JOINT BASE MYER – HENDERSON HALL
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROGRAM PLAN

APPENDIX C.1

PCB TMDL ACTION PLAN

FOR

FORT MYER & HENDERSON HALL INSTALLATIONS
FORT MYER, VIRGINIA

June 2023 Update

Prepared in accordance with:

Virginia Stormwater Management Program (VSMP) General Permit No.: VAR04
General Permit for Discharges of Stormwater from Small MS4s

VSMP Registration Number VAR040068

Prepared by:
JBM-HH Directorate of Public Works, Environmental Management Division

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ACRONYMS

ANC	Arlington National Cemetery
ATSDR	Agency for Toxic Substances and Disease Registry
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CDC	Child Development Center
DA	Department of the Army
DoD	Department of Defense
DPW	Directorate of Public Works
EPA	U.S. Environmental Protection Agency
FMMC	Fort Myer Military Community
JBM-HH	Joint Base Myer-Henderson Hall
JFHQ-NCR	Joint Force Headquarters-National Capital Region
LA	Load Allocation
MDW	Military District of Washington
MOS	Margin of Safety
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
OWS	Oil/water Separator
PCB	Polychlorinated Biphenyls
POC	Pollutants of Concern
ppb	parts per billion
ppm	parts per million
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
USMC	U.S. Marine Corps
VADEQ	Virginia Department of Environmental Quality
VDOT	Virginia Department of Transportation
VSMP	Virginia Stormwater Management Program
WLA	Wasteload Allocation
WQLS	Water Quality Limited Segments

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1.0 INTRODUCTION AND BACKGROUND

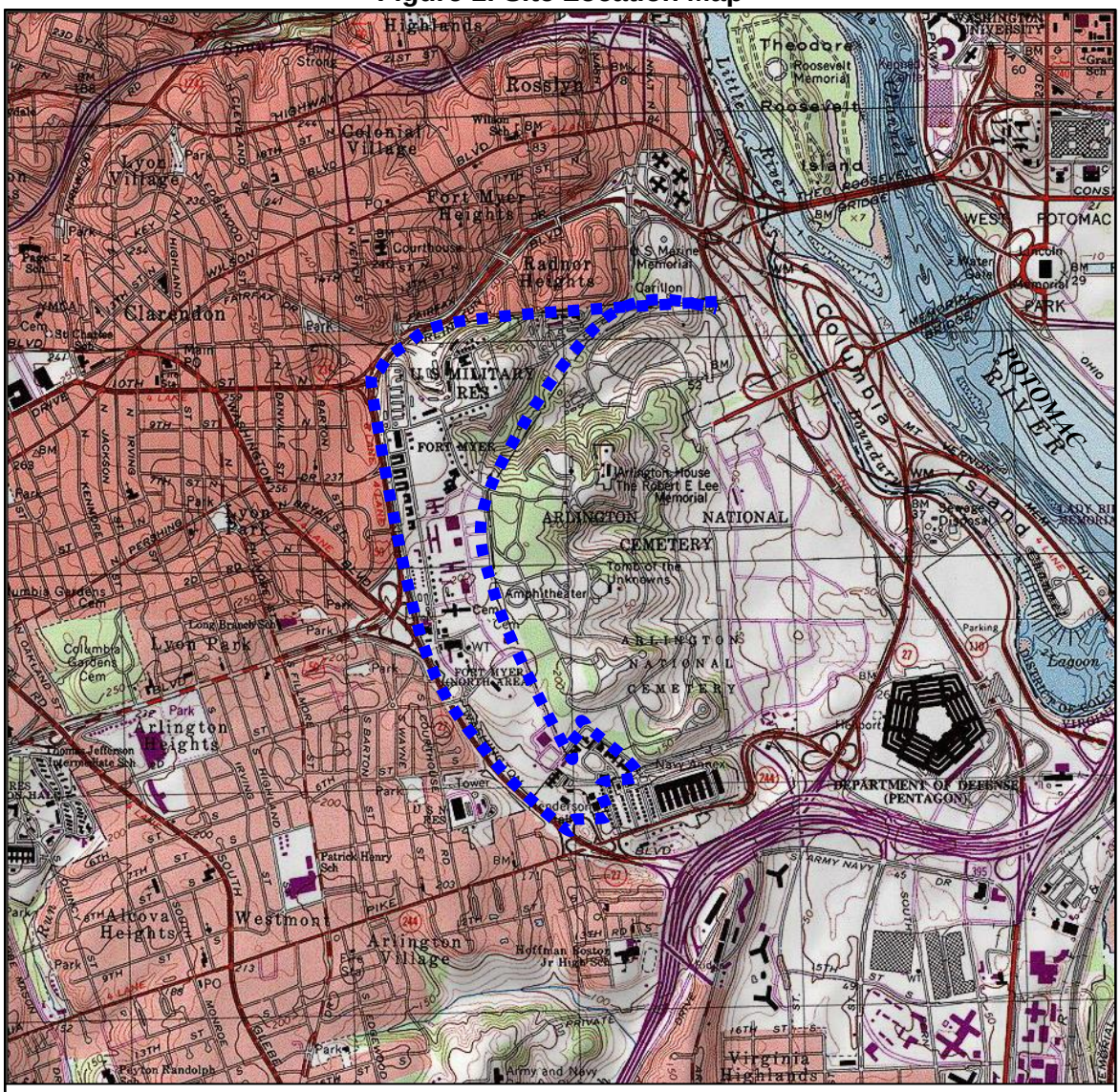
1.1 Installation Description and Organization

Joint Base Myer-Henderson Hall (JBM-HH) is located in the District of Columbia Metropolitan Area and was created from the administrative reorganization of the Fort Myer Military Community (Fort Myer and Fort McNair) and the Marine Corps installation at Henderson Hall as a result of Base Realignment and Closure (BRAC) 2005 recommendations. Fort Myer assumed Installation management responsibilities and integration of some functions and services between U.S. Army Installation Fort Myer (Fort Myer) and Marine Corps Headquarters Battalion Henderson Hall (Henderson Hall) to provide more efficient support of the on-Installation and regional populations. JBM-HH, which includes Fort McNair in Washington, D.C., serves as the Joint Force Headquarters-National Capital Region (JFHQ-NCR), and the Military District of Washington (MDW) base support of operations, providing a broad level of support for missions of homeland defense, defense support to civil authorities and world-class ceremonial, musical, and special event missions. JBM-HH is home to the 3rd U.S. Infantry Regiment (The Old Guard) and the U.S. Marine Corps (USMC) Headquarters Battalion structured within the Marine Corps National Capital Region Command.

Fort Myer and Henderson Hall, jointly referred to as 'the Installation' in this Plan, are located in Arlington, Virginia, directly across the Potomac River from Washington, DC. The Installation occupies approximately 270 acres and is bordered on the north by Arlington Boulevard (Virginia Route 50), to the south by Columbia Pike (Virginia Route 244), to the west by Washington Boulevard (Virginia Route 27), and to the east by Arlington National Cemetery (ANC). Stormwater from the Installation ultimately discharges to the Potomac River, which is the nearest open water body and is located approximately 0.9 mile to the east of the Installation. Stormwater discharges from the Installation flow either east to an unnamed intermittent stream that flows through ANC and discharges to the Potomac River via Boundary Channel, north to Arlington County storm drains within the Rocky Run watershed (and ultimately to the Potomac River), or west and south to Lower Long Branch Creek and Arlington County storm drains that drain to the Potomac River via Fourmile Run, a Potomac River tributary.

A site location map is provided as **Figure 1** below.

Figure 1: Site Location Map



1.2 MS4 Permit

Discharges from municipal separate storm sewer systems (MS4s) in the Commonwealth of Virginia are regulated under the Virginia Stormwater Management Act, the Virginia Stormwater Management Program (VSMP) permit regulations, the National Pollutant Discharge Elimination System (NPDES), and the federal Clean Water Act. Stormwater discharges from Phase II (small) MS4s in Virginia are regulated under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (General Permit) as published at 9 VAC 25-890-40. Small MS4s include storm sewer systems operated by cities, counties, towns, federal facilities such as military bases, Veteran's Affairs hospitals and research facilities, Department of Defense (DoD) facilities and parkways, and state facilities such as the Virginia Department of Transportation (VDOT), community colleges, and public universities. The Virginia MS4 General Permit issued to JBM-HH applies to Fort Myer and Henderson Hall.

The MS4 Permit requires permit holders to develop a Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan in order to meet required pollutant load reductions for nitrogen, phosphorus, and sediment. A TMDL is the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards. Facilities located in a watershed that has a TMDL for a particular pollutant are often required to monitor outfall discharge for that pollutant and implement Best Management Practices (BMPs) to help control pollutants and prevent them from reaching the impaired waterways.

Part II.B of the MS4 General Permit contains special conditions regarding approved TMDLs other than the Chesapeake Bay TMDL. The permit requires MS4 operators to prepare and implement specific TMDL Action Plans for pollutants subject to a TMDL where the MS4 has been allocated a wasteload in an approved TMDL. The TMDL Actions Plans must identify the best management practices and other interim milestone activities to be implemented during the term of the MS4 General Permit.

The US Environmental Protection Agency (EPA) approved a TMDL for Polychlorinated Biphenyls (PCBs) for the Potomac River on October 31, 2007. Municipal stormwater discharges covered under NPDES permits are included in the TMDL stormwater Waste Load Allocations (WLAs). Therefore, small MS4s must develop and implement local TMDL Action Plans to reduce nonpoint source pollutant loads of pollutants of concern (POC) in order to meet the MS4's assigned WLA for PCBs.

To meet the permit requirements, this Action Plan describes the current and historic uses of PCBs on the installation, outlines a sampling and analysis plan to determine potential areas of concern, and recommends Best Management Practices (BMPs) to address potential PCB pollutant concerns.

The PCB TMDL Action Plan for JBM-HH was developed from March-July 2016 and submitted to the Virginia DEQ on 18 July 2016. The Plan was approved by the Virginia Department of Environmental Quality (VADEQ) in a letter dated 26 July 2016. This revised Action Plan addresses requirements in the MS4 Permit that went into effect on November 1, 2018. The revised Action Plan also incorporates applicable guidance provided in VADEQ Guidance Memo No. GM-16-2006, *TMDL Action Planning for Local Total Maximum Daily Loads as Required in the Small MS4 General Permit (VAR04) Effective July 1, 2013 and MS4 Individual Permits*, dated 21 November 2016.

1.3 MS4 Program and Legal Authorities

The provisions contained in the MS4 Permit and associated regulations are enforced through JBM-HH policy memorandums and standardized procedures for project review and implementation. An Installation-wide stormwater policy was developed in 2016 and updated in 2019 and 2021 to address the Installation's compliance with the Virginia MS4 permit and other stormwater regulations. The policy outlines proper protocols for minimizing stormwater pollution during activities that directly and indirectly impact stormwater. The policy was most recently signed by the Joint Base Commander on 15 October 2021 and is included as **Appendix A**.

2.0 PCB CHARACTERISTICS AND FATE AND TRANSPORT

PCBs are a group of synthetic organic chemicals that were used for a variety of purposes from 1929 until 1979, when the U.S. banned manufacturing, processing, distribution, and use of PCBs. The molecular structure of PCBs include two benzene rings (known as biphenyl) and up to 10 chlorine atoms substituted on each of the benzene molecules, creating a total of 209 individual PCM compounds known as congeners.

There are no known naturally occurring sources of PCBs, so detections in air, water, or soil are related to the manufacture, use, or disposal of PCBs. At the height of their use, PCBs were found primarily in closed systems and heat transfer fluids, such as in transformers, capacitors, and fluorescent light ballasts. Historically, PCBs entered the environment from accidental spills and leaks during their transport and from leaks or fires in products containing PCBs. Currently, they can still be released from hazardous waste sites, illegal or improper disposal of industrial wastes and consumer products, leaks from old electrical transformers containing PCBs, and burning of some wastes in incinerators (ATSDR, 2014).

PCBs are highly resistive to chemical reaction. This stability means they remain in the environment for a long time without breaking down. The low vapor pressure of PCBs reduces their potential to volatilize.

PCBs are hydrophobic – meaning they are not easily dissolved in water – so the majority of PCBs will bind to organic particles and bottom sediments. PCBs bind strongly to soils and can enter surface water via contaminated soil particles in runoff. Therefore, limiting sediment transport from PCB sites would reduce the potential for PCB contributions to surface water.

PCBs can accumulate in leaves and other aboveground parts of plants and are also taken up by small organisms and fish. Consequently, ingesting fish may expose people to PCBs that have bioaccumulated in the fish tissue. Concerns over this bioaccumulation and exposure led to the development of PCB TMDLs for impaired water bodies.

3.0 POTOMAC WATERSHED PCB TMDL APPLICABILITY TO JBM-HH MS4 PERMIT

PCB TMDLs were established for 28 listed impaired water body segments in tidal portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia in 2007. The purpose of establishing the PCB TMDL was to ensure that fish tissue PCB concentrations do not exceed the impairment thresholds set for each jurisdiction, in order to protect human health with respect to fish consumption. The fish tissue impairment threshold for Virginia is 54 parts per billion (ppb). Section 303(d) of the Clean Water Act and EPA's implementing regulations require the states to identify impaired waters, called water quality limited segments (WQLS), where current pollutant controls are inadequate to achieve water quality standards and establish a TMDL for those WQLSs. Virginia has listed 19 tidal embayments of the Potomac River as impaired by PCB contamination. The impairment generally includes all tidal waters within each embayment, from the head-of-tide to the Potomac River mainstem.

A TMDL is the sum of the waste load allocations (WLAs), load allocations (LAs), and the margin of safety (MOS). The WLA portion consists of the permitted point sources that contribute to the total PCB load, such as waste water treatment plants, regulated stormwater, and combined sewer overflow. The LA portion consists of nonpoint source runoff, atmospheric deposition, tributaries, and identified contaminated sites. The MOS accounts for uncertainty in the load estimates.

JBM-HH's MS4 Permit falls under the WLA portion of the TMDL, as regulated stormwater. While JBM-HH does not directly impact the impaired waterbodies listed for Virginia, stormwater discharges from the Installation eventually discharge to the Potomac River, including Fourmile Run, which is an impaired waterbody. Therefore, any PCB contamination discharged through the Installation's storm drain system has the potential to impact the Potomac River and contribute to the total PCB load.

EPA allows pollutant loads attributed to NPDES-regulated stormwater outfalls to be expressed as a single stormwater WLA for each impaired waterbody (US EPA, 2002). Rather than assign numeric pollutant limits on discharges from NPDES-regulated municipal and small construction

stormwater discharges, EPA recommends that “effluent limits be expressed as best management practices (BMPs) or other similar requirements, rather than as numeric effluent limits.”

4.0 JBM-HH PCB TMDL ACTION PLAN FOR SMALL MS4 PERMIT

4.1 PCB TMDL Action Plan

This Action Plan complies with the MS4 Permit requirement for addressing the PCB TMDL for JBM-HH. The Plan consists of the following:

- Historic use inventory and analysis
- Summary of the historic PCB site analysis
- Recommendations for sites with potential PCB sources
- Evaluation of existing Best Management Practices (BMPs)
- Sampling and analysis plan.

As required by the Permit, JBM-HH will provide a public comment period for the updated Action Plan for no less than 15 days and will notify DEQ in writing within 30 days if a previously unidentified significant source of PCBs is discovered within the MS4 permitted area.

4.2 PCB Historic Use Inventory Analysis

The PCB historic use inventory analysis of JBM-HH addresses transformers and other areas on the installation where PCBs currently exist, or have been stored, transported or spilled in the past. This information was compiled from available historical documents for the installation and transformer inspections performed as of May 2016.

Historically, transformers have been the main source of PCBs on the Installation. Information on current and historic transformers was requested from Dominion Virginia Power (Dominion), who has owned and maintained the transformers on the Installation since August 2007. Dominion states that since their contract started with JBM-HH in 2007, there have been no active transformers with over 50 ppm PCB content on the installation.

The transformer inventory, included as **Appendix B**, lists transformers (current at the time of assessment for this Plan, as well as historic), including locations, serial numbers, manufacturers, PCB content, and other information pertaining to the transformers. **Figure 2** shows the locations of the active transformers on the Installation. In May 2016, transformers currently located on the installation were inspected for signs of current or past oil staining or leaking. **Appendix C** lists locations where possible signs of PCB staining were noted near transformers during recent and past inspections, as well as locations where historical documents indicated PCB impacts were determined to exist based on samples and laboratory results. These sites are then evaluated for the potential for remaining PCBs to impact stormwater runoff. **Section 4.3** below details the site analysis. **Section 5.0** describes the sampling and analysis plan for two sites that were identified as having potential to impact stormwater.

Historical documentation for JBM-HH also indicates the previous use and disposal of PCB light ballasts. They were formerly stored in 90-day Hazardous Waste containers before disposal. PCB light ballasts are no longer used at JBM-HH and historical documentation did not reveal any incidents of PCB spills or impacts from light ballasts.

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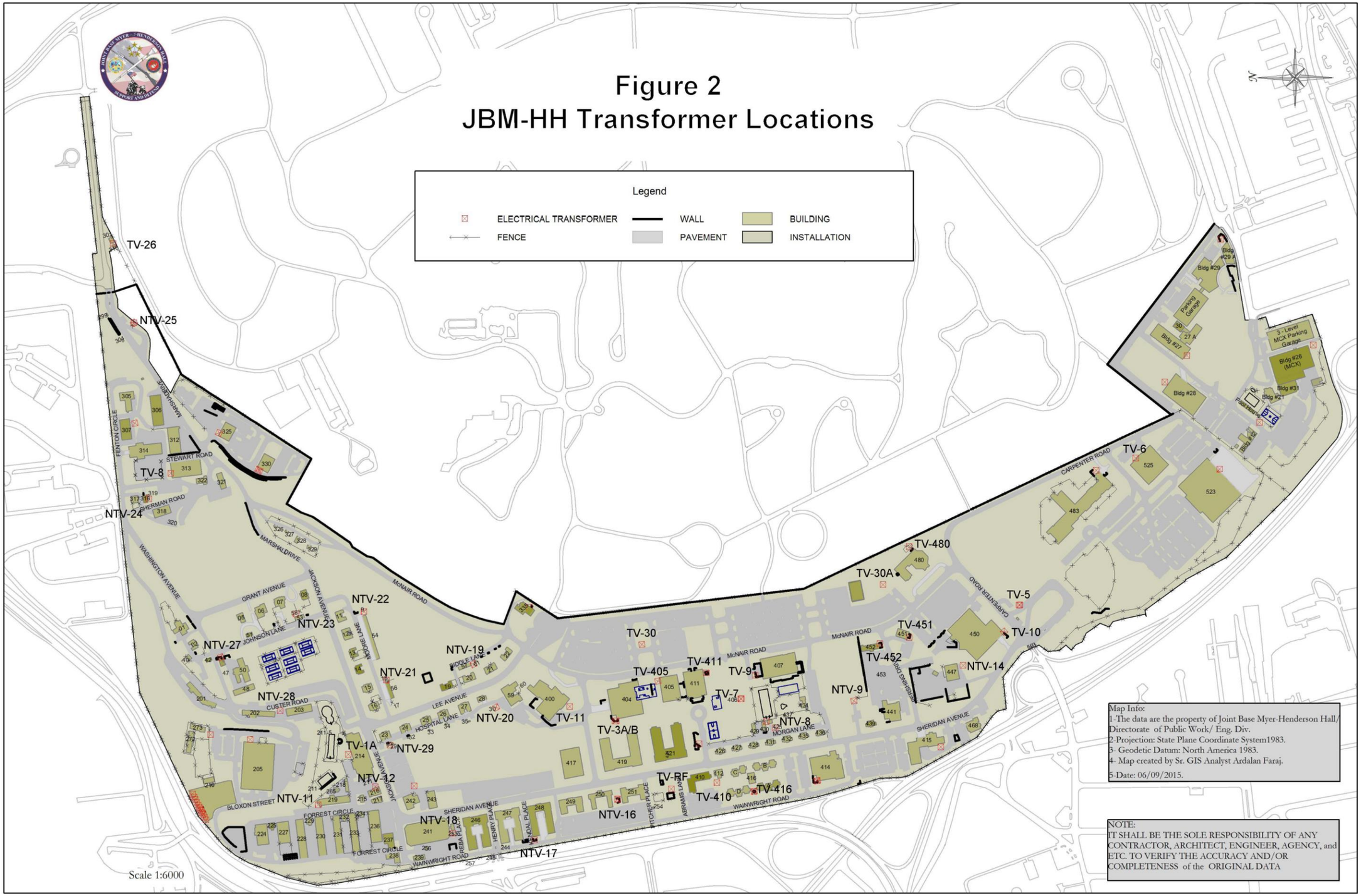
Figure 2
JBM-HH Transformer Locations



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4.3 Summary of Site Analysis

Sites that could be a potential source of PCB impacts were evaluated through the review of historical records and in-person site inspections. The table in **Appendix C** lists the locations that were assessed, including sites with current and/or historic transformers and other locations where evidence of PCB leaks was recorded. This section describes the sites identified to be of potential concern and provides a detailed explanation of the reason these sites are not considered to be potential PCB sources or to explain why further sampling and characterization is recommended. The sites not described in this section were not identified as potential sources of PCBs because transformers have been removed or replaced, the buildings have been demolished, previous sampling determined there were no PCB-impacted materials, and/or site inspections determined there were no signs of staining or other conditions to suggest potential PCB impacts.

