

DEPARTMENT OF VETERANS AFFAIRS LOCH RAVEN AND PERRY POINT VAMC ANNUAL MS4 PROGRESS REPORT

GENERAL DISCHARGE PERMIT NO. 13 SF 5501

GENERAL NPDES NO. MDR05501

OCTOBER 2020

VA PROJECT NO. 512A5 19 010



SUBMITTED TO:

Maryland Department of the Environment
Water and Science Administration
1800 Washington Boulevard
Baltimore, Maryland 21230

VA



U.S. Department
of Veterans Affairs

PREPARED BY:

 **Gordon** 

2020



TABLE OF CONTENTS

1. PERMIT INTRODUCTION 3

 1.A Permit Information3

 1.B Loch Raven Site Information.....4

 1.C Perry Point Site Information.....4

2. SECTION I – IMPERVIOUS AREA RESTORATION REPORTING UPDATES..... 5

 2.A Baseline Impervious Area Assessment Updates.....5

 2.A.1 Existing Impervious Area Updates 5

 2.A.2 Treated Impervious Area Updates 5

 2.A.3 Chesapeake Bay Restoration Requirement Updates 6

 2.B Impervious Area Restoration Work Plan Updates7

 2.C Restoration Activity Schedule Updates.....7

 2.D Urban BMP Database Updates9

 2.D.1 BMP Inspection and Maintenance Updates 9

 2.D.2 BMP As-Builts..... 9

3. SECTION II – MINIMUM CONTROL MEASURES 10

 3.A MCM #1 – Public or Personnel Education and Outreach10

 3.A.1 Water Quality Complaint Process 10

 3.A.2 Target Audience..... 10

 3.A.3 Stormwater Educational Materials 11

 3.A.4 Annual Employee Training Program..... 15

 3.B MCM #2 – PUBLIC OR PERSONNEL INVOLVEMENT AND PARTICIPATION 16

 3.B.1 Target Audience..... 16

 3.B.2 Personnel Involvement and Participation..... 16

 3.B.3 Progress Report Distribution and Comments 18

 3.B.4 Regulated Activity..... 18

 3.C MCM #3 – Illicit Discharge Detection and Elimination (IDDE) 19

 3.C.1 MS4 Outfall Map Updates 19

 3.C.2 MS4 Policy 19

 3.C.3 Storm Sewer System Access and Maintenance 19

 3.C.4 IDDE Standard Operating Procedure (SOP) 20

 3.C.5 IDDE Year 1 and Year 2 Results 21

 3.D MCM #4 – Construction Site Stormwater Runoff Control.....22

 3.D.1 Erosion and Sediment Control Plans..... 22

 3.D.2 Construction Activity Complaints..... 22



- 3.D.3 Erosion and Sediment Control Plan (Grading Permit) Tracking..... 23
- 3.D.4 Responsible Personnel Certification 24
- 3.E MCM #5 – Post Construction Stormwater Management25
 - 3.E.1 Stormwater Management Plan Submissions..... 25
 - 3.E.2 Plans and As-builts..... 25
 - 3.E.3 BMP Inspection and Maintenance Training 25
 - 3.E.4 Urban BMP Database Updates 26
- 3.F MCM #6 – Pollution Prevention and Good Housekeeping27
 - 3.F.1 Good Housekeeping Standard Operation Procedure (SOP) 27
 - 3.F.2 Pollution Prevention Efforts..... 27
 - 3.F.3 Maryland General Permit for Stormwater Discharges Associated with Industrial Activity 29
- 4. CONCLUSION 30
 - A – MDE PROGRESS REPORT FORMS31
 - B –YEAR 1 COMMENT RESPONSE LETTER32
 - C – IMPERVIOUS AREA RESTORATION WORK PLAN33
 - D – IMPERVIOUS AREA BASELINE IMPERVIOUS COMPUTATIONS34
 - E – RESTORATION ACTIVITY SCHEDULE.....35
 - F – URBAN BMP DATABASES AND AS-BUILT INFORMATION36
 - G – MCM #1 – PUBLIC/PERSONNEL EDUCATION AND OUTREACH37
 - H – MCM #2 – PUBLIC/PERSONNEL INVOLVEMENT AND PARTICIPATION.....38
 - I – MCM #3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)39
 - J – MCM #4 – CONSTRUCTION SITE STORMWATER RUNOFF CONTROL.....40
 - K – MCM #5 – POST CONSTRUCTION STORMWATER MANAGEMENT41
 - L – MCM #6 – POLLUTION PREVENTION AND GOOD HOUSEKEEPING.....42



