as bottom feeding fish, tend to contain the highest PCB levels in those waters. Make sure the fish you eat does not come from areas of known PCB contamination. Pay attention to signs posted in fishing areas.
- Surface Soils: The health hazard related to soil is the potential for people to swallow small amounts of the soil and for the soils to runoff to lakes and rivers and concentrate in fish and other wildlife.
- Drinking Water and Groundwater: Fortunately PCBs are not very water-soluble so it is rare for them to be found in groundwater. Some submersible pumps found in private wells have been recalled because PCB containing oils had been used in the manufacturing of the pump. When these pumps fail, PCB oils can leak out into the drinking water.
- Indoor Air: Older fluorescent lights found in schools, offices, and homes, as well as transformers, paints, oils, hydraulic fluid, caulk and other building materials manufactured prior to 1980 may contain PCBs. If the ballasts fail, PCBs can leak out and contaminate exposed surfaces and the air.

DIRECT IMPACTS ON WATERWAYS

FORT BELVOIR'S STORMWATER RUNOFF DISCHARGES DIRECTLY INTO ACCOTINK CREEK, DOGUE CREEK, OR POHICK CREEK. THESE WATER WAYS ARE DIRECTLY IMPACTED FROM CONTAMINATION AND INCREASED FLOWS COMING FROM OUR INSTALLATION.

THESE CREEKS DRAIN TO POTOMAC RIVER AND THEN THE CHESAPEAKE BAY – ALL ARE CONSIDERED IMPAIRED WATER BODIES.

IMPAIRED WATER BODIES ARE THOSE THAT HAVE BEEN ASSESSED AND WERE DETERMINED TO NOT SUPPORT HEALTHY AQUATIC LIFE AND/OR HUMAN ACTIVITY. THEREFORE, THEY MAY NOT BE USED FOR RECREATION, FISHING, OR EVEN AS A DRINKING WATER SOURCE. TOTAL MAXIMUM DAILY LOADS (TMDLS) ARE SET FOR THESE BODIES OF WATER IN ORDER TO REACH WATER QUALITY STANDARDS.

TMDLS

ESTABLISH THE **MAXIMUM AMOUNT OF A POLLUTANT** ALLOWED IN A WATERBODY AND SERVES AS THE STARTING POINT OR PLANNING TOOL FOR RESTORING WATER QUALITY.

IS AN EPA ESTABLISHED A "**POLLUTION DIET**" TO RESTORE CLEAN WATER IN THE REGION'S STREAMS, CREEKS, AND RIVERS, INCLUDING THE CHESAPEAKE BAY

POTOMAC RIVER TMDL

THE POTOMAC RIVER AND A NUMBER OF ITS TRIBUTARIES HAVE BEEN LISTED AS IMPAIRED SURFACE WATERS DUE TO **POLYCHLORINATED BIPHENYL (PCBS)** CONTAMINATION OF SEDIMENTS AND FISH TISSUE.

PCBS ARE A MAN-MADE CHEMICALS KNOWN AS CHLORINATED HYDROCARBONS WHICH WERE USED PRIMARILY BETWEEN 1929 AND 1979. PCBS WERE COMMON IN:

- ELECTRICAL DEVICES SUCH AS TRANSFORMERS, IN HYDRAULIC FLUIDS, AND LUBRICANTS.
- CAULKING AND ELASTIC SEALANT MATERIALS PRIMARILY USED IN OR AROUND WINDOWS, DOOR FRAMES, STAIRWAYS, BUILDING JOINTS, MASONRY COLUMNS, AND OTHER MASONRY BUILDING MATERIALS.
- FLUORESCENT LIGHT BALLASTS MANUFACTURED BEFORE 1979.
- SPECIALTY PAINTS AND COATINGS, PRIMARILY IN INDUSTRIAL AND MILITARY APPLICATIONS, WHICH WERE MANUFACTURED TO ENDURE THERMAL STRESS, VIBRATION OR CORROSIVITY.

RESIDUAL PCB CONTAMINATION IN SOIL FROM PAST ACTIVITIES CAN MIGRATE DUE TO SOIL EROSION AND LAND DISTURBING ACTIVITIES THAT MAY RELEASE SEDIMENT TO STREAMS. PCBS MAY ALSO MAKE IT TO OUR WATERWAYS DUE TO IMPROPER HANDLING AND STORAGE DURING RENOVATIONS AND REPAIRS OF OLDER INFRASTRUCTURE.

PCB HAZARDS IN FOOD ARE PROBABLY THE SINGLE MOST SIGNIFICANT SOURCE OF EXPOSURE FOR PEOPLE. PCBS CAN BE HIGHLY CONCENTRATED IN THE FISH OF WATERS CONTAMINATED WITH EVEN LOW LEVELS OF PCBS. PREDATOR FISH AT THE TOP OF THE FOOD CHAIN AS WELL AS BOTTOM FEEDING FISH, TEND TO CONTAIN THE HIGHEST PCB LEVELS IN THOSE WATERS.

PAY ATTENTION TO SIGNS POSTED IN FISHING AREAS

Revised: 2024

Prepared By:
Aerostar Environmental and Construction LLC

WHERE DO YOU COME IN?

YOU AS AN INDIVIDUAL CAN HELP! ACTION PLANS AND BEST MANAGEMENT PRACTICES (BMPS) ARE CURRENTLY BEING IMPLEMENTED ON FORT BELVOIR TO HELP REDUCE THE POLLUTANTS THAT ENTER OUR WATERWAYS

SEDIMENT

- **REPORT** SEDIMENT LADEN RUNOFF FROM CONSTRUCTION SITES
- **REPORT** LARGE AREAS WITH BARE SOILS OR HEAVY EROSION

PCBS

- PCB CONTAINING MATERIALS AND EQUIPMENT REQUIRE SPECIAL STORAGE AND HANDLING. IF YOU LOCATE OR IDENTIFY ANY POTENTIAL SOURCE OF PCB CONTAMINATION, TAKE PROPER PRECAUTIONS AND IMMEDIATELY **REPORT** TO DPW/ENRD HAZARDOUS WASTE PROGRAM FOR GUIDANCE AT 703-806-2119 OR 703-806-4537

CHLORIDES

- ENSURE **PROPER STORAGE AND APPLICATION** OF SALTS AND DEICERS DURING THE WINTER SEASON
- USE DICHLORINATION TECHNIQUES WHEN DISCHARGING LARGE AMOUNTS OF POTABLE WATER

BACTERIA

- CLEAN UP PET WASTE – UTILIZE THE MANY PET WASTE STATIONS ON FORT BELVOIR.
- **PROPERLY MANAGE FOG** TO PREVENT BACKUPS AND OVERFLOWS.
- **REPORT** SANITARY SEWER OVERFLOWS (SSO)

NUTRIENTS

- CLEAR OUT LEAF LITTER BUILD-UP AND **REPORT** BLOCKAGES AT STORMWATER INLETS
- ENSURE PROPER STORAGE AND APPLICATION OF FERTILIZERS OR ELIMINATE USE ALL TOGETHER

Revised: 2024

Prepared By:
Aerostar Environmental and Construction LLC