Historically, the transformers on the installation were owned and operated by Fort Myer and Henderson Hall. However, in 2007, operation of the Installation's electrical distribution system including transformers was assumed by Dominion Virginia Power, who now operates and maintains the transformers. When this transfer of operation occurred, the Dominion's contract stated that all PCB transformers contained less than 50 ppm.

Building 301: Historic transformers were removed and replaced by a current transformer in December 2012. The inspection of the current transformer found that there was no indication of leaking. In 1988, a leak was detected from a historic transformer. It was determined that the transformer had been leaking for five years and that much of the soil surrounding it was PCB-impacted. In a 1990 site plan, a plan was outlined to test the pad and area for PCBs and remediate the area as needed. However, no documentation was found to confirm that this activity was completed. This area has also undergone construction over the years. It is unlikely this area is a current source of PCB impacts to surface water given the time since the leak occurred and the amount of soil disturbance that has occurred at the site. It is expected that even if this area was not remediated as planned, any impacted soil or materials that had existed would have been removed by construction activities.

Building 403: Three historic transformers were previously located in Building 403 on concrete surfaces. Previous wipe samples were collected in 1996. Remediation of this building was completed as of March 1993, but subsequent wipe samples showed that additional remediation was required. Documentation of this remediation was not found. However, the PCB impacts appear to have been limited to the concrete surfaces underlying the pad with no indication that underlying soils were impacted. The building has since been demolished and since the transformers were in the building and the building has been removed, there is no current source of PCBs at this site.

Building 406: Three historic transformers were previously located in Building 406 on concrete surfaces. Remediation of this building was completed as of March 1993, but subsequent wipe samples showed that additional remediation was required. Documentation of this remediation was not found. However, the PCB impacts appear to have been limited to the concrete surfaces underlying the pad with no indication that underlying soils were impacted. It was determined that two of the transformers were removed prior to 2007 and the third one was discovered in the basement of Building 406. This transformer was removed in 2009 and the building has since been demolished. Since the transformers were in the building and the building has been removed, there is no current source of PCBs at this site.

Building 410: There was a historic transformer in this building, which was replaced by a new transformer. The site inspection found no evidence of leaks from the new transformer. Remediation was completed in the area around the historic transformer in 1993 presumably related to a transformer leak, but subsequent sample results indicated that additional remediation

was required in one area. A sampling plan noted that this area would be remediated by removing one inch of the concrete floor, as well as the concrete curb adjacent to the transformer. No documentation was found to confirm that this was completed; however, the building has since been demolished and the impacted concrete removed. Since the transformers were in the building and the building has been removed, there is no current source of PCBs at this site.

Building 270/273: The transformer at Building 273 was listed as Building 270 Dog Kennels in the 1996 Inventory. The 2016 site inspection found some corrosion at the bottom of the transformer and some staining of indeterminate source. Since the nature and age of the staining could not be determined, this site could not be ruled out as a potential source of PCB impacts, stormwater runoff characterization was recommended in the 2016 Action Plan. This site was included in the sampling analysis plan.

Child Development Center and surrounding areas: The Child Development Center (CDC) (Building 483) is a new building that was constructed in the location of former burn areas at the Installation. These areas, known as the north and south burn areas, were historically used to burn waste materials such as wood and paper. Sampling conducted of these areas as part of remediation efforts found a maximum PCB concentration of 34 ppm, exceeding the USEPA PCB cleanup levels for non-restricted access areas (10 ppm).

The area to the north and northwest of Building 483 was formerly occupied by Building 501 and a playground area. The building and playground have been removed and these areas are currently grassy fields. The playground area was remediated in 1984-1985, when 200 cubic feet of PCB-impacted sand and soil were excavated and replaced with clean fill (clay and loose sand). The area northeast of Building 501 was a former sanitary landfill that contained PCB-impacted soils. Surface soil samples collected in 1984 found a concentration of 2.24 ppm, which is below the USEPA PCB cleanup levels for non-restricted access areas (10 ppm).

Soil samples were also previously collected from the area east of former Building 501 that is currently occupied by a parking lot for the Rader Health Clinic and ballfield area. None of these samples had PCB concentrations that exceeded the USEPA PCB cleanup levels for non-restricted access areas (10 ppm).

This area is not anticipated to be a significant source of PCBs in stormwater runoff given that PCB-impacted soils in these areas were either remediated or concentrations were found to be below EPA cleanup levels, and that a substantial amount of construction and demolition has occurred in these areas. However, given the large size of the area and the history of PCB impacts, stormwater runoff characterization was recommended in the 2016 Action Plan and this site was included in the sampling analysis plan.

4.4 Best Management Practices (BMPs) Analysis and Implementation Plan

Best management practices (BMPs) are control measures used to reduce pollution in stormwater and surface waters. BMPs can be temporary, such as silt fences used to control sediment pollution from active construction sites, or permanent, such as detention basins used to manage runoff from a parking lot.

BMPs can also be structural or nonstructural. Structural BMPs are physical controls designed to divert, contain, treat, reuse, or otherwise manage stormwater runoff to reduce pollutants in stormwater discharged from the site. Examples of structural BMPs include vegetation controls (rain gardens, bioretention areas), infiltration systems, detention basins, retention basins, oil/water separators, and pervious surfaces (pavers, porous pavement).

Non-structural BMPs are operational practices intended to improve stormwater quality by minimizing or eliminating the potential contact of pollutants with runoff at or near their source.

Examples of nonstructural BMPs include public education, good housekeeping practices, preventative maintenance, spill prevention and response procedures, and routine inspections.

4.4.1 BMP Evaluation

The structural control measures currently implemented at the Installation to control the discharge of pollutants primarily include oil/water separators (OWSs), stormwater detention ponds, sand filter systems, and bioretention systems. The current non-structural control measures primarily include good housekeeping, preventive maintenance, spill prevention and response, and visual inspections. **Table 1** below lists structural and non-structural BMPs implemented at the Installation and evaluates whether they address PCB concerns, and provides recommendations for addressing PCBs where applicable.

Table 1. Evaluation and Recommendation of Existing BMPs at JBM-HH

General BMP Description	Evaluations and Recommendations
Structural Controls	
Detention basins – treats stormwater from vehicle parking, exterior material storage, and fueling areas; helps to manage the quantity of runoff.	**Evaluation:** If located in an area downgradient from a potential PCB source, any BMP designed to promote settling and retention of sediment could help in limiting the transport of PCB-contaminated soil. **Recommendation:** None
Oil/water separators – most trench drains and floor drains are connected to the OWSs, which then discharge to the sanitary sewer system. One OWS treats runoff from a vehicle fueling station and discharges to a detention basin.	**Evaluation:** In general, this BMP does not apply to the PCB TMDL. **Recommendation:** None
Sand filter systems – treats stormwater from vehicle parking and exterior material storage areas; often connected to underground detention basins; filters out sediment, grease, and other vehicle fluids from the runoff.	**Evaluation:** If located in an area downgradient from a potential PCB source, any BMP designed to promote settling and retention of sediment could help in limiting the transport of PCB-contaminated soil. **Recommendation:** None
Roof cover – over fueling areas and equipment, limits stormwater exposure for potential pollutant sources.	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Bioretention systems (includes tree filter boxes) – treats stormwater primarily from roadway areas; filters out sediment, grease, and other vehicle fluids from the runoff	**Evaluation:** If located in an area downgradient from a potential PCB source, any BMP designed to promote settling and retention of sediment could help in limiting the transport of PCB-contaminated soil. **Recommendation:** None

Table 1. Evaluation and Recommendation of Existing BMPs at JBM-HH

General BMP Description	Evaluations and Recommendations
Non-structural Controls	
Perform Illicit Discharge Detection and Elimination Procedures	**Evaluation:** Not likely to detect PCBs since procedures rely on visible indicators of pollutants; however, eliminating sources of sediment discharges detected by the program could help limit the transport of PCB-contaminated soil. **Recommendation:** None
Indoor vehicle maintenance activities and equipment/material storage – eliminates stormwater exposure for potential pollutant sources.	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Regular inspections – helps to identify leaks, spills, and potential pollution sources to reduce the potential impact to stormwater; inspections of industrial areas are currently performed quarterly.	**Evaluation:** Regular inspections could identify releases of potentially PCB-containing materials. **Recommendation:** Train inspectors about potential PCB-specific sources (e.g., leaking transformer).
Spill kits available – located near vehicle maintenance and fueling areas; kits include booms and absorbent material.	**Evaluation:** Spill kits could help prevent future potential PCB contributions by ensuring timely containment and cleanup of future spills. **Recommendation:** None
Good housekeeping – performed throughout the installation; reduces possibility of accidental spills; includes routine sweeping and cleanup, use of drip pans and absorbent materials; regular waste disposal, and proper storage of materials.	**Evaluation:** Good housekeeping measures could aid in identifying PCB release or potential release, including the need to repair or remove potential sources (e.g., transformers). **Recommendation:** Train staff about potential PCB-specific sources (e.g., leaking transformer).
Use of water-tight dumpsters, waterproof storage cabinets/sheds for outdoor material storage – located throughout the installation; minimizes stormwater exposure for potential pollutant sources.	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Preventative Maintenance – includes the regular inspection and maintenance of stormwater control structures, equipment, and systems.	**Evaluation:** Regular maintenance of stormwater control measures that promote settling and retention of sediment could help in limiting the transport of PCB-impacted soil. **Recommendation:** None

Table 1. Evaluation and Recommendation of Existing BMPs at JBM-HH

General BMP Description	Evaluations and Recommendations
Filling operations of USTs and ASTs are monitored by facility personnel – ensures that the tanks are filled properly and any spills are cleaned up immediately and appropriately.	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Public education and outreach programs regarding the protection of stormwater.	**Evaluation:** Public education and outreach programs regarding the protection of stormwater provide an opportunity to increase awareness of PCBs and the PCB TMDL at Fort Myer. **Recommendation:** Develop an information sheet that includes: basic facts about PCBs and the PCB TMDL, a summary of PCBs at the Installation, what has been done to eliminate PCB contamination, and what an individual should do if they observe a condition such as a leaking transformer that could be a source of PCBs.

4.4.2 Site Specific BMP Analysis

Although not specifically in place to address PCB issues, JBM-HH has a variety of structural stormwater and erosion control BMPs in place. Many of these, mostly those that are aimed at reducing the erosion and transport of sediment, may limit the transport of PCB-contaminated soil. These include natural vegetation, detention basins, sand filter systems, vegetated swales, and bioretention systems. Non-structural BMPs, such as regular inspections and maintenance of structural BMPs and good housekeeping measures throughout the installation, also may aid in reducing the potential for PCB releases.

Stormwater discharges from the area surrounding Building 270/273 Dog Kennels transformer that was observed with unidentified staining is treated by structural stormwater BMPs. The transformer is surrounded by a well-vegetated, grassy area, which would limit the transport of any soil that may be or become contaminated by PCBs. This area drains to a dry detention basin, which promotes settling of sediments.

The CDC (Building 483), which is in the location of the former south and north burn areas, has a large building that occupies most of the former burn areas and is surrounded by vegetated and paved areas. The area to the east of the CDC is mostly occupied by a large parking lot. The area to the north of the parking lot is a maintained ballfield, and the area to the north of the CDC, the former Building 501 and playground, is a well-vegetated area. Buildings and paved areas essentially act as a cap preventing soils from eroding. If well maintained, the vegetated, grassy areas should prevent erosion.

4.4.3 BMP Recommendations Summary and Implementation Plan

General BMPs recommended for implementation, the schedule for implementation and reporting, and the status of the BMP implementation as of the 2023 Action Plan Update are provided in **Table 2** below. The status of PCB-focused BMPs has also been included in the MS4 Annual Reports.

Table 2. BMP Implementation Progress

BMP Description	Implementation and Reporting Schedule	Progress as of 2023
2013-2018 Permit Term BMPs		
Develop a fact sheet that includes the following: • Basic facts about PCBs and the PCB TMDL • Summary of history of PCBs at Fort Myer • Steps taken to eliminate PCB contamination • Steps one should take if they observe oil leaking from a transformer Make fact sheet available through housing occupant orientation, annual training on the Stormwater Pollution Prevention Plan (SWPPP) installation operations and maintenance training materials.	Fact sheet development will begin during the 2016-2017 reporting cycle. The fact sheets will be available by then end of the 2016 calendar year. Status of development and implementation will be summarized in Annual Reports.	To reach a wide audience of base-wide residents, employees, and military personnel (current and retirees) that utilize the services at JBM-HH, an article about PCBs and the PCB TMDL Action Plan was prepared and published in the widely-read base newspaper, *The Pentagram*. The article was published on March 7, 2017 and is included as **Appendix D**. Additionally, training slides were developed to address these PCB topics and were included in the annual SWPPP Training provided to employees at JBM-HH and brochures geared towards residents on base and new hires were updated to include information on PCBs (included as **Appendix E**). These brochures are distributed on a regular basis.
Continue to perform routine maintenance, as required, of BMPs that may help to control PCBs, such as detention basins.	To be augmented as needed to address potential PCB-impacted discharges. Routine maintenance performed will be summarized in Annual Reports.	Routine maintenance of systems and BMPs that may help control PCBs is scheduled and performed as needed. JBM-HH has contracted with USACE to conduct annual inspections of all aboveground and underground structural BMPs at the Installation, which will more quickly identify issues and allow them to be addressed.
Develop PCB sampling plan to comply with PCB TMDL requirements.	Completed and provided as part of this Action Plan. Results from sampling will be included in Annual Report.	Three outfalls were identified in areas with historic PCB use for sampling. To date, all of the outfalls have been sampled twice. PCBs were detected in the most recent sample collected from Outfall 012. JBM-HH is in the process of coordinating additional sampling to investigate this further. Additional details are provided in Section 5.
Modify existing stormwater pollution prevention training materials for municipal operations to include a section on identifying and reporting potential PCB leaks.	New training language to be developed during the 2016-2017 reporting cycle. Inclusion of PCB section in training materials will occur early 2017. Status of development and implementation will be summarized in Annual Reports.	Annual stormwater pollution prevention training materials for Public Works employees were modified in 2017 to include PCB TMDL awareness, PCB source identification, and reporting information.

2018-2023 Permit Term BMPs		
Update stormwater pollution prevention brochures to include basic facts about PCBs and the PCB TMDL and steps one should take if they observe oil leaking from a transformer. Distribute the brochures to new hires employed at JBM-HH.	Brochure will be updated and distributed through New Hire Packets in 2020.	Due to operational changes caused by the Covid-19 pandemic, new hire packets are no longer distributed. Instead, a stormwater pollution prevention brochure geared towards employees was updated to include information on PCBs. These brochures have been distributed to staff at various facilities on base during EMD's multi-media environmental compliance inspections on base. Additionally, an article published in The Pentagram on July 2, 2022, on recognizing and reporting potential pollution concerns so that they may be promptly addressed included guidance on transformer leaks (included as **Appendix F**).
Continue to perform routine maintenance, as required, of BMPs that may help to control PCBs, such as detention basins.	To be augmented as needed to address potential PCB-impacted discharges. Routine maintenance performed will be summarized in Annual Reports.	Routine maintenance of systems and BMPs that may help control PCBs is scheduled and performed as needed. JBM-HH has contracted with USACE to conduct annual inspections of all aboveground and underground structural BMPs at the Installation, which will more quickly identify issues and allow them to be addressed. JBM-HH has also established a Stormwater Management Facility (SMF) Maintenance Contract through NAVFAC Washington to conduct routine and non-routine maintenance on the majority of JBM-HH's BMPs during CY2023. As of May 2023, maintenance activities are ongoing. This contract will help to ensure proper routine maintenance of BMPs, as well as prompt addressing of issues noted during annual BMP inspections.
Gain access to Outfall 012 and complete second sampling event as described in Section 5.	As of 2020: Access is currently being coordinated and sampling will occur as soon as possible.	The second sampling event has been completed for Outfall 012. PCBs were detected in this sample and JBM-HH is in the process of coordinating additional sampling to investigate this further. Additional details are provided in Section 5.
Continue to provide information on identifying and reporting potential PCB leaks during the annual stormwater pollution prevention training for municipal operations staff.	The training slides have been completed and will continue to be used during annual training sessions.	Annual stormwater pollution prevention training materials for Public Works employees were modified in 2017 to include PCB TMDL awareness, PCB source identification, and reporting information. This training is provided annually, with the most recent training sessions conducted on March 29 & 30, 2023.