1. PERMIT INTRODUCTION

1.A Permit Information

The Maryland Department of Environment (MDE) Water and Science Administration issued the *National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from State and Federal Small Municipal Separate Storm Sewer Systems (MS4)* (herein referred to as the “MS4 Permit”) in October 2018 to regulate stormwater discharges. The Veterans Affairs (VA) Maryland HealthCare System (VAMHCS) is covered under this permit for both the Loch Raven and Perry Point Medical Centers (VAMCs).

The VA is required to comply with the conditions of the general permit, effective from October 31, 2018 to October 30, 2023. This report meets the MS4 Permit requirement to submit an annual progress report demonstrating compliance with the permit conditions and constitutes the second annual Progress Report for the VA.

The goal of the NPDES MS4 General Permit is to improve the quality of stormwater runoff being discharged from state and federal properties and to meet the federal Clean Water Act (CWA) requirements. The U.S. Environmental Protection Agency (EPA) established water quality goals for the Chesapeake Bay and its tributaries through Total Maximum Daily Load (TMDL) requirements for reducing nitrogen, phosphorus, and sediment. A Watershed Implementation Plan (WIP) was developed by Maryland and lays out the approach that the state will use to meet the pollutant load reductions required to address the Chesapeake Bay TMDL. Based on the WIP strategy, pollutant load reductions from urban stormwater runoff from state and federal small MS4s would be achieved through the Chesapeake Bay Restoration and Meeting TMDLs requirement of the MS4 Permit.

This permit helps to address the WIP goals, as well as requirements of the CWA. This report is separated into two (2) main sections to address the requirements of the MS4 permit: Section 1 is the impervious area assessment that addresses the Chesapeake Bay Restoration TMDL requirements and compliance, and Section 2 is the six Minimum Control Measures (MCM) for controlling pollutants in stormwater runoff.

This Year 2 Progress Report includes updates to the Section 1 items, includes updates based on MDE comments received on the Year 1 Progress Report, and the first reporting on the Section 2 activities. This Progress Report also addresses the MDE comments issued on September 2, 2020.

The Year 2 MDE progress report forms are included in **Appendix A**. The MDE comment responses on the Year 1 Progress Report are included in **Appendix B**.

1.B Loch Raven Site Information

The Loch Raven VAMC is in northeast Baltimore, MD between Loch Raven Boulevard and The Alameda. This facility offers specialized inpatient, outpatient, and primary care services and specializes in providing rehabilitation and post-acute care for patients in the VAMHCS. Loch Raven also provides hospice and nursing home care to Maryland's Veterans.

Loch Raven is comprised of a large, centrally located inpatient residence and rehabilitation building, a community-based outpatient clinic, a research building, the FMS/Police Department building, and two ancillary buildings. Loch Raven operations use diesel fuel for heating and running emergency generators and hydraulic fluid associated with the elevators. Loch Raven is currently a small quantity generator of hazardous waste but will soon be classified as a large quantity generator with the opening of the Pharmacy.



Google Street Viewer | Loch Raven Medical Center

1.C Perry Point Site Information

The Perry Point VAMC is in Perryville, MD adjacent to the Susquehanna River and Chesapeake Bay. This facility is the largest inpatient facility in the VAMHCS and provides a variety of services, including inpatient medical, intermediate, outpatient, primary care, and long-term care programs. Perry Point also provides mental health care, including specialized treatment programs.

Perry Point is comprised of a main hospital facility and dozens of ancillary buildings, including a drinking water plant, heating plant, and chiller plant. Perry Point operations involve the storage and use of diesel fuel for boiler operation, running emergency generators, storage and use of diesel fuel for onsite equipment vehicle fueling, cafeteria operations, oil-filled operational equipment comprised of hydraulic elevator reservoirs and electrical transformers, and new and used oil generated during automotive maintenance activities.

Perry Point is considered a large quantity generator of hazardous wastes comprised of unusable or expired facility maintenance and laboratory chemicals, expired hygiene chemicals, waste building material, waste pharmaceuticals, and clinical hazardous wastes.