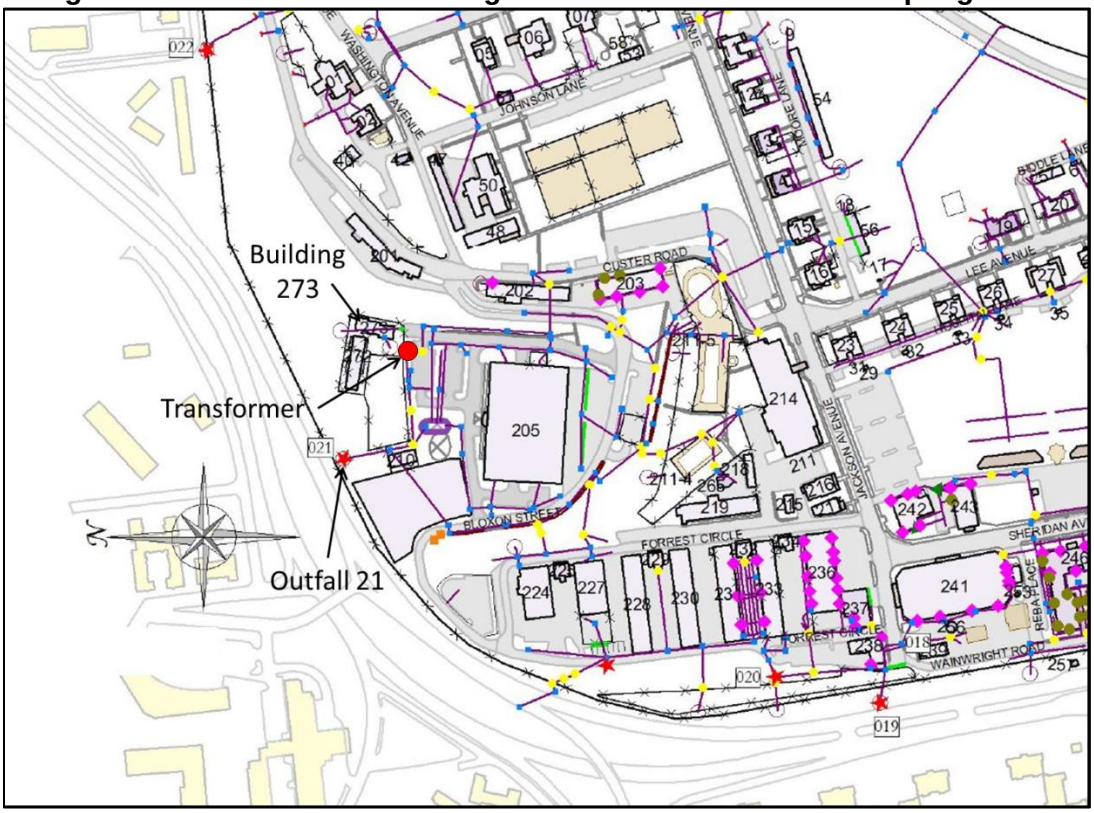
5.0 SAMPLING AND ANALYSIS PLAN

To comply with the MS4 permit, this plan documents the proposed sampling plan developed in 2016 for stormwater runoff from areas surrounding the transformer by Building 270/273 as well as the area surrounding the CDC. Results from the planned sampling have been documented in the MS4 Annual Reports and are included below in **Section 5.2**.

5.1 2016 Sampling Plan

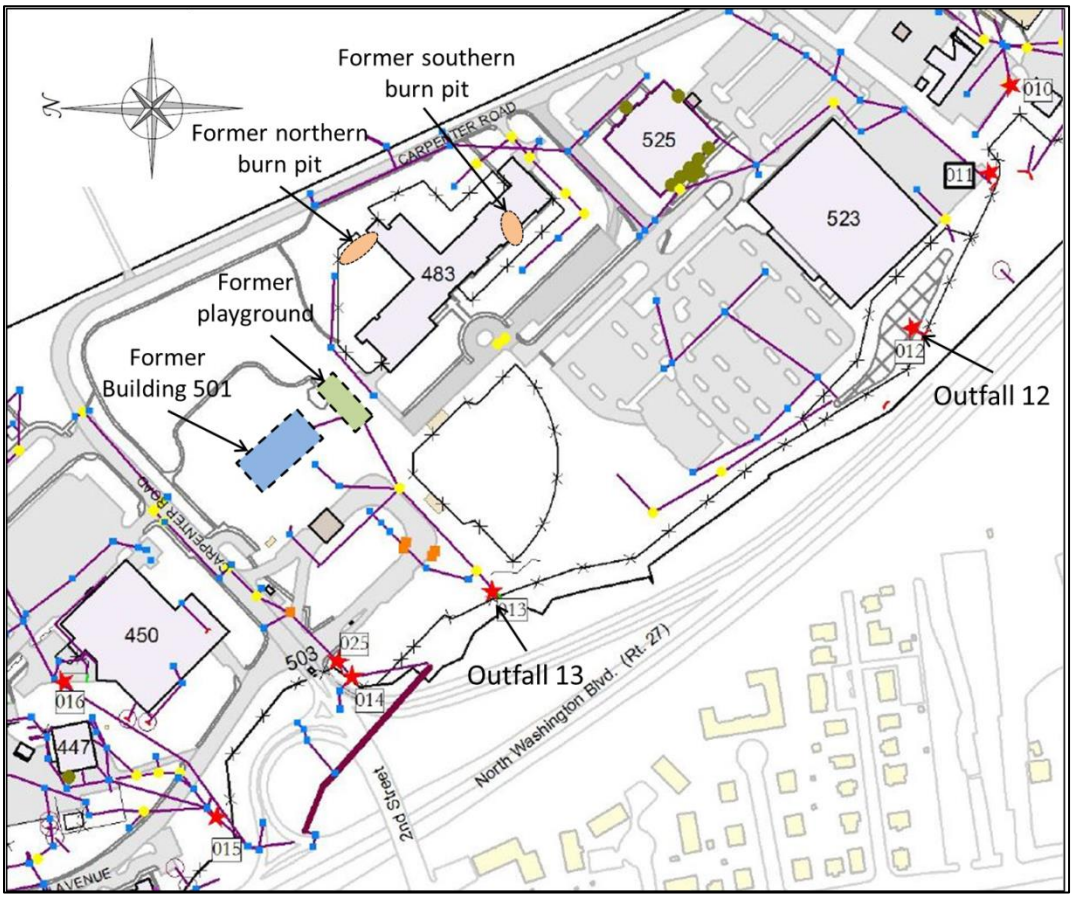
Site access for sampling will be coordinated with facility staff. Stormwater runoff will be collected at stormwater Outfall 21 from two storm events to assess the runoff from the area of the transformer at Building 270/273 (Dog Kennels). **Figure 3** below shows the transformer and Outfall 21 locations.

Figure 3. Transformer at Building 270/273 and Outfall 021 Sampling Point



Stormwater runoff will also be collected from stormwater Outfalls 12 and 13 from two storm events to assess the area surrounding the CDC. **Figure 4** below shows the locations of the former northern burn pit, southern burn pit, Building 501, and playground.

Figure 4. Area Surrounding Child Development Center and Outfalls 12 and 13 Sampling Points



These locations will be sampled during two wet events. These events must occur at least 72 hours from the previously measured (>0.1 inch) storm event, and the storm event during which sampling occurs must yield at least 0.1 inch of precipitation. One grab sample will be collected from the outfalls during each sampling event. The samples must be collected during the first 30 minutes of discharge, or within the first hour if the first 30 minutes is impractical.

For each sample, a volume of at least 2 liters, but ideally 4 liters, of unfiltered water will be collected directly into one 4-liter amber glass jar. All sampling bottles will be laboratory supplied and must be certified pre-cleaned and PCB-free with Teflon lined caps. While collecting the sample, the cap will be temporarily placed in aluminum foil and immediately returned to the bottle once the sample is collected. As recommended by the VADEQ, duplicate samples and field blanks will be collected.

All sample bottles will be labeled and placed on ice in a hard-sided shipping cooler and chilled to <6°C. Sample bottles will be wrapped in bubble wrap and secured to prevent breakage or sample loss and shipped to the laboratory completing the analysis immediately following the sampling event. Coolers will be sufficiently packed with ice to ensure the temperature is maintained at < 6°C for shipment to the analytical laboratory.

All samples will be recorded on a laboratory provided Chain-of-Custody form, sealed in a waterproof bag (i.e., sealable freezer bag), and taped to the inside of the cooler lid. The coolers will be sealed and shipped to the laboratory for immediate analysis by EPA Method 1668, which is capable of detecting low-level concentrations of all 209 PCB congeners. Individual congeners

are summed to form total PCB. The samples will be analyzed by Phase Separation Science, a Virginia Environmental Laboratory Accreditation Program certified laboratory included in the VADEQ list of laboratories, performing low level PCB congener analysis (EPA Method 1668).

Method Number/Analysis	EPA Method 1668/PCB
Preservatives	< 6°C immediately
Analytical Holding Time	365 days
Sample Volume Container	$\geq$ 2 liters $\leq$ 4 liters 1 4-liter Amber Glass Bottle

The Annual Report will include a characterization of the discharges and an estimate of annual PCB loading in stormwater discharges based on precipitation records and land uses and the quantity of PCBs. The report will also include recommendations for further characterization or remediation, if necessary.

5.2 Sampling & Analysis Plan Implementation Progress

Implementation of the Plan began in Fall 2016 with the preparation for the PCB sampling and coordination with the analytical laboratory. The first sampling event occurred on 11 May 2017. PCB concentrations were not detected in discharges from any of the three outfalls included in the sampling plan. A second qualifying rain event that produced flow from the three outfalls did not occur by the end of 2017. The next sampling event occurred on April 24, 2018, when flow was produced from Outfall 021. PCB concentrations were not detected in the sample. Outfall 013 was sampled on August 21, 2018, and laboratory results indicated PCB concentrations were not detected in the sample.

Access to Outfall 012 was interrupted with security activities related to the new perimeter security fence installation on base. The final sampling event for Outfall 012 was conducted on August 30, 2022. Sampling and summarized analysis results are presented in the tables below:

STORM EVENT:

Date	Duration		Rainfall total (in.)	Preceding Event	
	Hrs	Min		Days	Hrs
22-Aug-30	1	0	0.2	8	21

Monitoring Date: August 21, 2018

Outfall ID	Units	Date Sampled	Time Sampled	Total PCBs*
Outfall 012	ug/L	30-Aug-22	5:10 PM	0.0018
Field Duplicate (Outfall 012)	ug/L	30-Aug-22	-	0.0077

*Total breakdown of PCB results is included as Appendix G.

6.0 ADDITIONAL INVESTIGATION PLAN

The complete results from the August 2022 Outfall 012 PCB monitoring are shown in the Laboratory Report attached as **Appendix G**. Based on the known historical presence of PCBs in this area as indicated in Section 4, and the detections of PCBs at low concentrations in the

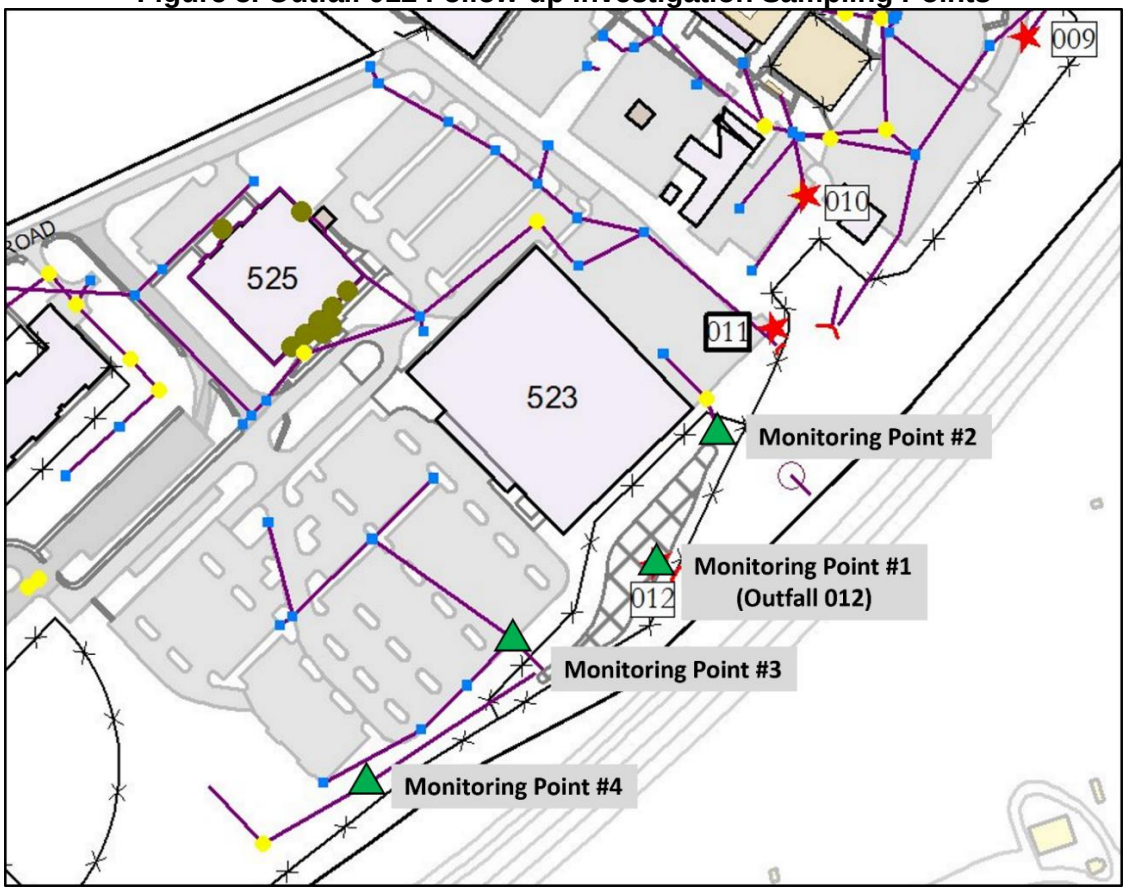
sample collected from Outfall 012 during the August 2022 monitoring event, JBM-HH is currently in the process of coordinating additional investigation and sampling in this area.

JBM-HH EMD plans to collect stormwater samples from three inlets located upgradient from the Long Branch Detention Basin and associated Outfall 012, where the PCBs were detected in August. These three stormwater inlets discharge to Outfall 012 and would therefore help to narrow down the potential source of PCBs. EMD will collect an additional sample from Outfall 012 concurrent with the inlet samples for correlation and to provide an additional set of data points. The four monitoring points are shown in **Figure 5** below.

Samples collected from these monitoring points, as well as one duplicate and one field blank, will be analyzed using EPA Method 1668.

JBM-HH EMD has been working to obtain funding to complete this sampling. Due to the costs of the additional sampling and limitations on funding and contract vehicles, EMD has been working with Fort Detrick to set up the sampling under one of their contract vehicles. The contract was originally expected to be awarded in March 2023, but delays in contracting have pushed this date to August 2023, at which time EMD will coordinate the sampling event. Depending on the analytical results of the upcoming sampling event, additional investigation may be deemed warranted (either through additional stormwater sampling and analysis or through the sampling and analysis of building materials). If a PCB source is identified on the Installation, EMD will investigate potential mitigation methods and develop and implement a mitigation plan.

Figure 5. Outfall 012 Follow-up Investigation Sampling Points



7.0 CONCLUSIONS AND GENERAL PERMIT REISSUANCE

The transformer at Building 270/273 and the CDC and surrounding areas were the two sites selected for stormwater runoff sampling at the time of the initial assessment in 2016. Based on historical records review, the removal or replacement of old transformers, and the 2016 site inspection results, the remaining historical PCB locations identified in 2016 are unlikely sources of PCB contamination to surface water.

Based on sampling events conducted for the area around the former transformer at Building 270/273, analytical results indicated that the drainage has not been impacting stormwater runoff with PCBs.

Based on the detections of PCBs at low concentrations in the sample collected from Outfall 012 during the August 2022 monitoring event, JBM-HH is currently in the process of coordinating additional investigation and sampling in this area, as described above in Section 6. Once this investigation is complete, this Action Plan will be updated with the results.

No new potential sources of PCBs have been identified on the Installation through reviews and monitoring of proposed projects. Due to the restrictions in the manufacturing, processing, distribution, and use of PCBs, it is assumed that any new transformers installed on base will contain non-PCB oils. As required by the permit, VADEQ will be notified in writing within 30 days if a previously unidentified significant source of PCBs is discovered at JBM-HH.

Stormwater outreach materials and training slides will continue to include information on PCBs and structural BMPs will continue to be inspected on a regular basis to ensure proper functionality. Additionally, site inspections will continue to include transformers in order to identify signs of leakage.

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Appendix A – JBM-HH 2021 Stormwater Policy

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DEPARTMENT OF THE ARMY
JOINT BASE MYER – HENDERSON HALL
204 LEE AVENUE
FORT MYER, VIRGINIA 22211-1199

AMIM-MHP-E

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Joint Base Myer-Henderson Hall (JBM-HH) Policy Memorandum PW-9, Stormwater Policy

1. REFERENCES.

a. General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, Permit No. VAR040068 (Effective Date: 1 Nov 18, Expiration Date: 31 Oct 23).

b. Federal Water Pollution Control Act (The Clean Water Act) (enacted in 1948, amended in 1972).

c. Energy Independence and Security Act (EISA), Section 438, 4 Jan 07.

d. National Pollutant Discharge Elimination System (NPDES), 40 CFR Part 122, revised 12 Jun 19.

e. Executive Order 13834, Efficient Federal Operations, 17 May 18.

f. Executive Order 13508, Chesapeake Bay Protection and Restoration, 12 May 09.

g. Chesapeake Bay Preservation Area Designation and Management Regulations, 9VAC25-830, 23 Oct 13.

h. Virginia Erosion and Sediment Control Regulations, 9VAC25-840, 23 Oct 13.

i. EPA NPDES General Permit for Discharges from Construction Activity, 16 Feb 19, as amended 27 Jun 19.

j. Virginia Stormwater Management Program Regulation, 9VAC25-870, 26 Feb 14.

k. Virginia General Permit for Discharges of Stormwater from Construction Activities, 9VAC25-880, 1 Jul 19.

l. Environment, Safety, and Occupational Health, 4715.1E, 31 Aug 18.

m. Environmental Protection and Enhancement, AR 200-1, 13 Dec 07.

2. PURPOSE. This memorandum sets forth the JBM-HH policy governing stormwater pollution prevention. The policy guidance provided in the enclosure outlines proper protocols for minimizing stormwater pollution during activities that directly and indirectly impact stormwater.

3. APPLICABILITY. This policy is applicable to all military and civilian personnel and contractors who live, work, or are authorized access to the JBM-HH community.

4. POLICY & PROCEDURES. All actions on JBM-HH shall comply with applicable regulations and policy set forth in the attached policy and procedures enclosed with this policy memorandum.

5. PROPONENT. The JBM-HH Directorate of Public Works, Environmental Management Division is the proponent for this policy. The POC is the Environmental Management Chief at (703) 696-8055.

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Encl

DAVID D. BOWLING
COL, SF
Commanding

DISTRIBUTION:
I

Stormwater Management Procedures
Joint Base Myer-Henderson Hall

1. PERMITS AND APPLICABLE REGULATIONS.

a. Permits: General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), Permit No. VAR040068 (Effective Date: 1 November 2018, Expiration Date: 31 October 2023)

b. Applicable Regulations: In addition to the permit named above, the Stormwater Program must comply with federal and state regulations, and Department of Defense and Department of the Army policies, including the following:

(1) Federal:
- (a) Federal Water Pollution Control Act (The Clean Water Act).
- (b) Energy Independence and Security Act (EISA), Section 438.
- (c) Executive Order 13834, Efficient Federal Operations.
- (d) Executive Order 13508, Chesapeake Bay Protection and Restoration.
- (e) National Pollutant Discharge Elimination System, 40 CFR Part 122.
- (f) EPA NPDES General Permit for Discharges from Construction Activity.

(2) Virginia:
- (a) Chesapeake Bay Preservation Area Designation and Management Regulations, 9VAC25-830.
- (b) Erosion and Sediment Control Regulations, 9VAC25-840.
- (c) Virginia Stormwater Management Program Regulation, 9VAC25-870.
- (d) Virginia General Permit for Discharges of Stormwater from Construction Activities, 9VAC25-880.
- (e) Virginia General VPDES Permit for Discharges from Small Municipal Separate Storm Sewer Systems, 9VAC25-890.

(3) District of Columbia
- (a) 2013 Rule on Stormwater Management and Soil Erosion and Sediment Control, Chapter 5 of Title 21 of the District of Columbia Municipal Regulations (DCMR), §§ 546, 547, and 552

(4) Department of Defense:
- (a) Environment, Safety, and Occupational Health, 4715.1E

(5) Department of the Army:
- (a) Environmental Protection and Enhancement, AR 200-1

2. POLICY & PROCEDURES.

a. Stormwater runoff at Fort Myer and Henderson Hall flows to JBM-HH's storm sewer system, which is permitted by the Virginia Department of Environmental Quality (DEQ) as a small MS4 under the VPDES permit.

(1) Stormwater runoff at Fort McNair is not regulated by a specific permit; instead, stormwater from Fort McNair flows directly into the Potomac River or to the District of Columbia's MS4, which is permitted by the US Environmental Protection Agency (EPA). The Department of Energy and Environment (DOEE) has oversight of the MS4 and has the authority to take measures that reduce pollutants at the source, by inspecting facilities and issuing notices of violation, fines, and penalties for noncompliance with the District of Columbia's stormwater regulations.

(2) These permits and the District of Columbia's stormwater regulations serve as the basis for JBM-HH's Environmental Management Division (EMD) Stormwater Program duties. The Stormwater Program is responsible for maintaining compliance with permit conditions; however, compliance with permit conditions requires cooperation from other Directorates and Installation entities, as well as the Installation's residents, employees, and visitors. See Section 1.b for applicable regulations.

b. The following pollution prevention measures will be implemented to protect surface waters that receive stormwater discharges from JBM-HH:

(1) Illicit Discharges**.** JBM-HH's stormwater permit allows only stormwater into its storm sewer system. With a few exceptions, materials other than stormwater discharged to the storm drain system are called illicit discharges and are strictly prohibited.

(a) Any sort of dumping or disposal of material into a storm drain is considered an illicit discharge. Illicit discharges may be deliberate or unintentional and can occur at any time. Illicit discharges can range from oil spills to muddy runoff or tracked sediment to a sanitary sewer cross-connection, all allowing pollutants to enter the storm sewer system.

(b) EMD will investigate illicit discharges; however, residents, employees, and visitors should notify EMD when they observe an illicit discharge occurring. Examples of reportable incidents include:

1. Any flow observed 72 hours or more after the last rain event.
2. Muddy runoff or tracked sediment, especially near a construction site.
3. Washwater from vehicle and equipment washing (other than residents' personal vehicles).
4. Spilled or dumped chemicals or waste materials (dry or wet) that are entering a storm drain.
5. Pet wastes.

(c) Exceptions to the illicit discharge rule include water from firefighting activities; hydrant and potable water line flushings; irrigation water from landscape watering; and groundwater or spring water. Any concerns or suspected illicit discharges should be reported to EMD for further investigation.

(2) Vehicle Washing**.** Vehicle washing generates washwater that may be contaminated with grease, oil, fuel, dusts and residues, soaps, and other pollutants, which then flow untreated into storm sewer systems and waterways.

(a) JBM-HH residents may wash personal vehicles in residential areas of the Installation, but when possible, shall use the commercial vehicle wash at Henderson Hall or the vehicle wash rack at Fort McNair, which filters washwater before discharging water to the sanitary sewer system.

(b) JBM-HH's stormwater permit explicitly prohibits the discharge of washwater associated with municipal vehicle washing operations to JBM-HH's storm sewer system. Municipal vehicles include:

1. JBM-HH police cars.
2. JBM-HH fire trucks and engines.
3. Military vehicles.
4. Public Works vehicles.
5. Public Works equipment.
6. Buses.
7. Contractor vehicles and equipment.
8. All other vehicles designated for official government use at JBM-HH.

(3) Spills and Leaks.

(a) Every precaution should be taken when working with chemicals and materials outdoors so that spills are minimized. When they occur, respond to spills and leaks immediately to keep spilled material from entering the storm drain system. Spill kits are located at the AAFES fueling station for spill clean-up and in various workshops for employees' use.

(b) All spills and leaks are required to be reported to EMD for proper cleanup. Emergency spills and leaks involving hazardous substances should also be reported to Emergency Services by calling 911.

(4) Construction Projects**.** During their planning phase, construction projects of all sizes are required to consider their potential impacts to stormwater and adhere to the following guidelines to minimize stormwater pollution. Residents, employees, and visitors observing any stormwater incidents stemming from construction projects (e.g. runoff during dry weather, excessive sediment, trash and litter, concrete washout) should contact EMD.

(a) Fort Myer and Henderson Hall.

1. Stormwater discharges from construction must be minimized by using erosion and sediment controls and protective barriers around disturbed land and stockpiles. Projects disturbing 10,000 square feet of land or more (or 2,500 square feet of land or greater in areas designated under the Chesapeake Bay Preservation Act) must submit an Erosion and Sediment Control Plan to the Virginia DEQ for review and approval. Projects disturbing one acre or more must submit a Stormwater Management Plan to the Virginia DEQ for approval, develop a stormwater pollution prevention plan (SWPPP), and apply for a Construction General Permit. Virginia DEQ must approve Erosion and

Sediment Control Plans, Stormwater Management Plans, and SWPPPs and/or issue a Construction General Permit before land disturbing activities take place.

2. Any planned submittals to the Virginia DEQ must be submitted to the EMD for review at least 30 days prior to submission to Virginia DEQ. All construction projects, regardless of size, are subject to inspection by EMD personnel. Access to the construction sites must therefore be granted to EMD personnel whenever inspections are conducted.

3. JBM-HH's stormwater permit requires qualified Installation personnel to conduct inspections of construction projects disturbing 10,000 square feet of land or greater (or 2,500 square feet of land or greater in areas designated under the Chesapeake Bay Preservation Act) to ensure appropriate controls have been implemented to prevent non-stormwater discharges to the MS4. Inspections must be conducted at the following intervals:

- During or immediately following initial installation of erosion and sediment controls;
- At least once per every two-week period;
- Within 48 hours following any runoff producing storm event; and
- At the completion of the project prior to the release of any performance bond.

4. EMD has the authority to require compliance through corrective actions to ensure E&S and pollution prevention controls are properly implemented and maintained according to the site-specific E&S Plans and SWPPP. The construction project manager will be notified of any deficiencies noted during the above-described inspections. The contractor and/or project manager must complete the required corrective actions by the deadline established by EMD. EMD personnel will conduct follow-up inspections to ensure the deficiencies were properly addressed.

5. EMD has the authority to implement enforcement actions, including but not limited to issuing a stop-work order until deficiencies in E&S and pollution prevention controls or other incidents of non-compliance with the approved plans, permits, or requirements set forth in this policy are addressed and proof of compliance is provided to EMD. EMD's enforcement authority applies to all construction projects on base, regardless of size.

(b) Fort McNair:

1. Stormwater discharges from construction must be minimized by using erosion and sediment controls and protective barriers around disturbed land and stockpiles. All projects are subject to the DOEE's soil erosion and sediment control regulations, except projects that disturb less than 50 square feet of land. DOEE must review and approve soil erosion and sediment control plans before land disturbing activities take place.

2. In addition to a soil erosion and sediment control plan, projects disturbing greater than 5,000 square feet of land must develop a Stormwater Management Plan, which must be submitted to DOEE for review and approval before land disturbing activities take place.

3. Projects disturbing one or more acres of land must develop a SWPPP and obtain coverage under the EPA NPDES Construction General Permit.

4. Any plans and/or permits must be submitted to EMD for review at least 30 days prior to submission to DOEE and EPA. All construction projects are subject to inspection by EMD personnel.

5. All construction projects are subject to inspection by JBM-HH EMD personnel. Access to the construction sites must therefore be granted to EMD personnel whenever inspections are conducted.

6. EMD has the authority to require compliance through corrective actions to ensure E&S and pollution prevention controls are properly implemented and maintained according to the site-specific E&S Plan and SWPPP. The construction project manager will be notified of any deficiencies noted during the above-described inspections. The contractor and/or project manager must complete the required corrective actions by the deadline established by EMD. EMD personnel will conduct follow-up inspections to ensure the deficiencies were properly addressed.

7. EMD has the authority to implement enforcement actions, including but not limited to issuing a stop-work order until deficiencies in E&S and pollution prevention controls or other incidents of non-compliance with the approved plans, permits, or requirements set forth in this policy are addressed and proof of compliance is provided to EMD. EMD's enforcement authority applies to all construction projects on base, regardless of size.

(5) Stormwater Best Management Practices for High-Priority Facilities.

(a) Operations at Fort Myer with higher potential of discharging pollutants include the following:

Building 306 – Directorate of Public Works (DPW) Sign Shop

Building 325 – DPW Roads & Grounds Shop

Building 447 – DPW Boiler Plant & Storage Yard

Building 314 – The Old Guard (TOG) Motor Pool

Building 330 – Directorate of Logistics TMP Motor Pool

(b) Stormwater pollutant prevention at each of these facilities is described in JBM-HH's SWPPP. The Directorate of Public Works and TOG are responsible for implementing the stormwater best management practices (BMPs) as described in the Installation's SWPPP. The EMD is responsible for maintaining and updating the Installation's SWPPP, conducting quarterly compliance inspections of industrial areas, and notifying DPW and TOG of deficiencies in BMP implementation at the high-priority facilities.

(6) General Stormwater Best Management Practices. The following BMPs should be implemented at Fort Myer, Henderson Hall, and Fort McNair where possible to prevent the pollution of stormwater:

(a) Recycle. Do not throw recyclable materials in the regular trash.

(b) Keep trash cans and dumpsters closed. Report leaking trash cans or dumpsters to EMD.

(c) Do not throw trash, including cigarette butts, on the ground.

(d) Have your vehicle maintained regularly.

(e) Do not top off your vehicle tank when refueling.

(f) Use commercial car washes that recycle washwater.

(g) Immediately clean up spilled materials.

(h) If you see a spill of oil or of a hazardous material, report it by calling 911.

(i) If you see a condition that is causing or could cause stormwater pollution, notify EMD.

(7) Contacting the Environmental Management Division. Report any conditions that could cause stormwater pollution to the Environmental Management Division's Stormwater Program at (703) 696-1222 or at usarmy.jbmhh.asa.mbx.fort-myer-fort-mcnair-stormwater-program@mail.mil. The Environmental Management Division is located in Building 321 at Fort Myer, along Marshall Drive.

Appendix B – Transformer Inventory

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Table B.1 –Transformers at JBM-HH Evaluated for PCB TMDL Action Plan

Location	Trans-former No.	ID Tag	Serial No.	Manufacturer	Oil Capacity (Gal.)	Size (kVA)	PCB Content
AC Pit (between Buildings 251 and 410)	TV-RF	C1018-AC46	DF10023164	Atlantic Power System	157	1000	None
AC Pit (between Buildings 251 and 410)	TV-RF	C1018- AC36	81309691846	ERMCO	-	1000	<50 ppm
Building 12 (Henderson Hall)	-	C1017-EK73	3466684614	Howard Industries	184	500	<50 ppm
Building 203	NTV-28	-	G-73522-1	Hevi-Duty	195	225	<50 ppm
Building 203	NTV-28	C1018-BH42	2286141512	Howard Industries	-	500	<1 ppm
Building 205	-	C1018-BH16	GF09295211	Atlantic Power System	270	750	None
Building 214	TV-1A	C1018-AG37	71109234656	ERMCO	-	750	<50 ppm
Building 216	NTV-12	C1C18-AG50	CP0750018190	-	-	300	<50 ppm
Building 219	NTV-11	C1018-AG38	A0808784833	ERMCO	208	750	7.4 ppm
Building 241	NTV-18	C1018-AF01	CP0750018187	Cooper	241	300	<50 ppm
Building 241	NTV-18	C1018-AF02	-	Cooper	241	750	<50 ppm
Building 241	-	C1018-AF00	11JC350850014	-	-	1000	<1 ppm
Building 242	-	C1018-AF55	-	ABB	-	300	<50 ppm
Building 248	NTV-17	C1018-XE62	A1109301611	ERMCO	208	750	<50 ppm
Building 25 (Henderson Hall)	-	C1017-FL63	-	-	-	-	<50 ppm
Building 251	NTV-16	C1018-AD32	3435413702	Howard Industries	-	500	<50 ppm
Building 26 (Henderson Hall)	-	C1017-FJ67	1480499090015	-	250	1500	<1 ppm
Building 270/273	-	C1018-BI21	GF09295212	Atlantic Power System	250	75	None
Building 28 (Henderson Hall)	-	C1017-FL26	-	-	250	-	<50 ppm
Building 280	-	C1018-AI11	CP1650000338	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI12	CP1650000114	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI22	CP1650000271	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI20	CP165000270	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI10	CP165000140	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI42	CP165000167	Cooper	-	-	<50 ppm

Location	Trans-former No.	ID Tag	Serial No.	Manufacturer	Oil Capacity (Gal.)	Size (kVA)	PCB Content
Building 280	-	C1018-AI33	CP165000115	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI23	CP165000361	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI34	CP165000362	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI53	CP165000168	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI44	CP165000517	Cooper	-	-	<50 ppm
Building 280	-	C1018-AI40	CP165000471	Cooper	-	-	<50 ppm
Building 29 (Henderson Hall)	-	C1017-GL40	14JC499090014	-	-	1500	<1 ppm
Building 301	NTV-26	C1018-HS01	AB 00J986281	-	-	500	<50 ppm
Building 307	-	C1018-EI00	-	-	-	-	<50 ppm
Building 313	TV-8	C1018-EI35	DF09263160	Atlantic Power System	295	750	None
Building 316	NTV-24	C1018-EI27	75H292205	Westinghouse	-	300	5 ppm
Building 325	-	C1018-EH89	GF09295214	Atlantic Power System	230	150	None
Building 330	-	C1018-EH44	-	-	-	-	<50 ppm
Building 330	-	C1018-EH44	-	-	-	-	<50 ppm
Building 400	TV-11	C1018-BD56	RHK-0597	Standard	385	1500	<1 ppm
Building 404	TV-3B	C1018-B230	DF10013162	Standard	166	750	None
Building 404	TV-3A	C1018-B220	3313672107	Howard Industries	302	300	<50 ppm
Building 405	TV-405	C1018-BC76	PGB-0160	Alstom	130	300	<50 ppm
Building 407	TV-9	C1018-BB83	RBC6453	Standard	285	750	2 ppm
Building 407	TV-7	C1018-BB46	CP095009535	Cooper	300	-	<50 ppm
Building 410	TV-410	C1018-AB58	DF09123159	Atlantic Power System	165	225	None
Building 411	TV-411	C1018-BC80	DF0410010	Sunbelt Transformers	179	300	None
Building 414	-	C1018-AA57	PAD-0422	GEC Alsthom	250	500	None
Building 415	-	C1017-B001	6140987291	ERMCO	-	750	<50 ppm
Building 416	TV-416	C1018-AB44	75L099019	Westinghouse	-	500	10 ppm
Building 421	-	C1018-AC92	6100951402	ERMCO	-	750	<50 ppm
Building 425	NTV-8	C1018-BB11	21309590566	ERMCO	195	300	<50 ppm
Building 430 (SE corner near pool)	-	C1018-BB32	L-707760	General Electric	74	75	5 ppm
Building 447	NTV-14	C1017-BO91	51409856650	ERMCO	168	300	5 ppm
Building 450	TV-10	C1017-CN25	946001823	Cooper	330	750	None
Building 451	TV-451	C1017-CO27	POH-0399	Standard	147	75	<50 ppm
Building 452	TV-452	C1017-CP10	830208-1	Balleau	106	112.5	5 ppm

Location	Trans-former No.	ID Tag	Serial No.	Manufacturer	Oil Capacity (Gal.)	Size (kVA)	PCB Content
Building 469 (former CDC)	NTV-9	C1018-BA53	G-73520	Hevi-Duty	162	112.5	-
Building 47	NTV-27	C1018-BH89	21209347861	ERMCO	208	750	<50 ppm
Building 480	TV-480	C1017-D038	41009034820	ERMCO	208	300	<50 ppm
Building 482	TV-30A	C1017-CP70	-	-	-	225	<50 ppm
Building 483	-	C1017-EM24	4707923907	Sunbelt Transformers	-	-	<50 ppm
Building 523	-	C1017-EK29	10JC328500009	-	-	1500	<1 ppm
Building 525	TV-6	C1017-EL50	4829634107	Howard Industries	-	750	<50 ppm
Building 59	NTV-20	C1018-BE28	2589593314	Howard Industries	67	1500	<50 ppm
Hatfield Gate VCP	TV-5	C1017-CN72	V-290019	Sunbelt Transformers	301	750	<50 ppm
Parking lot E of Building 405	TV-30	C1018-CC27	CP0750018189	Cooper	-	300	<50 ppm
Quarters 11	NTV-22	C1018-CG71	1534660903	Howard Industries	195	300	<50 ppm
Quarters 15	NTV-21	C1018-BF88	AB11JC329320019	-	-	300	<1 ppm
Quarters 19&21	NTV-19	C1018-CE09	-	ERMCO	-	300	<50 ppm
Quarters 23	NTV-29	C1018-BF08	AB085016040	ERMCO	208	300	<50 ppm
Quarters 7&8	NTV-23	C1018-CG70	2738532702	Howard Industries	-	-	<50 ppm
Wright Gate VCP	NTV-25	C0108-GI20	G-10735-2	Hevi-Duty	164	150	10 ppm

Table B.2 – Former Transformers (Decommissioned)

Location	Trans-former No.	ID Tag	Serial No.	Manufacturer	Oil Capacity (Gal.)	Size (kVA)	PCB Content
AC Pit (between Buildings 251 and 410)	TV-RF	-	44261	Square D	240	1000	>50%
Ball Field	-	-	MB1-2895	Standard	72	100	5 ppm
Ball Field	-	-	MB1-2896	Standard	72	100	<2 ppm
Building 203	NTV-28	C1018-BH42	86J0664265	Westinghouse	-	500	<1 ppm
Building 214	TV-1	-	8437177	Esco	378	700	1,000,000 ppm
Building 216	NTV-12	-	G-10694-2	Hevi-Duty	195	225	65 ppm
Building 219	NTV-11	C1018-AG37	7022552	Westinghouse	208	750	7.4 ppm
Building 219	NTV-11	-	7022552	Westinghouse	-	-	-
Building 241	NTV-18	-	G-73523-2	Hevi-Duty	211	300	5 ppm
Building 241	NTV-18	-	959001611	Cooper	241	500	None
Building 241	NTV-18	-	72L35001	Westinghouse	-	500	5 ppm
Building 248	NTV-17	C1018-XE62	G-10695-2	Hevi-Duty	211	300	25 ppm
Building 25 (Henderson Hall)	-	C1017-FL62	-	-	-	-	-
Building 251	NTV-16	-	G-10694-8	Hevi-Duty	195	225	55 ppm
Building 280	-	C1018-AI52/ CO1018-AI3200	-	-	-	-	-
Building 301	NTV-26	-	G-73523-1	Hevi-Duty	211	300	45 ppm
Building 301	NTV-25A/26	-	G-73529	Hevi-Duty	221	300	330 ppm
Building 301	NTV-26A	C0108-HJ10/11	2.089E+09	Square D	-	300	None
Building 301	NTV-26	-	70V5102	Vantran	-	37.5	10 ppm
Building 301	NTV-26	-	C-4549904	McGraw-Ed.	-	37.5	10 ppm
Building 301	NTV-26	-	C-622210	McGraw-Ed.	-	37.5	5 ppm
Building 313	-	-	70V2138	Vantran	-	167	>50%
Building 313	-	-	70V2136	Vantran	-	167	>50%
Building 313	-	-	70V2137	Vantran	-	167	>50%
Building 323	-	-	-	-	-	-	-
Building 325 (N parking lot)	-	-	-	-	255	300	-
Building 402	TV-2	-	F-958965	General Electric	74	300	>50%
Building 402	TV-2	-	F-958966	General Electric	99	500	>50%
Building 402	TV-2	-	DF10013161	Atlantic Power	204	500	None