Google Photos, by Scott Osborn | Perry Point Medical Center



2. SECTION I – IMPERVIOUS AREA RESTORATION REPORTING UPDATES

2.A Baseline Impervious Area Assessment Updates

Per *Part V.A* of the MS4 Permit, the VA must develop and update, as needed, the baseline impervious area assessment.

2.A.1 Existing Impervious Area Updates

The initial impervious area delineation was established as documented in the Year 1 Progress Report using the best available land use data for the baseline year of 2019. No updates to the impervious area delineation are required for this Year 2 Progress Report. The impervious area delineation has been verified with a combination of field visits, desktop analysis, and review of the development plans.

2.A.2 Treated Impervious Area Updates

For Loch Raven, as noted in the Year 1 Progress Report response to MDE comments in **Appendix B**, the New Ramp and Patio project completed in 2015 removed 0.12 acre of impervious cover. The impervious area removal was accounted for in the computations as follows:

- 0.12 acres of impervious area was added to the baseline impervious area
- 0.05 acre (removed to meet the project new development requirements) was deducted from total baseline impervious area
- 0.07 acre (removed to meet the project redevelopment project requirements) was counted towards restoration requirements.

For Perry Point, as noted in the Year 1 Progress Report response to MDE comments in **Appendix B**, the credit multiplier for new development BMPs credited towards the baseline requirement has been reduced to 1 inch for any BMPs providing treatment in excess of the 1 inch storm. Therefore, the impervious treated area that can be applied as baseline treatment has reduced. This treatment is provided by 23 existing environmental site design (ESD), structural, and alternative BMPs onsite at Perry Point, including micro-bioretentions, bio-swales, grass swales, and disconnection of rooftop runoff.

Since the Year 1 Progress Report, there is no new treated impervious area at either Loch Raven or Perry Point. The existing BMPs have continued to pass inspections and have been regularly maintained, therefore no reduction to the credits are proposed.

Table 1 shows the updated data related to the BMP credits toward the baseline requirements at both sites. Updated baseline computations for Loch Raven and Perry Point are included in **Appendix D**.



Table 1: Updated Impervious Area Treatment Credit (Baseline)			
Type of Practice	Loch Raven (acres)	Perry Point (acres)	TOTAL (acres)
Toward baseline requirement			
ESD	0.00	4.03	4.03
Structural	1.33	0.00	1.33
Alternative	0.04	0.00	0.04

2.A.3 Chesapeake Bay Restoration Requirement Updates

See below updates to the Chesapeake Bay Restoration Requirement. The MS4 permit mandates restoration of 20 percent of the untreated impervious areas identified in the baseline assessment. Table 3 provides the updated restoration target, as calculated as 20 percent of the untreated baseline impervious area. Updated baseline computations for Loch Raven and Perry Point are included in **Appendix D**.

Table 2: Updated Summary Restoration Requirement				
	Description	Impervious Area (acres)		
		Loch Raven	Perry Point	Total
A	Impervious Area Baseline	8.52	82.78	91.30
B	Impervious area treated by stormwater quality BMPs	1.37	3.96	5.33
C	Impervious area treated by BMPs providing partial water quality treatment	0.00	0.02	0.02
D	Impervious area treated by NDNRs, NDRRs, and NSCAs	0.00	0.05	0.05
E = B + C + D	Existing treated impervious area	1.37	4.03	5.40
F = A - E	Existing untreated impervious area	7.15	78.75	85.90
G = 0.2 * F	20% Restoration Requirement	1.43	15.75	17.18



2.B Impervious Area Restoration Work Plan Updates

Per *Part V.B* of the MS4 Permit, the VA must submit an annual Impervious Area Restoration Work Plan. The purpose of the Work Plan is to serve as a roadmap to meeting the Chesapeake Bay Restoration TMDL requirements. No updates to the Work Plan from the Year 1 Progress Report are proposed. The Work Plan is included in **Appendix C**.

In Year 2, progress towards the management strategies and goals includes:

- Refine restoration work plan
 - No refinements to the restoration work plan are proposed at this time
- Updates to the Urban BMP database
 - See updates to the urban BMP database as outlined in **Section 2.D** and **Appendix F** of this Progress Report
- Continued inspection and maintenance of all existing BMPs onsite. Includes keeping records of maintenance activities.
 - See documentation of continued inspection and maintenance efforts in the Urban BMP database in **Section 2.D** and **Appendix F** of this Progress Report
- Incorporate future growth site-wide into the restoration planning efforts.
 - The VA will continue to evaluate future planned growth on the Loch Raven and Perry Point sites and determine how those projects will be incorporated into the restoration planning efforts. There is no definitive timeline for any large planned growth at either site at this time. It is also assumed that any development projects will adhere to current MDE requirements and treat new impervious area onsite.