Location	Trans-former No.	ID Tag	Serial No.	Manufacturer	Oil Capacity (Gal.)	Size (kVA)	PCB Content
				System			
Building 403	TV-4	-	177348	Standard	125	300	>50%
Building 403	TV-4	-	DF10033163	Atlantic Power System	196	750	None
Building 403	TV-4	-	177302	Standard	216	750	>50%
Building 404	TV-3C	-	176251	Standard	109	300	>50%
Building 404	TV-3B	C1018-BD31	DF10013162	Atlantic Power System	166	300	None
Building 404	TV-3A	C1018-BD21	PMF-0705	Standard	302	750	<2 ppm
Building 404	TV-3C	C1018-BD10	-	-	-	-	-
Building 405	TV-8	-	181691	Standard	140	300	-
Building 406	TV-7	-	F-963883	General Electric	90	300	>50%
Building 406	TV-7	-	F-963884	General Electric	160	750	>50%
Building 406	TV-7	-	DF10033165	Atlantic Power System	301	750	None
Building 410	-		20346-AO1	ITE	100	225	>50%
Building 414	-	C1018-AA32	-	-	-	-	-
Building 415	-	C1017-AO94	-	-	-	300	-
Building 423 (former Commissary)	NTV-15	-	G-72356	Hevi-Duty	195	750	75 ppm
Building 447	NTV-14	-	G-10695-3	Hevi-Duty	211	300	7,210 ppm
Building 448	NTV-10	-	G-10735-1	Hevi-Duty	164	150	<2 ppm
Building 448	NTV-10	-	G-73530	Hevi-Duty	273	500	>50%
Building 450	TV-10	C1017-CN25	796007456	Square D	465	750	-
Building 468	NTV-13	C1017-BO11	G-106095-1	Hevi-Duty	211	300	35 ppm
Building 469 (former CDC)	NTV-9B	-	81JK574032	Westinghouse	-	300	<2 ppm
Building 469 (former CDC)	NTV-9A	-	-	-	-	-	135 ppm
Building 47	NTV-27A	C1018-CH19	G-73521	Hevi-Duty	164	150	26 ppm
Building 47	NTV-27B	C1018-CH18	G-73523-1	Hevi-Duty	211	300	None
Building 47	NTV-27C	C1018-CH20	-	-	-	-	-
Building 480	TV-480	C1017-D038	F-49142	Delta-Star	195	225	10 ppm
Building 480	TV-480A	C1017-D037	-	-	-	-	-
Building 483	-	C1017-FM13	-	-	-	-	-
Building 501	NTV-8	-	G-10694-7	Hevi-Duty	195	225	30 ppm
Building 525	TV-6	-	8639526	ESCO	374	750	<2 ppm

Location	Trans-former No.	ID Tag	Serial No.	Manufacturer	Oil Capacity (Gal.)	Size (kVA)	PCB Content
Building 525	TV-6	C1017-EL39	-	-	-	-	-
Building 59	NTV-20	C1018-BE36	830414	Square D	239	500	<2 ppm
Building 59	NTV-20	-	G-73528	Hevi-Duty	273	500	80 ppm
Building 406	TV-7	-	F-963884	General Electric	160	750	>50%
Field	NTV-15	-	G-73526	Hevi-Duty	346	750	<0.65 ppm
Hatfield Gate VCP	TV-5	C1018-CN63	V-290019	Delta-Star	301	750	-
Parking lot E of Building 405	TV-30	-	-	-	-	37.5	-
Quarters 11	NTV-22	C1018-CG71	G-10694-4	Hevi-Duty	195	225	45 ppm
Quarters 15	NTV-21	C1018-BF99	-	Hevi-Duty	-	225	90 ppm
Quarters 19&21	NTV-19	C1018-CE08	G-10694-6	Hevi-Duty	195	225	35 ppm
Quarters 23	NTV-29	C1018-BF08	G-10694-1	Hevi-Duty	195	300	60 ppm
Quarters 7&8	NTV-23	-	G-10694-3	Hevi-Duty	195	225	660ppm
Street Light	-	-	8639525	ESCO	-	37.5	10 ppm
Street Light	-	-	RBE-7144	Standard	-	25	<2 ppm
Wright Gate VCP	NTV-25	C0108-GI19	-	-	-	-	-

Appendix C – Historic Site Analysis

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Location	Trans-former Number	ID Tag	Description	Evaluation
Building 214 (Historic)	TV-1	-	An inspection performed in 1988 noted leaks at this transformer location. The transformer was removed in 2000.	This transformer was replaced. No signs of leaks were observed during the 2016 inspection.
Building 216 (Historic)	NTV-12	-	An inspection performed in 1988 noted leaks at this transformer location, though any contamination of soil could not be visibly determined at that time.	This transformer was replaced. No signs of leaks were observed during the 2016 inspection.
Building 219 (Historic)	NTV-11	C1018-AG37	Oil staining on the transformer case and pad and old saturated absorbent was observed during the 2009 inspection.	This transformer was replaced. No signs of leaks were observed during the 2016 inspection.
Building 248 (Historic)	NTV-17	C1018-XE62	An inspection performed in 1988 noted leaks from this transformer.	This transformer was removed.
Building 251 (Historic)	NTV-16	-	An inspection performed in 1988 noted leaks from this transformer.	This transformer was removed and replaced with a new transformer. No signs of leaks were detected from this transformer during the 2016 inspection.
Building 270/273	-	C1018-BI21	1996 inventory lists this transformer at Building 270 Dog Kennels. Replacement transformer.	The inspection revealed some corrosion, organic material staining, and possible leakage. This site is included in the sampling analysis plan.
Building 3	-	-	In 1990, a PCB transformer at leaked a small quantity of transformer oil.	The leak was contained inside the building and remediated. The building was eventually demolished.
Building 301 (Historic)	NTV-25/26	-	The transformer was leaking at the time of an inspection in 1988 and reportedly had been leaking for five years. The soil in the area had been contaminated.	Site plans dated 1990 for testing and decontaminated were available but closure documentation could not be located. This transformer was removed and replaced with a new transformer. No signs of leaks were detected from this transformer during the 2016 inspection.
Building 313 (Historic)	-	-	An inspection performed in 1988 noted leaks from two of the three transformers in the storage rooms. The surrounding area was not found to be contaminated.	The leaks were contained inside the building and remediated in 1990. These transformers appear to have been removed and only one transformer is located at this building. No signs of recent leaks

Location	Trans-former Number	ID Tag	Description	Evaluation
				were observed on this transformer at the time of the 2016 inspection.
Building 316 (Current)	NTV-24	C1018-EI27	An inspection performed in 2009 noted oil staining on the transformer pad.	The concrete pad appeared to be replaced and no signs of leaking were observed during the 2016 inspection.
Building 323 (Historic)	-	-	In 1990, a transformer leaked a small quantity of transformer oil and contaminated the soil down to approximately 6 inches.	The soil was reportedly removed. Site investigation and inspection revealed that this building was demolished and the transformer was removed.
Building 330 (Current)	-	C1018-EH44	An inspection performed in 2009 noted possible oil staining on the transformer pad and corrosion at the base of the transformer.	No signs of leaks were observed during the 2016 inspection.
Building 330 (Current)	-	C1018-EH45	An inspection performed in 2009 noted possible oil staining on the transformer pad.	No signs of leaks were observed during the 2016 inspection.
Building 403 (Historic)	TV-4	-	A remediation contract was completed as of March 1993, but sample results afterwards showed that additional remediation was required and the transformer would have to be cleaned.	This transformer was removed and Building 406 was demolished.
Building 404 (Historic)	TV-3	-	An inspection performed in 1988 noted leaks from this transformer, which extended to the soil area. The area remained contaminated until 1998, when the PCB-contaminated soil was excavated.	Lab results from 8 soil samples indicated that the PCB concentration levels were below remediation goal levels. No signs of leaks were observed from the transformers at this location during the 2016 inspection.
Building 406 (Historic)	TV-7	-	A remediation contract was completed as of March 1993, but sample results afterwards showed that additional remediation was required and the transformer would have to be cleaned.	This transformer was removed and Building 406 was demolished in 2009.

Location	Trans-former Number	ID Tag	Description	Evaluation
Building 410	-	-	A remediation contract was completed as of March 1993, but sample results afterwards showed that additional remediation was required and the transformer would have to be cleaned. Wipe samples indicated some elevated levels of PCBs and an area was designated for remediation.	The remediation in this building could not be confirmed, but the building has since been demolished.
Building 411 (Current)	TV-411	C1018-BC80	Potential oil staining around the pipe leading from case to baffles and minor rust/corrosion was noted at this transformer 2009.	No signs of leaks were observed during the 2016 inspection.
Building 423 (Historic)	NTV-15	-	At the time of an inspection in 1988, a leak was detected and absorbents were in use. The transformer had been leaking since 1979 and the entire area was contaminated.	PCB remediation was completed as of March 1993. Sample results indicated that no additional remediation was required. The transformer has been removed and the building was demolished.
Building 447 (Historic)	NTV-14	-	An inspection performed in 1988 noted leaks from this transformer.	This transformer has been removed.
Building 447 (Current)	NTV-14	C1017-BO91	Any possible signs of leaking were unable to be seen due to heavily oxidized paint and leaves/organic debris covering pad and surrounding ground during a 2009 inspection.	No signs of leaks were observed during the 2016 inspection.
Building 448	NTV-10	-	In 1996, wipe samples taken from the transformer vault indicated PCB concentrations exceeding the cleanup standard of 10 µg/cm^3.	In 1998, the concrete pad was double washed and rinsed. Results from two wipe samples taken after the cleaning were below the cleanup standard. Additionally, the building has been demolished.
Building 450	TV-10	C1017-CN25	In 1990, the PCB transformer leaked a small amount of transformer oil onto asphalt.	The asphalt was double washed and the transformer was replaced.

Location	Trans-former Number	ID Tag	Description	Evaluation
Building 468 (Historic)	NTV-13	C1017-BO11	An inspection performed in 1988 noted leaks from this transformer. Potential oil staining on the transformer case (possibly paint oxidation) was also noted in a 2009 inspection.	This transformer has been removed.
Building 469 (former CDC)	NTV-9	-	In 1995, there was a PCB spill of approximately 5 gallons at the former CDC.	The transformer pad and transformer were cleaned and decontaminated within a few weeks of the spill. The final soil samples indicated the levels were below the regulatory limits.
Building 47 (Historic)	NTV-27A	C1018-CH19	A leak was detected during a 1988 inspection.	Inspection notes state that the leak never contaminated the soil and that the unit was retrofilled with non-PCB fluid. This transformer was replaced by NTV-27. No signs of leaks were observed during the 2016 inspection.
Building 480 (Historic)	TV-480	C1017-D038	A leak was detected during a 1988 inspection. Possible oil staining on the outside of the case near the base of the transformer was observed during a 2009 inspection.	This transformer was replaced. No signs of leaks were observed during the 2016 inspection.
Field (Historic)	NTV-15	-	During an inspection in 1995, the transformer was disconnected and there was visible staining on the pad and the ground.	Wipe samples detected no PCBs in the area.
Quarters 11 (Historic)	NTV-22	C1018-CG71	Oil staining was observed on the north side of the transformer case and on the north side of the transformer pad during a 2009 inspection. Old saturated absorbent pads were also observed underneath the case during the inspection.	This transformer was replaced. No signs of leaks were observed during the 2016 inspection.
Quarters 19&21 (Historic)	NTV-19	C1018-CE08	Oil staining on the transformer case and old absorbent material was observed around the exterior pipes during the 2009 inspection.	This transformer was replaced. There were no signs of leaks at the time of the 2016 inspection.

Location	Trans-former Number	ID Tag	Description	Evaluation
Quarters 23 (Historic)	NTV-29	C1018-BF08	Possible oil staining was observed during a 2009 inspection.	This transformer was replaced. There were no signs of leaks at the time of the 2016 inspection.
Wright Gate VCP (Historic)	NTV-25	C0108-GI19	A leak was detected during a 1988 inspection. Possible oil staining was observed on the west side of the transformer pad during a 2009 inspection.	This transformer was removed. The transformer now located at NTV-25 looked new and there were no signs of leaks at the time of the 2016 inspection.
AC Pit (grassy area between Buildings 251 and 410	TV-RF	-	Samples were collected from the AC Pit in 1993. Results indicated the presence of PCB contamination. Samples collected in 1996 confirmed that PCB contamination remained in the area.	In 1998, the concrete pad was double washed and rinsed. Two wipe samples were collected; lab results were below the remediation goal levels.
Area surrounding Child Development Center (CDC)	-	-	In the mid-1980s, approximately 200 cubic feet of PCB-contaminated soil was excavated from the site. Contamination was estimated to cover four acres. Samples were previously collected from the area where the current CDC building, grassy areas to the north and northeast, and current parking area to the east.	Most soil samples collected had concentrations below the USEPA PCB cleanup levels for non-restricted access areas (10 ppm). The maximum concentration in soil at the former north burn pit, currently a courtyard area on the north side of the CDC, was 34 ppm. The former playground area (to the northeast of the CDC) was remediated in 1984-1985, with 200 cubic feet of PCB-contaminated soil was excavated, taken offsite for disposal, and replaced with clean fill. This area is included in the sampling analysis plan.

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Appendix D – *The Pentagram* PCB Article

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Killer Thermostats: Countering the Internet of Terrorism (IoT)

Co-Authored by Col. Patrick M. Duggan Commander, Joint Base Myer-Henderson Hall

Col. Patrick M. Duggan

Should you be scared of your new thermostat? Maybe, if it is WIFI-enabled and you haven't secured it.

Why? The next generation of terrorism is here, and it will use your connected devices – thermostats, fridges, lights, elevators, industrial controls, cars – even toys. These smart devices represent the latest pathways for tech-savvy terrorists to wreak chaos. But before unplugging everything you own to live off the grid, take heart in the fact, at least at the national level, we still have time to prepare.

While traditional DoD counter-terrorism (CT) efforts have mainly emphasized direct action, future U.S. security measures must also adapt to harness the Internet of Things (IoT). Simply put, the IoT's inexorable growth portends new methods for destruction but also provides new mechanisms for defense.

These same IoT devices are as capable for U.S. Special Operations Forces (SOF) hunting terrorists as they are to the enemies who use them. This phenomena of unconventional cyberwarfare will become increasingly critical to defending the nation and heralds the birth of a new form of CT: countering the Internet of Terrorism (IoT).

The concept of "edge computing" is breeding entirely new ecosystems – and terrorist threats. Edge computing is a critical driving force behind IoT's ever-expanding adaption to new fields of computer application. Instead of a centralized hub to process data or information, edge computing enables virtually anything with a mini-processor to use its own "smarts" to respond at the very source of the data. This capability means that end-user client devices can carry out a multitude of nefarious activities independently or as part of a more coordinated "foggy network."

According to leading reports, by 2025 a huge percentage of the devices we use regularly in our daily life will be connected; and our wearables, ingestibles, sensors, transportation systems and devices will all become a node on constantly emitting and transmitting networks. Not only will this explosion of technology drive privacy issues and self-determined freedom over our individual lives, but it can kill us as well.

Take for example, the fact that the Islamic State in Iraq and Syria (ISIS) is already employing off-the-shelf drones to drop bombs and fly kamikaze-like missions into U.S. and Iraqi SOF partners in Northern Iraq. How much longer will it take for the next "terror-byte" step, to use edge computing technology so that a terrorist can build his own swarm of killer drones in a garage?

And making it even harder to counter, the garage can be a thousand miles away, with units operated like some sort of macabre video game.

How will Soldiers destroy a swarm of bomb-laden drones coming at them from multiple directions when they are moving on the ground? The answer is to use a defensive structure that is as flexible and adaptive as the enemy. The best protection requires leveraging our own network of miniaturized and remote systems to create a counter-swarm!

Special Operations and Cyber operations can work together effectively to provide low-cost, high effectiveness defense against a number of newly emerging terrorist threats. There are clearly big-data threats that require big-computer systems to defend against – exactly the type of capabilities developed by U.S. Cyber Command (CYBERCOM). Many threats, however, are both more tactical and more distributed. In order to defend against these dangers, it is necessary to have counter-capabilities that are also tactical and locally disseminated.

We encourage the creation of a new Special Operations Command-Cyber (SOC-CYBER). Similar to the Theater Special Operations Commands (TSOCs) every Geographic Combatant Commands owns, SOC-CYBER would provide the same integration, synchronization and oversight of better fused cyber-SOF missions.

Co-locating some of the nation's most talented warriors with those trained to counter emerging technical threats would help ensure America stays ahead of the coming Internet of Terror.

But still, don't forget to add a password to your thermostat.

Editor's note: Duggan's co-author is Scott S. Gartner, Director of Pennsylvania State School of International Affairs. Reprinted by permission, this article first appeared in the Huffington Post March 3, 2017.

PCBs: Cleaning up the former 'miracle chemical'

By Jen Tolbert Environmental Management Division, JBM-HH Directorate of Public Works

A substance that has low flammability, chemical stability, and excellent insulating properties and could come in the form of liquid oil or a waxy solid – this was every industrial and commercial manufacturer's dream chemical.

Because of these valuable properties, polychlorinated biphenyls (PCBs) were used in a wide variety of products including transformers, capacitors, pesticides, paints, adhesives, plastics and many more.

PCBs were manufactured from 1929 until 1979, when production was banned due to negative human health and environmental impacts. While PCBs are no longer manufactured, and many PCB-containing products have been taken out of use, they can still be released into the environment from improper maintenance and disposal of older PCB products.

Poorly managed hazardous waste sites, illegal dumping, disposal of PCB-containing products at landfills not designed to handle hazardous waste, burning of PCB waste in incinerators and leaks from PCB-containing transformers have all been causes of PCB releases to the environment.

States in the Chesapeake Bay area are working to reduce PCB contamination in the Bay by establishing new regulations and requirements to prevent PCBs from entering waterways.

In 2007, Virginia, Maryland, and the District of Columbia, developed Total Maximum Daily Loads (TMDLs) for PCBs for tidal portions of the Potomac and Anacostia Rivers. These TMDLs establish amounts of PCBs that a waterbody can receive while still meeting required water quality standards and allow states to place restrictions on facilities with the potential to discharge stormwater to the Bay.

These facilities are often required to develop PCB TMDL Action Plans to identify any potential sources of PCBs and plan how to ensure they do not pollute waterways.

Even though Fort Myer and Henderson Hall do not discharge directly to the Bay or the Potomac River, the Environmental Management Division recently developed a PCB TMDL Action Plan for Fort Myer and Henderson Hall, as a requirement for the Installation's Virginia Municipal Separate Storm Sewer System (MS4) Permit. Because Fort McNair is not located in Virginia and does not have the same requirements, it was not included in the action plan.

COURTESY PHOTO

The Potomac River is covered under the Total Maximum Daily Load (TMDL) for polychlorinated biphenyls (PCBs).

The purpose of the action plan is to identify potential sources of PCBs on the base and ensure the public and environment are protected from the effects of PCBs.

No significant sources of PCBs were identified at Joint Base Myer-Henderson Hall through the research conducted for this action plan. Historically, the main potential sources of PCBs on JBM-HH have been transformers. However, all pure PCB transformers have been removed from the installation or retrofitted with mineral oil to prevent adverse environmental and human health impacts should a transformer leak oil.

Fluorescent light ballasts are another historical source of PCBs on base. After the manufacture of PCB-containing light ballasts was banned by EPA in 1979, existing PCB-containing fixtures on the installation were gradually replaced. If old fluorescent light ballasts are discovered, they are replaced.

The PCB ballasts, which contain only a very small amount of PCBs, are properly managed and disposed. In fact, all hazardous waste is effectively managed on base to protect people and the environment and ensure harmful substances, including PCBs, are properly contained and disposed.

To report conditions that could cause stormwater pollution or to get more involved with stormwater activities at JBM-HH, call the Environmental Management Division at 703-696-8055.

For more information and guidance resources on PCBs, visit EPA's PCB webpage (www.epa.gov/pcbs).

PAO recognized in Army-wide competition

By Public Affairs Office Staff

We would like to take a small space (we want to keep to telling, not being the news) here to give praise to one of our own (okay, we're patting ourselves on the back).

Emily Myers, public affairs specialist, first served a developmental assignment with JBM-HH PAO in 2016; then, we were fortunate to hire her away from Aberdeen Proving Ground, Maryland, in January.

Bottom line: Annual Keith L. Ware Journalism awards were distributed in late February, and we are proud to note that Ms. Myers – our EM – is on a team of five at Aberdeen Proving Ground who won first place in Installation Management Command's Community Relations category for "Community Leader Engagements."

Myers' job on the APG team was filming social media videos and broadcasting various community augmentation events between civilian community and base leaders, enhancing partnership opportunities on and off APG: school systems, housing partners, municipal and state government partners. She did her part to explore issues that are important to military and civilian neighbors divided by a fence and helped foster relationships and share solutions. This IMCOM first place has been forwarded on to Department of Army.

She brought her talent and expertise with her from APG, and we are proud to say that Myers won an individual award in Social Media Video at JBM-HH for her video "See Something, Say Something."

Always topical, see it at https://www.facebook.com/jbmhh/videos/10154621001902074/.

Contact Myers in the Fusion Cell, Building 59, room 219, Fort Myer, emily.n.myers.civ@mail.mil or 703-696-8897.

PHOTO BY FRANCIS CHUNG

Public affairs specialist Emily Myers poses outside of Joint Base Myer-Henderson Hall Headquarters March 7.

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Pentagram

703-696-5401

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Appendix E – Stormwater Pollution Prevention Awareness Brochure

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Report It!

You are the eyes and ears of the JBM-HH.

If you see a condition that is causing or could cause stormwater pollution, notify JBM-HH EMD using the phone numbers provided on the back of this pamphlet.

If you see a spill of oil or other hazardous material, report it by calling 911 immediately and then report it to EMD.

- Spills of oil – dark staining on pavement or concrete, or a rainbow sheen on water
- Leaking vehicles
- Sediment tracked out or in runoff from construction sites
- Strong odors
- Floating debris and trash
- Algae – green scum on bodies of water
- Dead vegetation
- Illegal dumping
- Anything in runoff or entering a storm drain that is not rainwater or snowmelt - unusual color, odor, cloudiness, foam/suds, etc.
- Leaks from transformers and other electric and hydraulic equipment, as these may cause PCB pollution of waterways.

For more information contact JBM-HH EMD:

Environmental Management Division

Pollution Prevention:

Mr. Tony Taylor 703-696-1222

Waste Disposal:

Mr. Mark Luckers 703-696-2012

Recycling:

Mr. Roy Croom 703-696-3791

Stormwater Program Email Address:

usarmy.jbmhh.asa.mbx.fort-myer-fort-mcnair-stormwater-program@mail.mil

Visit the JBM-HH Stormwater Pollution Prevention Webpage for more information

https://home.army.mil/jbmhh/index.php/teamJBMHH/about/Base/stormwater-pollution-prevention-jbm-hh-1

STORMWATER POLLUTION PREVENTION AWARENESS

For Civilian and Military Employees

Prepared by:
JBM-HH DPW – Environmental Management Division

Protecting Water Resources in the Chesapeake Bay Watershed

JBM-HH Storm Sewer Systems

JBM-HH operates a small Municipal Separate Storm Sewer System (MS4), which is a network of inlets, gutters, curbs, and pipes intended to collect stormwater. JBM-HH's MS4 is covered under a stormwater permit.

All of JBM-HH's storm drains carry stormwater to the Anacostia and Potomac Rivers and their tributaries, which flow to the Chesapeake Bay.

Key Stormwater Pollutants

Poor water quality has been an ongoing problem in the Chesapeake Bay and its tributaries. To address the Bay's declining health, the U.S. EPA established limits for three key pollutants in the Bay – **Nitrogen, Phosphorus, and Sediment**.

Additionally, limits have been established for **polychlorinated biphenyls (PCBs)** in the Potomac River. Before a 1979 ban, PCBs were commonly used in transformers and other electrical equipment, caulking, insulation, pesticides, and more. Therefore, older equipment and buildings could be potential sources of PCB pollution and leaks from transformers and other electrical equipment should be reported.

JBM-HH's stormwater permit requires the installation to address potential sources of nitrogen, phosphorus, sediment, and PCBs in order to comply with the limits for the Chesapeake Bay and Potomac River.

Protecting JBM-HH's Stormwater

Because JBM-HH's storm drains collect and transport rainwater and snowmelt directly to streams and rivers, rather than to a treatment plant that removes pollutants, daily activities around the base can have a large impact on the amount of pollution entering nearby waterways.

Oil, grease, detergents, trash, pet waste, and other pollutants that are leaked or deposited on the ground, intentionally or not, eventually end up in waterways.

By following the practices below, you can help protect the Chesapeake Bay and our Nation's water resources.

- Use proper waste bins – Never throw trash or cigarette butts on the ground.
- Have your vehicle maintained regularly.
- Do not top off your vehicle tank when refueling.
- Use commercial car washes rather than washing your car outdoors on pavement. Commercial car washes treat and recycle the washwater, which contains oils, grease, metals, and other pollutants.
- Immediately clean up spilled materials.
- Report observed leaks from transformers and other electric and hydraulic equipment to EMD to prevent the PCB pollution of waterways.
- Observe good housekeeping practices in outdoor material storage areas; limit excess storage of materials.
- Close dumpster doors and lids to prevent rainwater from entering and mixing with pollutants.
- Ask your supervisor if any of your activities are subject to the JBM-HH Stormwater Pollution Prevention Plan.
- If you see a condition that is causing or could cause stormwater pollution, notify JBM-HH EMD using the phone numbers provided on the back of this pamphlet.
- Contact EMD if you have any hazardous materials for disposal.

Did you know?

- Cigarette butts are the number one most littered item in the U.S. and in the world. An estimated **4.5 trillion** are thrown away every year, polluting the environment with toxic chemicals and litter.

- Vehicle fluids can be toxic to people, wildlife, and plants. These fluids, such as oil, do not dissolve in water and can stick to everything from sand to bird feathers. **One pint of oil can make a slick larger than a football field.**
- Approximately **40 gallons of gasoline** are spilled at a typical gas station every year. The small drops that are spilled as you top off your tank really add up.

- Between **1 and 1.5 million metric tons** of PCBs are estimated to have been produced in the world, with approximately **40% of that material still in use**.

Appendix F – *The Pentagram* Recognizing and Reporting Pollution Concerns Article

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EFMP from Page 3

Have special education needs?

"If the answer is 'yes' to any of the questions, you should make an appointment at your local Medical Treatment Facility EFMP office for family medical screening and enrollment," said Col. Scott Gregg, EFMP director for the Army Office of the Surgeon General.

"Soldiers and families who need additional assistance or want to learn more about EFMP should contact their local Army Community Service EFMP family support systems navigator," said Sharon Swisher, EFMP manager, at Army Installation Management Command. "Family support is available to assist families before, during and after relocation with information and resources."

Soldiers and/or families can also submit their question(s) to: usarmy.pentagon.hqda-dcs-g-9.mbx.efmp@army.mil.

See something, say something — prevent environmental pollution

Commentary by Jenny Tolbert
JBM-HH Environmental Management Division

Spring has brought warm weather, flowers, and green trees to Joint Base Myer-Henderson Hall Outdoor activities increase as people take advantage of the warm weather. These outdoor activities along with spring and summer rains can cause an increase in water pollution as more pollutants may be present that are washed into storm drains and eventually the Potomac River and Chesapeake Bay.

Everyone can help prevent harm to these waterways by identifying and reporting potential pollution incidents. Preventing stormwater pollution means protecting the community's water supplies, wildlife and human health.

Staff members from JBM-HH Directorate of Public Works and the Environmental Management Division cannot have eyes on the entire installation to catch all potential pollution issues. The public, residents and employees at JBM-HH can help protect the health of the environment by being aware of their surroundings, understanding when something could be a pollution concern and knowing how to report it.

To help prevent pollution, the public should keep an eye out for "illicit discharges."

What are illicit discharges?

Illicit discharges are materials that enter storm drains from nonstormwater sources that are not allowed under JBM-HH's storm water permit – in other words, discharges that are not 100% rainwater. Basically, if it did not fall from the sky, it should not go down the storm drain.

Common illicit discharges include wash water from vehicle and equipment washing, oil leaks from vehicles and equipment, sediment-laden water running off construction sites and trash and liquid substances from illegal dumping.

How to identify illicit discharges

Addressing pollution requires recognizing the signs and knowing when and how to report them.

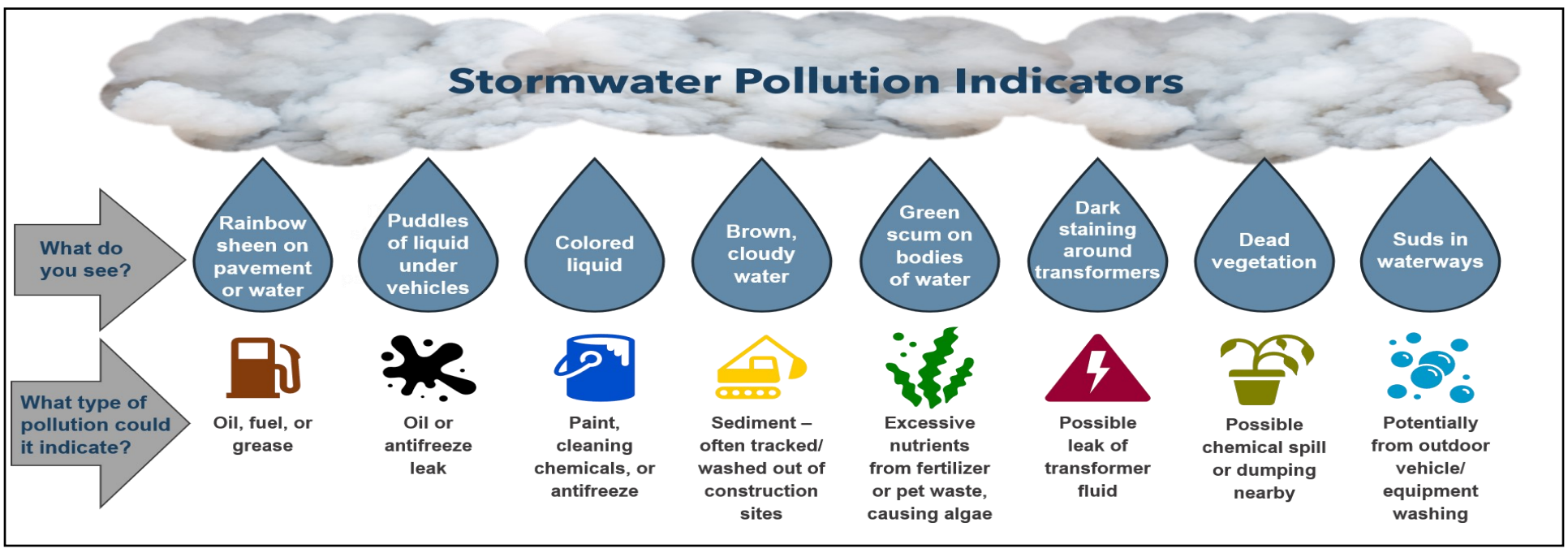
What to do if you identify an illicit discharge

Don't assume someone else will report it. It is always better to have multiple people report a potential pollution problem and allow the issue to be addressed before it can cause harm.

If you see a condition that is causing or could cause storm water pollution, notify the JBM-HH Environmental Management Division by calling 703-696-1222 or emailing usarmy.jbmhh.asa.mbx.fort-myer-fort-mcnair-stormwater-program@army.mil. If you see an oil spill or other hazardous material, report it by calling 911 immediately and then report it to EMD.

Additionally, if you observe a potential illicit discharge off installation property in another community, call the county's department of public works or the nonemergency police line to report it.

To learn more, visit https://home.army.mil/jbmhh/index.php/teamJBMHH/about/Base/stormwater-pollution-prevention-jbm-hh-1.



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Appendix G – August 2022 Monitoring Event Laboratory Results

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PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Ft Myer PCB Sampling
PSS Project No.: 22083107

September 16, 2022

Jenny Tolbert
AECOM Technology Corp.
12420 Milestone Ctr. Dr., Ste 150
Germantown, MD 20876

Reference: PSS Project No: **22083107**
Project Name: Ft Myer PCB Sampling
Project Location: Ft. Myer, VA
Project ID.: 60638596

Dear Jenny Tolbert:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22083107**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 5, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Explanation of Qualifiers

Project Name: Ft Myer PCB Sampling

PSS Project No.: 22083107

Project ID: 60638596

The following samples were received under chain of custody by Phase Separation Science (PSS) on 08/31/2022 at 12:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22083107-001	Outfall 012	SURFACE WATER	08/30/22 17:10
22083107-002	Outfall DP	SURFACE WATER	08/30/22 17:15

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-96341-1
Client Project/Site: PCB Congeners

For:
Phase Separation Science, Inc
6630 Baltimore National Pike
Suite 103
Baltimore, Maryland 21228

Attn: Reporting Purposes

Debra Bryan

Authorized for release by:
9/15/2022 2:58:01 PM

Debra Bryan, Project Management Assistant I
(717)656-2300
Debra.Bryan@et.eurofinsus.com

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Debra Bryan

Debra Bryan
Project Management Assistant I
9/15/2022 2:58:01 PM

Table of Contents

Definitions/Glossary

Client: Phase Separation Science, Inc
Job ID: 410-96341-1
Project/Site: PCB Congeners

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Job ID: 410-96341-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative
410-96341-1

Receipt
The samples were received on 8/31/2022 6:39 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.5°C

Hi-Res PCBs
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-001 Outfall 012

Lab Sample ID: 410-96341-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-11	190	J I	300	110	pg/L	1		1668A	Total/NA
PCB-31	16	J	39	14	pg/L	1		1668A	Total/NA
PCB-37	11	J	39	7.9	pg/L	1		1668A	Total/NA
PCB-44/47/65	25	J	240	24	pg/L	1		1668A	Total/NA
PCB-52	26	J	79	12	pg/L	1		1668A	Total/NA
PCB-61/70/74/76	52	J	310	30	pg/L	1		1668A	Total/NA
PCB-64	11	J I	79	9.8	pg/L	1		1668A	Total/NA
PCB-66	22	J	79	11	pg/L	1		1668A	Total/NA
PCB-82	15	J I	79	13	pg/L	1		1668A	Total/NA
PCB-90/101/113	90	J	240	39	pg/L	1		1668A	Total/NA
PCB-92	15	J	79	12	pg/L	1		1668A	Total/NA
PCB-95	57	J B	79	12	pg/L	1		1668A	Total/NA
PCB-99	42	J B	79	12	pg/L	1		1668A	Total/NA
PCB-105	54	J B	79	11	pg/L	1		1668A	Total/NA
PCB-106	69	J I B	79	19	pg/L	1		1668A	Total/NA
PCB-110/115	120	J B	160	26	pg/L	1		1668A	Total/NA
PCB-118	120	B	79	17	pg/L	1		1668A	Total/NA
PCB-122	91	I B	79	12	pg/L	1		1668A	Total/NA
PCB-128/166	24	J I	160	18	pg/L	1		1668A	Total/NA
PCB-129/138/163	150	J B	240	29	pg/L	1		1668A	Total/NA
PCB-132	41	J	79	11	pg/L	1		1668A	Total/NA
PCB-141	21	J I	79	5.9	pg/L	1		1668A	Total/NA
PCB-146	18	J	79	9.8	pg/L	1		1668A	Total/NA
PCB-147/149	70	J	160	20	pg/L	1		1668A	Total/NA
PCB-153/168	100	J B	160	18	pg/L	1		1668A	Total/NA
PCB-158	19	J	79	11	pg/L	1		1668A	Total/NA
PCB-164	9.0	J	79	6.9	pg/L	1		1668A	Total/NA
PCB-167	11	J	79	11	pg/L	1		1668A	Total/NA
PCB-170	24	J	79	11	pg/L	1		1668A	Total/NA
PCB-174	20	J	79	11	pg/L	1		1668A	Total/NA
PCB-177	13	J	79	8.9	pg/L	1		1668A	Total/NA
PCB-180/193	54	J	160	19	pg/L	1		1668A	Total/NA
PCB-187	28	J	79	11	pg/L	1		1668A	Total/NA
PCB-194	15	J	120	12	pg/L	1		1668A	Total/NA

Client Sample ID: 22083107-002 Outfall DP

Lab Sample ID: 410-96341-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-11	210	J	310	110	pg/L	1		1668A	Total/NA
PCB-31	16	J	41	14	pg/L	1		1668A	Total/NA
PCB-37	12	J I	41	8.3	pg/L	1		1668A	Total/NA
PCB-44/47/65	62	J I	250	25	pg/L	1		1668A	Total/NA
PCB-45	25	J I	83	19	pg/L	1		1668A	Total/NA
PCB-49/69	19	J I	170	19	pg/L	1		1668A	Total/NA
PCB-52	34	J I	83	12	pg/L	1		1668A	Total/NA
PCB-56	28	J	83	14	pg/L	1		1668A	Total/NA
PCB-58	11	J I	83	11	pg/L	1		1668A	Total/NA
PCB-60	18	J I	83	9.3	pg/L	1		1668A	Total/NA
PCB-61/70/74/76	150	J	330	31	pg/L	1		1668A	Total/NA
PCB-64	21	J	83	10	pg/L	1		1668A	Total/NA
PCB-66	44	J	83	11	pg/L	1		1668A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 22083107-002 Outfall DP (Continued)