2.C Restoration Activity Schedule Updates

Per *Part V.C* of the MS4 Permit, the VA must develop and update, as needed, a restoration activity schedule.

For Loch Raven, no changes are warranted. See response in **Section 2.A.2** above and **Appendix D**.

For Perry Point, as noted in the Year 1 Progress Report response to MDE comments in **Appendix B**, the shoreline management credit has been reduced. In the Year 1 Progress Report, the shoreline management credit was reported per MDE's *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Guidance for National Pollutant Discharge Elimination System Stormwater Permits*, dated August 2014, as adopted by the Phase 2 permit in Table B.4, and as coordinated with MDE during the development of the Year 1 Progress Report. In the Year 1 Progress Report comments, MDE has indicated that they have a Department policy to allow stone revetment systems, like the one at Perry Point, a reduced credit of 0.01 acre per linear foot of managed shoreline, reflecting the more limited benefits compared to living shorelines. MDE referenced the guidance from the Chesapeake Bay program report titled *Recommendations of the Expert Panel to Define Removal Rates for Shoreline Management Projects* last amended in June 2017, for proposing the reduction in credit.

Table 3 shows the data related to the BMPs credited towards the restoration requirements at both sites.



Table 3: Updated Impervious Area Treatment Credit (Restoration)			
Type of Practice	Loch Raven (acres)	Perry Point (acres)	TOTAL (acres)
Toward restoration requirement			
ESD	0.00	0.86	0.86
Structural	0.00	0.00	0.00
Alternative	0.05	29.19	29.24

While the restoration requirement was initially evaluated individually for each site, ultimately the restoration goal is applied to the entire permit. The existing BMP credits exceed the 20% requirement for both sites, therefore neither Loch Raven nor Perry Point are required to implement additional restoration projects during the current permit term. Table 4 shows the updated summary for meeting the Chesapeake Bay Restoration requirements.

Table 4: Updated Summary for Chesapeake Bay Restoration Requirements				
	Description	Impervious Area (acres)		
		Loch Raven	Perry Point	Total
A	20% Restoration Requirement	1.43	15.75	17.18
B	Provided Restoration Impervious Area Treated	0.05	30.05	30.1
C	Remaining Restoration Requirement			(12.92) Excess credits

The Restoration Activity Schedule for Loch Raven, Perry Point, and a combined summary is included in **Appendix E**. The Restoration Activity Schedule will continue to be updated annually, as needed, and resubmitted to MDE with the annual Progress Report.



2.D Urban BMP Database Updates

Per *Part V.D* of the MS4 Permit, the VA must develop and update, as needed, an urban BMP database. The database BMP IDs have been slightly modified to address MDE comments on the Year 1 Progress Report. An updated BMP database for Loch Raven and Perry Point is included in **Appendix F**.

2.D.1 BMP Inspection and Maintenance Updates

At Loch Raven, the structural repairs on BMP USLR20BMP0003 are slated to be completed by the end of October 2020. Therefore, no changes to the crediting computations are required. The VA has also worked to procure a 3rd party maintenance company for a 5-year contract. The 3rd party will be responsible for all annual inspections and maintenance requiring confined space entry. The VA will be responsible for the inspections after a major storm event.

At Perry Point, the three (3) previously identified bioretentions have been implemented and are fully functional. The VA is in the process of securing as-builts, to be submitted to MDE upon completion. Additional plantings have been added to multiple facilities onsite in October 2020.

The inspection and maintenance checklists are living documents, with minor edits made since the Year 1 Progress Report submission. The VA continues to keep the maintenance and inspection records onsite.

2.D.2 BMP As-Builts

A spreadsheet tracking the available as-built plans for the existing BMPs at Loch Raven and Perry Point is included in **Appendix F**.

At Loch Raven, there are no available as-builts. The VA is working to exhaust all administrative searches for these as-builts. The majority of the BMPs are underground and will require confined space entry or scanning to obtain as-built information.