Lab Sample ID: 410-96341-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-77	58	J I	83	20	pg/L	1		1668A	Total/NA
PCB-82	68	J	83	13	pg/L	1		1668A	Total/NA
PCB-83	23	J I	83	16	pg/L	1		1668A	Total/NA
PCB-84	73	J	83	26	pg/L	1		1668A	Total/NA
PCB-85/116/117	70	J	250	35	pg/L	1		1668A	Total/NA
PCB-90/101/113	400		250	41	pg/L	1		1668A	Total/NA
PCB-91	29	J	83	16	pg/L	1		1668A	Total/NA
PCB-92	54	J	83	12	pg/L	1		1668A	Total/NA
PCB-95	170	B	83	12	pg/L	1		1668A	Total/NA
PCB-99	130	B	83	12	pg/L	1		1668A	Total/NA
PCB-105	350	B	83	11	pg/L	1		1668A	Total/NA
PCB-107	50	J	83	14	pg/L	1		1668A	Total/NA
PCB-108/124	36	J	170	27	pg/L	1		1668A	Total/NA
PCB-110/115	680	B	170	27	pg/L	1		1668A	Total/NA
PCB-114	20	J	83	19	pg/L	1		1668A	Total/NA
PCB-118	700	B	83	18	pg/L	1		1668A	Total/NA
PCB-122	12	J B	83	12	pg/L	1		1668A	Total/NA
PCB-128/166	200		170	19	pg/L	1		1668A	Total/NA
PCB-129/138/163	1100	B	250	30	pg/L	1		1668A	Total/NA
PCB-130	79	J	83	11	pg/L	1		1668A	Total/NA
PCB-131	13	J	83	12	pg/L	1		1668A	Total/NA
PCB-132	320		83	11	pg/L	1		1668A	Total/NA
PCB-134	44	J	83	18	pg/L	1		1668A	Total/NA
PCB-135/151	120	J	170	33	pg/L	1		1668A	Total/NA
PCB-136	37	J	83	16	pg/L	1		1668A	Total/NA
PCB-137	74	J	83	12	pg/L	1		1668A	Total/NA
PCB-141	140		83	6.2	pg/L	1		1668A	Total/NA
PCB-146	100		83	10	pg/L	1		1668A	Total/NA
PCB-153/168	640	B	170	19	pg/L	1		1668A	Total/NA
PCB-156/157	210		170	30	pg/L	1		1668A	Total/NA
PCB-158	120		83	11	pg/L	1		1668A	Total/NA
PCB-164	73	J	83	7.2	pg/L	1		1668A	Total/NA
PCB-167	65	J	83	11	pg/L	1		1668A	Total/NA
PCB-170	130		83	11	pg/L	1		1668A	Total/NA
PCB-171/173	39	J	170	17	pg/L	1		1668A	Total/NA
PCB-172	23	J	83	9.3	pg/L	1		1668A	Total/NA
PCB-174	88		83	11	pg/L	1		1668A	Total/NA
PCB-176	10	J	83	6.2	pg/L	1		1668A	Total/NA
PCB-177	51	J	83	9.3	pg/L	1		1668A	Total/NA
PCB-179	23	J	83	9.3	pg/L	1		1668A	Total/NA
PCB-180/193	210		170	20	pg/L	1		1668A	Total/NA
PCB-187	75	J	83	11	pg/L	1		1668A	Total/NA
PCB-190	23	J	83	17	pg/L	1		1668A	Total/NA
PCB-194	32	J	120	12	pg/L	1		1668A	Total/NA
PCB-196	17	J	120	11	pg/L	1		1668A	Total/NA
PCB-198/199	36	J	250	19	pg/L	1		1668A	Total/NA
PCB-203	20	J	120	13	pg/L	1		1668A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-001 Outfall 012

Date Collected: 08/30/22 17:10
Date Received: 08/31/22 18:39

Lab Sample ID: 410-96341-1

Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		200	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-2	ND		200	16	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-3	ND		200	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-4	ND		44	22	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-5	ND		44	20	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-6	ND		39	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-7	ND		39	16	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-8	ND		39	16	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-9	ND		39	17	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-10	ND		44	22	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-11	**190**	**J I**	300	110	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-12/13	ND		79	33	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-14	ND		44	20	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-15	ND		44	20	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-16	ND		39	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-17	ND		39	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-18/30	ND		79	24	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-19	ND		39	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-20/28	ND		79	28	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-21/33	ND		79	29	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-22	ND		39	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-23	ND		39	15	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-24	ND		39	17	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-25	ND		39	13	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-26/29	ND		79	35	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-27	ND		39	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-31	**16**	**J**	39	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-32	ND		39	7.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-34	ND		39	17	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-35	ND		39	19	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-36	ND		39	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-37	**11**	**J**	39	7.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-38	ND		39	17	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-39	ND		39	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-40/71	ND		160	16	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-41	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-42	ND		79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-43	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-44/47/65	**25**	**J**	240	24	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-45	ND		79	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-46	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-48	ND		79	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-49/69	ND		160	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-50/53	ND		300	90	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-51	ND		79	13	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-52	**26**	**J**	79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-54	ND		79	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-55	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-56	ND		79	14	pg/L		09/14/22 09:32	09/15/22 09:25	1

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-001 Outfall 012
Date Collected: 08/30/22 17:10
Date Received: 08/31/22 18:39

Lab Sample ID: 410-96341-1
Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-57	ND		79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-58	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-59/62/75	ND		240	25	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-60	ND		79	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-61/70/74/76	**52**	**J**	310	30	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-63	ND		79	13	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-64	**11**	**J I**	79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-66	**22**	**J**	79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-67	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-68	ND		79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-72	ND		79	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-73	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-77	ND		79	19	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-78	ND		79	15	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-79	ND		79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-80	ND		79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-81	ND		79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-82	**15**	**J I**	79	13	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-83	ND		79	15	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-84	ND		79	25	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-85/116/117	ND		240	33	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-86/87/97/109/119/125	ND		470	150	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-88	ND		79	17	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-89	ND		79	15	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-90/101/113	**90**	**J**	240	39	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-91	ND		79	15	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-92	**15**	**J**	79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-93/100	ND		160	25	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-94	ND		79	13	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-95	**57**	**J B**	79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-96	ND		79	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-98/102	ND		200	29	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-99	**42**	**J B**	79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-103	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-104	ND		79	17	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-105	**54**	**J B**	79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-106	**69**	**J I B**	79	19	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-107	ND		79	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-108/124	ND		160	26	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-110/115	**120**	**J B**	160	26	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-111	ND		79	13	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-112	ND		79	16	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-114	ND		79	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-118	**120**	**B**	79	17	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-120	ND		79	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-121	ND		79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-122	**91**	**I B**	79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-123	ND		79	22	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-126	ND		79	29	pg/L		09/14/22 09:32	09/15/22 09:25	1

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-001 Outfall 012
Date Collected: 08/30/22 17:10
Date Received: 08/31/22 18:39

Lab Sample ID: 410-96341-1
Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-127	ND		79	6.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-128/166	**24**	**J I**	160	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-129/138/163	**150**	**J B**	240	29	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-130	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-131	ND		79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-132	**41**	**J**	79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-133	ND		79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-134	ND		79	17	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-135/151	ND		160	31	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-136	ND		79	15	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-137	ND		79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-139/140	ND		160	19	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-141	**21**	**J I**	79	5.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-142	ND		79	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-143	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-144	ND		79	21	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-145	ND		79	23	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-146	**18**	**J**	79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-147/149	**70**	**J**	160	20	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-148	ND		79	16	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-150	ND		79	19	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-152	ND		79	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-153/168	**100**	**J B**	160	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-154	ND		200	44	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-155	ND		79	20	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-156/157	ND		160	29	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-158	**19**	**J**	79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-159	ND		79	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-160	ND		79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-161	ND		79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-162	ND		79	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-164	**9.0**	**J**	79	6.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-165	ND		79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-167	**11**	**J**	79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-169	ND		79	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-170	**24**	**J**	79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-171/173	ND		160	16	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-172	ND		79	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-174	**20**	**J**	79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-175	ND		79	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-176	ND		79	5.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-177	**13**	**J**	79	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-178	ND		79	15	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-179	ND		79	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-180/193	**54**	**J**	160	19	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-181	ND		79	7.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-182	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-183/185	ND		160	22	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-184	ND		79	14	pg/L		09/14/22 09:32	09/15/22 09:25	1

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-001 Outfall 012
Date Collected: 08/30/22 17:10
Date Received: 08/31/22 18:39

Lab Sample ID: 410-96341-1
Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-186	ND		79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-187	**28**	**J**	79	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-188	ND		200	46	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-189	ND		79	15	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-190	ND		79	16	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-191	ND		79	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-192	ND		79	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-194	**15**	**J**	120	12	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-195	ND		120	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-196	ND		120	11	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-197/200	ND		240	14	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-198/199	ND		240	18	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-201	ND		390	48	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-202	ND		120	8.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-203	ND		120	13	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-204	ND		120	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-205	ND		120	6.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-206	ND		120	6.9	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB-207	ND		120	9.8	pg/L		09/14/22 09:32	09/15/22 09:25	1
PCB(C) 208	ND		120	54	pg/L		09/14/22 09:32	09/15/22 09:25	1
DCB Decachlorobiphenyl	ND		980	240	pg/L		09/14/22 09:32	09/15/22 09:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*40*		*15 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-3L	*42*		*15 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-4L	*37*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-8L	*40*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-15L	*43*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-19L	*40*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-31L	*47*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-32L	*46*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-37L	*62*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-47L	*55*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-54L	*44*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-60L	*65*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-70L	*66*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-77L	*72*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-81L	*70*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-85L	*53*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-95L	*59*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-104L	*47*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-105L	*71*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-114L	*71*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-118L	*71*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-123L	*69*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-126L	*67*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-127L	*68*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-155L	*59*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-156L/157L	*74*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*
PCB-167L	*73*		*25 - 150*	*09/14/22 09:32*	*09/15/22 09:25*	*1*

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-001 Outfall 012

Lab Sample ID: 410-96341-1

Date Collected: 08/30/22 17:10

Matrix: Water

Date Received: 08/31/22 18:39

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-169L	72		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-180L	96		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-188L	69		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-189L	75		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-202L	67		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-205L	77		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-206L	73		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-208L	71		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-209L	70		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-128L	71		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-133L	70		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-141L	90		25 - 150	09/14/22 09:32	09/15/22 09:25	1
PCB-162L	87		25 - 150	09/14/22 09:32	09/15/22 09:25	1

Client Sample ID: 22083107-002 Outfall DP

Lab Sample ID: 410-96341-2

Date Collected: 08/30/22 17:15

Matrix: Water

Date Received: 08/31/22 18:39

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		210	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-2	ND		210	17	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-3	ND		210	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-4	ND		47	23	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-5	ND		47	21	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-6	ND		41	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-7	ND		41	17	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-8	ND		41	17	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-9	ND		41	18	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-10	ND		47	23	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-11	**210**	**J**	310	110	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-12/13	ND		83	35	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-14	ND		47	21	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-15	ND		47	21	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-16	ND		41	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-17	ND		41	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-18/30	ND		83	25	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-19	ND		41	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-20/28	ND		83	29	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-21/33	ND		83	30	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-22	ND		41	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-23	ND		41	16	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-24	ND		41	18	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-25	ND		41	13	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-26/29	ND		83	37	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-27	ND		41	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-31	**16**	**J**	41	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-32	ND		41	8.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-34	ND		41	18	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-35	ND		41	20	pg/L		09/14/22 09:32	09/15/22 00:57	1

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-002 Outfall DP
Date Collected: 08/30/22 17:15
Date Received: 08/31/22 18:39

Lab Sample ID: 410-96341-2
Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-36	ND		41	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-37	**12**	**J I**	41	8.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-38	ND		41	18	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-39	ND		41	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-40/71	ND		170	17	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-41	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-42	ND		83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-43	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-44/47/65	**62**	**J I**	250	25	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-45	**25**	**J I**	83	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-46	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-48	ND		83	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-49/69	**19**	**J I**	170	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-50/53	ND		310	94	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-51	ND		83	13	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-52	**34**	**J I**	83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-54	ND		83	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-55	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-56	**28**	**J**	83	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-57	ND		83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-58	**11**	**J I**	83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-59/62/75	ND		250	26	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-60	**18**	**J I**	83	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-61/70/74/76	**150**	**J**	330	31	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-63	ND		83	13	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-64	**21**	**J**	83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-66	**44**	**J**	83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-67	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-68	ND		83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-72	ND		83	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-73	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-77	**58**	**J I**	83	20	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-78	ND		83	16	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-79	ND		83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-80	ND		83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-81	ND		83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-82	**68**	**J**	83	13	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-83	**23**	**J I**	83	16	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-84	**73**	**J**	83	26	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-85/116/117	**70**	**J**	250	35	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-86/87/97/109/119/125	ND		500	160	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-88	ND		83	18	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-89	ND		83	16	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-90/101/113	**400**		250	41	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-91	**29**	**J**	83	16	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-92	**54**	**J**	83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-93/100	ND		170	26	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-94	ND		83	13	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-95	**170**	**B**	83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-002 Outfall DP
Date Collected: 08/30/22 17:15
Date Received: 08/31/22 18:39

Lab Sample ID: 410-96341-2
Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-96	ND		83	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-98/102	ND		210	30	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-99	**130**	**B**	83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-103	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-104	ND		83	18	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-105	**350**	**B**	83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-106	ND		83	20	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-107	**50**	**J**	83	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-108/124	**36**	**J**	170	27	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-110/115	**680**	**B**	170	27	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-111	ND		83	13	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-112	ND		83	17	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-114	**20**	**J**	83	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-118	**700**	**B**	83	18	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-120	ND		83	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-121	ND		83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-122	**12**	**J B**	83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-123	ND		83	23	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-126	ND		83	30	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-127	ND		83	7.2	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-128/166	**200**		170	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-129/138/163	**1100**	**B**	250	30	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-130	**79**	**J**	83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-131	**13**	**J**	83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-132	**320**		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-133	ND		83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-134	**44**	**J**	83	18	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-135/151	**120**	**J**	170	33	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-136	**37**	**J**	83	16	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-137	**74**	**J**	83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-139/140	ND		170	20	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-141	**140**		83	6.2	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-142	ND		83	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-143	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-144	ND		83	22	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-145	ND		83	24	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-146	**100**		83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-147/149	ND		170	21	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-148	ND		83	17	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-150	ND		83	20	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-152	ND		83	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-153/168	**640**	**B**	170	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-154	ND		210	47	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-155	ND		83	21	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-156/157	**210**		170	30	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-158	**120**		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-159	ND		83	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-160	ND		83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-161	ND		83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-002 Outfall DP
Date Collected: 08/30/22 17:15
Date Received: 08/31/22 18:39

Lab Sample ID: 410-96341-2
Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-162	ND		83	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-164	**73**	**J**	83	7.2	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-165	ND		83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-167	**65**	**J**	83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-169	ND		83	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-170	**130**		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-171/173	**39**	**J**	170	17	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-172	**23**	**J**	83	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-174	**88**		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-175	ND		83	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-176	**10**	**J**	83	6.2	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-177	**51**	**J**	83	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-178	ND		83	16	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-179	**23**	**J**	83	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-180/193	**210**		170	20	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-181	ND		83	8.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-182	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-183/185	ND		170	23	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-184	ND		83	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-186	ND		83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-187	**75**	**J**	83	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-188	ND		210	49	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-189	ND		83	16	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-190	**23**	**J**	83	17	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-191	ND		83	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-192	ND		83	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-194	**32**	**J**	120	12	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-195	ND		120	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-196	**17**	**J**	120	11	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-197/200	ND		250	14	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-198/199	**36**	**J**	250	19	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-201	ND		410	51	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-202	ND		120	9.3	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-203	**20**	**J**	120	13	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-204	ND		120	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-205	ND		120	7.2	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-206	ND		120	7.2	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB-207	ND		120	10	pg/L		09/14/22 09:32	09/15/22 00:57	1
PCB(C) 208	ND		120	57	pg/L		09/14/22 09:32	09/15/22 00:57	1
DCB Decachlorobiphenyl	ND		1000	250	pg/L		09/14/22 09:32	09/15/22 00:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*41*		*15 - 150*	*09/14/22 09:32*	*09/15/22 00:57*	*1*
PCB-3L	*40*		*15 - 150*	*09/14/22 09:32*	*09/15/22 00:57*	*1*
PCB-4L	*32*		*25 - 150*	*09/14/22 09:32*	*09/15/22 00:57*	*1*
PCB-8L	*42*		*25 - 150*	*09/14/22 09:32*	*09/15/22 00:57*	*1*
PCB-15L	*45*		*25 - 150*	*09/14/22 09:32*	*09/15/22 00:57*	*1*
PCB-19L	*40*		*25 - 150*	*09/14/22 09:32*	*09/15/22 00:57*	*1*
PCB-31L	*52*		*25 - 150*	*09/14/22 09:32*	*09/15/22 00:57*	*1*
PCB-32L	*40*		*25 - 150*	*09/14/22 09:32*	*09/15/22 00:57*	*1*

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-002 Outfall DP
Date Collected: 08/30/22 17:15
Date Received: 08/31/22 18:39

Lab Sample ID: 410-96341-2
Matrix: Water

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-37L	79		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-47L	66		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-54L	47		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-60L	86		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-70L	84		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-77L	90		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-81L	87		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-85L	80		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-95L	77		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-104L	59		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-105L	94		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-114L	94		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-118L	101		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-123L	92		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-126L	89		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-127L	90		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-155L	72		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-156L/157L	90		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-167L	94		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-169L	97		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-180L	105		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-188L	76		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-189L	97		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-202L	70		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-205L	93		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-206L	83		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-208L	76		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-209L	103		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-128L	81		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-133L	87		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-141L	112		25 - 150	09/14/22 09:32	09/15/22 00:57	1
PCB-162L	116		25 - 150	09/14/22 09:32	09/15/22 00:57	1

Isotope Dilution Summary

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB1L	PCB3L	PCB4L	PCB8L	PCB15L	PCB19L	PCB31L	PCB32L
Lab Sample ID	Client Sample ID	(15-150)	(15-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
410-96341-1	22083107-001 Outfall 012	40	42	37	40	43	40	47	46
410-96341-2	22083107-002 Outfall DP	41	40	32	42	45	40	52	40
MB 410-295690/1-A	Method Blank	56	62	52	55	61	56	61	58

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB37L	PCB47L	PCB54L	PCB60L	PCB70L	PCB77L	PCB81L	PCB85L
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
410-96341-1	22083107-001 Outfall 012	62	55	44	65	66	72	70	53
410-96341-2	22083107-002 Outfall DP	79	66	47	86	84	90	87	80
MB 410-295690/1-A	Method Blank	71	63	54	72	71	73	71	57

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB95L	PCB104L	PCB105L	PCB114L	PCB118L	PCB123L	PCB126L	PCB127L
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
410-96341-1	22083107-001 Outfall 012	59	47	71	71	71	69	67	68
410-96341-2	22083107-002 Outfall DP	77	59	94	94	101	92	89	90
MB 410-295690/1-A	Method Blank	72	59	78	78	77	74	74	75

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB155L	156157L	PCB167L	PCB169L	PCB180L	PCB188L	PCB189L	PCB202L
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
410-96341-1	22083107-001 Outfall 012	59	74	73	72	96	69	75	67
410-96341-2	22083107-002 Outfall DP	72	90	94	97	105	76	97	70
MB 410-295690/1-A	Method Blank	74	91	90	89	115	85	93	84

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB205L	PCB206L	PCB208L	PCB209L	PCB128L	PCB133L	PCB141L	PCB162L
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
410-96341-1	22083107-001 Outfall 012	77	73	71	70	71	70	90	87
410-96341-2	22083107-002 Outfall DP	93	83	76	103	81	87	112	116
MB 410-295690/1-A	Method Blank	96	92	91	98	87	83	107	109

Surrogate Legend

PCB1L = PCB-1L
PCB3L = PCB-3L
PCB4L = PCB-4L
PCB8L = PCB-8L
PCB15L = PCB-15L
PCB19L = PCB-19L
PCB31L = PCB-31L
PCB32L = PCB-32L
PCB37L = PCB-37L
PCB47L = PCB-47L
PCB54L = PCB-54L
PCB60L = PCB-60L
PCB70L = PCB-70L
PCB77L = PCB-77L
PCB81L = PCB-81L
PCB85L = PCB-85L
PCB95L = PCB-95L
PCB104L = PCB-104L
PCB105L = PCB-105L
PCB114L = PCB-114L

Isotope Dilution Summary

Client: Phase Separation Science, Inc
Job ID: 410-96341-1
Project/Site: PCB Congeners

PCB118L = PCB-118L
PCB123L = PCB-123L
PCB126L = PCB-126L
PCB127L = PCB-127L
PCB155L = PCB-155L
156157L = PCB-156L/157L
PCB167L = PCB-167L
PCB169L = PCB-169L
PCB180L = PCB-180L
PCB188L = PCB-188L
PCB189L = PCB-189L
PCB202L = PCB-202L
PCB205L = PCB-205L
PCB206L = PCB-206L
PCB208L = PCB-208L
PCB209L = PCB-209L
PCB128L = PCB-128L
PCB133L = PCB-133L
PCB141L = PCB-141L
PCB162L = PCB-162L

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB1L	PCB3L	PCB4L	PCB8L	PCB15L	PCB19L	PCB31L	PCB32L
Lab Sample ID	Client Sample ID	(15-140)	(15-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
LCS 410-295690/2-A	Lab Control Sample	49	53	44	48	51	46	52	50

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB37L	PCB47L	PCB54L	PCB60L	PCB70L	PCB77L	PCB81L	PCB85L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
LCS 410-295690/2-A	Lab Control Sample	65	56	49	65	64	69	66	52

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB95L	PCB104L	PCB105L	PCB114L	PCB118L	PCB123L	PCB126L	PCB127L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
LCS 410-295690/2-A	Lab Control Sample	65	52	71	70	68	66	65	66

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB155L	156157L	PCB167L	PCB169L	PCB180L	PCB188L	PCB189L	PCB202L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
LCS 410-295690/2-A	Lab Control Sample	65	82	80	78	104	76	81	77

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB205L	PCB206L	PCB208L	PCB209L	PCB128L	PCB133L	PCB141L	PCB162L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
LCS 410-295690/2-A	Lab Control Sample	84	80	82	84	78	73	95	95

Surrogate Legend

PCB1L = PCB-1L
PCB3L = PCB-3L
PCB4L = PCB-4L
PCB8L = PCB-8L
PCB15L = PCB-15L
PCB19L = PCB-19L
PCB31L = PCB-31L
PCB32L = PCB-32L
PCB37L = PCB-37L
PCB47L = PCB-47L

Isotope Dilution Summary

Client: Phase Separation Science, Inc
Job ID: 410-96341-1
Project/Site: PCB Congeners

PCB54L = PCB-54L
PCB60L = PCB-60L
PCB70L = PCB-70L
PCB77L = PCB-77L
PCB81L = PCB-81L
PCB85L = PCB-85L
PCB95L = PCB-95L
PCB104L = PCB-104L
PCB105L = PCB-105L
PCB114L = PCB-114L
PCB118L = PCB-118L
PCB123L = PCB-123L
PCB126L = PCB-126L
PCB127L = PCB-127L
PCB155L = PCB-155L
156157L = PCB-156L/157L
PCB167L = PCB-167L
PCB169L = PCB-169L
PCB180L = PCB-180L
PCB188L = PCB-188L
PCB189L = PCB-189L
PCB202L = PCB-202L
PCB205L = PCB-205L
PCB206L = PCB-206L
PCB208L = PCB-208L
PCB209L = PCB-209L
PCB128L = PCB-128L
PCB133L = PCB-133L
PCB141L = PCB-141L
PCB162L = PCB-162L

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Lab Sample ID: MB 410-295690/1-A
Matrix: Water
Analysis Batch: 295994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		200	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-2	ND		200	16	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-3	ND		200	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-4	ND		45	22	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-5	ND		45	20	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-6	ND		40	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-7	ND		40	16	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-8	ND		40	16	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-9	ND		40	17	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-10	ND		45	22	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-11	ND		300	110	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-12/13	ND		80	34	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-14	ND		45	20	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-15	ND		45	20	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-16	ND		40	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-17	ND		40	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-18/30	ND		80	24	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-19	ND		40	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-20/28	ND		80	28	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-21/33	ND		80	29	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-22	ND		40	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-23	ND		40	15	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-24	ND		40	17	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-25	ND		40	13	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-26/29	ND		80	36	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-27	ND		40	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-31	ND		40	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-32	ND		40	8.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-34	ND		40	17	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-35	ND		40	19	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-36	ND		40	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-37	ND		40	8.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-38	ND		40	17	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-39	ND		40	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-40/71	ND		160	16	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-41	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-42	ND		80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-43	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-44/47/65	ND		240	24	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-45	ND		80	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-46	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-48	ND		80	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-49/69	ND		160	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-50/53	ND		300	91	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-51	ND		80	13	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-52	ND		80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-54	ND		80	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-55	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 410-295690/1-A
Matrix: Water
Analysis Batch: 295994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-56	ND		80	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-57	ND		80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-58	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-59/62/75	ND		240	25	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-60	ND		80	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-61/70/74/76	ND		320	30	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-63	ND		80	13	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-64	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-66	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-67	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-68	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-72	ND		80	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-73	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-77	ND		80	19	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-78	ND		80	15	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-79	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-80	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-81	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-82	ND		80	13	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-83	ND		80	15	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-84	ND		80	25	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-85/116/117	ND		240	34	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-86/87/97/109/119/125	ND		480	150	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-88	ND		80	17	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-89	ND		80	15	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-90/101/113	ND		240	40	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-91	ND		80	15	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-92	ND		80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-93/100	ND		160	25	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-94	ND		80	13	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-95	13.2	J	80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-96	ND		80	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-98/102	ND		200	29	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-99	24.8	J I	80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-103	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-104	ND		80	17	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-105	22.1	J I	80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-106	28.1	J I	80	19	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-107	ND		80	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-108/124	ND		160	26	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-110/115	32.3	J	160	26	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-111	ND		80	13	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-112	ND		80	16	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-114	ND		80	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-118	60.4	J	80	17	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-120	ND		80	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-121	ND		80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-122	52.8	J I	80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-123	ND		80	22	pg/L		09/14/22 09:32	09/15/22 02:28	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 410-295690/1-A
Matrix: Water
Analysis Batch: 295994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-126	ND		80	29	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-127	ND		80	7.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-128/166	ND		160	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-129/138/163	47.5	J	240	29	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-130	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-131	ND		80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-132	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-133	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-134	ND		80	17	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-135/151	ND		160	32	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-136	ND		80	15	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-137	ND		80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-139/140	ND		160	19	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-141	ND		80	6.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-142	ND		80	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-143	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-144	ND		80	21	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-145	ND		80	23	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-146	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-147/149	ND		160	20	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-148	ND		80	16	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-150	ND		80	19	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-152	ND		80	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-153/168	33.6	J	160	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-154	ND		200	45	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-155	ND		80	20	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-156/157	ND		160	29	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-158	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-159	ND		80	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-160	ND		80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-161	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-162	ND		80	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-164	ND		80	7.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-165	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-167	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-169	ND		80	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-170	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-171/173	ND		160	16	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-172	ND		80	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-174	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-175	ND		80	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-176	ND		80	6.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-177	ND		80	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-178	ND		80	15	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-179	ND		80	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-180/193	ND		160	19	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-181	ND		80	8.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-182	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-183/185	ND		160	22	pg/L		09/14/22 09:32	09/15/22 02:28	1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 410-295690/1-A
Matrix: Water
Analysis Batch: 295994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-184	ND		80	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-186	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-187	ND		80	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-188	ND		200	47	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-189	ND		80	15	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-190	ND		80	16	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-191	ND		80	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-192	ND		80	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-194	ND		120	12	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-195	ND		120	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-196	ND		120	11	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-197/200	ND		240	14	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-198/199	ND		240	18	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-201	ND		400	49	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-202	ND		120	9.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-203	ND		120	13	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-204	ND		120	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-205	ND		120	7.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-206	ND		120	7.0	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB-207	ND		120	10	pg/L		09/14/22 09:32	09/15/22 02:28	1
PCB(C) 208	ND		120	55	pg/L		09/14/22 09:32	09/15/22 02:28	1
DCB Decachlorobiphenyl	ND		1000	240	pg/L		09/14/22 09:32	09/15/22 02:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*56*		*15 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-3L	*62*		*15 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-4L	*52*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-8L	*55*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-15L	*61*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-19L	*56*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-31L	*61*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-32L	*58*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-37L	*71*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-47L	*63*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-54L	*54*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-60L	*72*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-70L	*71*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-77L	*73*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-81L	*71*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-85L	*57*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-95L	*72*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-104L	*59*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-105L	*78*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-114L	*78*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-118L	*77*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-123L	*74*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-126L	*74*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-127L	*75*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*
PCB-155L	*74*		*25 - 150*	*09/14/22 09:32*	*09/15/22 02:28*	*1*

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 410-295690/1-A
Matrix: Water
Analysis Batch: 295994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295690

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-156L/157L	91		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-167L	90		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-169L	89		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-180L	115		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-188L	85		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-189L	93		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-202L	84		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-205L	96		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-206L	92		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-208L	91		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-209L	98		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-128L	87		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-133L	83		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-141L	107		25 - 150	09/14/22 09:32	09/15/22 02:28	1
PCB-162L	109		25 - 150	09/14/22 09:32	09/15/22 02:28	1

Lab Sample ID: LCS 410-295690/2-A
Matrix: Water
Analysis Batch: 295994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295690

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1	1000	1030		pg/L		103	50 - 150
PCB-3	1000	940		pg/L		94	50 - 150
PCB-4	1000	1020		pg/L		102	50 - 150
PCB-15	1000	980		pg/L		98	50 - 150
PCB-19	1000	1030		pg/L		103	50 - 150
PCB-37	1000	1080		pg/L		108	50 - 150
PCB-54	1000	1040		pg/L		104	50 - 150
PCB-77	1000	1050		pg/L		105	50 - 150
PCB-81	1000	1170		pg/L		117	50 - 150
PCB-104	1000	1190		pg/L		119	50 - 150
PCB-105	1000	1050		pg/L		105	50 - 150
PCB-114	1000	1120		pg/L		112	50 - 150
PCB-118	1000	1080		pg/L		108	50 - 150
PCB-123	1000	1130		pg/L		113	50 - 150
PCB-126	1000	1100		pg/L		110	50 - 150
PCB-155	1000	1140		pg/L		114	50 - 150
PCB-156/157	2000	2100		pg/L		105	50 - 150
PCB-167	1000	1080		pg/L		108	50 - 150
PCB-169	1000	1060		pg/L		106	50 - 150
PCB-188	1000	1010		pg/L		101	50 - 150
PCB-189	1000	1130		pg/L		113	50 - 150
PCB-202	1000	1110		pg/L		111	50 - 150
PCB-205	1000	1020		pg/L		102	50 - 150
PCB-206	1000	869		pg/L		87	50 - 150
PCB(C) 208	1000	918		pg/L		92	50 - 150
DCB Decachlorobiphenyl	1000	1040		pg/L		104	50 - 150

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-1L	49		15 - 140
PCB-3L	53		15 - 140
PCB-4L	44		30 - 140
PCB-8L	48		30 - 140
PCB-15L	51		30 - 140
PCB-19L	46		30 - 140
PCB-31L	52		30 - 140
PCB-32L	50		30 - 140
PCB-37L	65		30 - 140
PCB-47L	56		30 - 140
PCB-54L	49		30 - 140
PCB-60L	65		30 - 140
PCB-70L	64		30 - 140
PCB-77L	69		30 - 140
PCB-81L	66		30 - 140
PCB-85L	52		30 - 140
PCB-95L	65		30 - 140
PCB-104L	52		30 - 140
PCB-105L	71		30 - 140
PCB-114L	70		30 - 140
PCB-118L	68		30 - 140
PCB-123L	66		30 - 140
PCB-126L	65		30 - 140
PCB-127L	66		30 - 140
PCB-155L	65		30 - 140
PCB-156L/157L	82		30 - 140
PCB-167L	80		30 - 140
PCB-169L	78		30 - 140
PCB-180L	104		30 - 140
PCB-188L	76		30 - 140
PCB-189L	81		30 - 140
PCB-202L	77		30 - 140
PCB-205L	84		30 - 140
PCB-206L	80		30 - 140
PCB-208L	82		30 - 140
PCB-209L	84		30 - 140
PCB-128L	78		30 - 140
PCB-133L	73		30 - 140
PCB-141L	95		30 - 140
PCB-162L	95		30 - 140

QC Association Summary

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Specialty Organics

Prep Batch: 295690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96341-1	22083107-001 Outfall 012	Total/NA	Water	1668C	
410-96341-2	22083107-002 Outfall DP	Total/NA	Water	1668C	
MB 410-295690/1-A	Method Blank	Total/NA	Water	1668C	
LCS 410-295690/2-A	Lab Control Sample	Total/NA	Water	1668C	

Analysis Batch: 295994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96341-1	22083107-001 Outfall 012	Total/NA	Water	1668A	295690
MB 410-295690/1-A	Method Blank	Total/NA	Water	1668A	295690
LCS 410-295690/2-A	Lab Control Sample	Total/NA	Water	1668A	295690

Analysis Batch: 296003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96341-2	22083107-002 Outfall DP	Total/NA	Water	1668A	295690

Lab Chronicle

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Client Sample ID: 22083107-001 Outfall 012

Lab Sample ID: 410-96341-1

Date Collected: 08/30/22 17:10

Matrix: Water

Date Received: 08/31/22 18:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1668C			295690	UBKG	ELLE	09/14/22 09:32
Total/NA	Analysis	1668A		1	295994	RGA5	ELLE	09/15/22 09:25

Client Sample ID: 22083107-002 Outfall DP

Lab Sample ID: 410-96341-2

Date Collected: 08/30/22 17:15

Matrix: Water

Date Received: 08/31/22 18:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1668C			295690	UBKG	ELLE	09/14/22 09:32
Total/NA	Analysis	1668A		1	296003	RGA5	ELLE	09/15/22 00:57

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Virginia	NELAP	460182	06-15-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
1668A	1668C	Water	PCB-129/138/163
1668A	1668C	Water	PCB-197/200
1668A	1668C	Water	PCB-40/71

Method Summary

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Method	Method Description	Protocol	Laboratory
1668A	Chlorinated Biphenyl Congeners (HRGC/HRMS)	EPA	ELLE
1668C	Separatory Funnel (Liquid-Liquid) Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Phase Separation Science, Inc
Project/Site: PCB Congeners

Job ID: 410-96341-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-96341-1	22083107-001 Outfall 012	Water	08/30/22 17:10	08/31/22 18:39
410-96341-2	22083107-002 Outfall DP	Water	08/30/22 17:15	08/31/22 18:39

Chain o 410-96341 Chain of Custody **Analyses**

Phase Separation Science, Inc
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

For Questions or issues please contact: Lynn Jackson

W.O. No. : 22083107
Project Location : Ft. Myer, VA
Project Number : 60638596
Report To LOD : No

Report Due On :09/15/22 05:00

Samples Transferred To:
Eurofins Lancaster Labs - PA
2425 New Holland Pike
Lancaster, PA 17601

Part of Eurofins. Transport manager (for courier) S
Phone : 717-656-2300

Lab Sample ID	Field Sample ID	Date Sampled	Time Sampled	Matrix	Analyses Required	Method	Type of Container	Preservative
22083107-001	Outfall 012	08/30/22	17:10	Water	PCB Congeners	E1668	32 OZ N/M G.A.	COOL
22083107-002	Outfall DP	08/30/22	17:15	Water	PCB Congeners	E1668	32 OZ N/M G.A.	COOL

Data Deliverables Required: COA

Perform Q.C. on Sample :

Send Report Attn : reporting@phaseonline.com

Send InvoiceAttn : invoicing@phaseonline.com

Airbill No.: _____ Carrier : EUROFINS

Condition Upon Receipt : _____

Comments :

Samples Relinquished By : _____ Date : _____ Time: _____ Samples Received By : 8/31/22 12:50

Samples Relinquished By: _____ Date : 8/31/22 Time 17:59 Samples Received By: _____

Samples Relinquished By: _____ Date: _____ Time: _____ Samples Received By 8-31-22 1834

1.5°C AP13160 (3) AP

9/15/2022

Login Sample Receipt Checklist

Client: Phase Separation Science, Inc

Job Number: 410-96341-1

Login Number: 96341
List Number: 1
Creator: Kanagy, Nicholas

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	True	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Ft Myer PCB Sampling

PSS Project No.: 22083107

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

22083107: Analyses associated with analyst code 4020 were performed by
Eurofins Lancaster Labs - PA, 2425 New Holland Pike, Lancaster, PA 17601 - PA 36-00037 VA 00187

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

① PSS CLIENT: AECOM | OFFICE LOCATION: Germantown | PSS Work Order #: 22083107 | PAGE 1 OF 1

BILL TO (if different): AECOM | PHONE #: 571-296-9547

CONTACT: Jenny Tolbert | EMAIL: jenny.tolbert@aecom.com

PROJECT NAME: Ftmyer PCB sampling | PROJECT #: 60638596

SITE LOCATION: ~~60638596~~ Fort Myer | P.O. #:

SAMPLER(S): Agrima Poudel | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes: N/A; Analysis/Method Required: EPA Method 1668	
1	outfall 012	8/30/2022	1710	SW	1	G	X	N/A
2	outfall DP	8/30/2022	1715	SW	1	G	X	N/A

⑤

Relinquished By: (1)	Date	Time	Received By:
Agrima	8/31/22	1018	
Relinquished By: (2)	Date	Time	Received By:
	8/31	1200	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)

☒ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☐ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER _____

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Ice Present: PRES

Custody Seal: INTACT-CONTAINERS

Coolers: 1 Temp: 2.3-4.8°C

Shipping Carrier: TE

Special Instructions: CUSTODY SEALS ON COOLER INTACT, NOT DATED OR SIGNED.

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Sample Receipt Checklist

Project Name: Ft Myer PCB Sampling
PSS Project No.: 22083107

Client Name AECOM Technology Corp.
Disposal Date 10/05/2022

Received By Amber Confer
Date Received 08/31/2022 12:00:00 PM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	4.8
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	Agrima Poudel
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Yes
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Yes
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	2
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	2

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: NYLJackson — Lynn Jackson — Date: 08/31/2022

PM Review and Approval: NYLJackson — Lynn Jackson — Date: 08/31/2022