At Perry Point, the majority of the BMPs have as-builts. Five (5) BMPs are associated with a project that is in the final stages of construction, and the as-built is considered pending. Two (2) of the BMPs were constructed prior to 2002 and are taking no credit with this permit. One (1) BMP requires either a surveyed as-built or an engineer comprehensive inspection, as described in the MDE memo titled *Stormwater Best Management Practices (BMPs) and Completion Dates for MS4 Permitting Purposes*, dated 5/2/2008

The VA is working to develop a plan to obtain the remaining as-built information, including determining a funding source. The VA is committed to obtaining the remaining as-built information by the end of this permit cycle in October 2023. This has been identified as work plan item in the Restoration Work Plan, see **Appendix C**.



3. SECTION II – MINIMUM CONTROL MEASURES

3.A MCM #1 – Public or Personnel Education and Outreach

Permittees are required to implement and maintain a public/personnel education and outreach program and distribute education materials to the target audience to help reduce the discharge of pollutants caused by stormwater runoff, in accordance with *Part IV.A* of the MS4 permit. Outreach is essential to keep stakeholders informed and engaged with key issues at the VA. See supplementary materials in **Appendix G**.

Please note, per the VA Governance Policy, all policies and standard operating procedures related to this MS4 permit will be grouped into a singular policy. The term “standard operating procedure” will be replaced with “process”. The MS4 policy is the main policy document, and there are four (4) appendices for the processes: illicit discharge detention and elimination (IDDE), good housekeeping, permit tracking, and BMP inspection and maintenance.

3.A.1 Water Quality Complaint Process

Per *Part IV.A.1* of the MS4 permit, the VA must develop a process by which the public and/or staff can report water quality complaints.

The VA has established a system for receiving and addressing any water quality complaints. The system is outlined in a newly developed guidance document entitled MS4 Permit Tracking. Facility residents, staff, patients, or the general public may report complaints to VAMHCSGEMSPProgram@va.gov or by phone at (410) 642-2411, extension 25227 or (410) 605-2000, extension 53053. These complaints are investigated, and a resolution is reported back to the complainant, if appropriate. A water quality complaint tracker has been developed to help document these water quality complaints.

A copy of the water quality complaint and the governing guidance document is included in **Appendix G**.

3.A.2 Target Audience

Per *Part IV.A.2* of the MS4 permit, the VA must identify the target audience for stormwater education materials.

The target audience for the education and outreach materials includes the following entities:

- Veterans, including patients
- Visitors
- Residents
- VA employees
 - Facilities and Engineering Service
 - Includes Grounds Crew at Perry Point (Grounds Crew activities are contracted at Loch Raven)
 - Fire department (Perry Point only)
 - Police department
 - Medical employees
 - Food service providers
 - Contractors
- Nearby communities, if future opportunities arise



3.A.3 Stormwater Educational Materials

Per *Part IV.A.3* of the MS4 permit, the VA must distribute stormwater education materials to the target audience.

3.A.3.1 Outreach Methods and Topics

To reach the VA's target audience, a variety of distribution methods and presentation formats have been utilized for education and outreach materials. The VA selects a format and distribution method for each educational tool based on the subgroup of the target audience. Many of the outreach materials are presentable in multiple formats, which allows for flexibility in distribution. The Green Environmental Management System (GEMS) Managers leads the outreach effort in close coordination with the following entities: Public Relations, Facilities and Engineering Maintenance and Operations, Facilities and Engineering Projects, and Environmental Management Services (EMS).

For personnel that are on site regularly, such as residents and staff, physical materials like signs, brochures, flyers, and posters are the most effective. Signs and posters can be permanent or semi-permanent fixtures outside or inside of buildings. Brochures and flyers can be physically or virtually distributed and can be part of an ongoing campaign related to stormwater pollution prevention and education. For consistent interaction with VA staff, distribution via the VAMHCS Insider newsletter provide the most available format for education and outreach. Other formats include emails and virtual training sessions. For nearby residents or visitors who may interact with the VA, publishing materials on the GEMS website is the most effective.

The VA currently utilizes posters, articles, and employee training to most frequently outreach with the VA target audience. Some of the physical distribution have been paused due to COVID-19, but the VA plans to resume when appropriate. In the future, the VA wants to expand their reach by implementing signs, a GEMS MS4 permit webpage, and storm drain stenciling.

Table 3-1 describes the VA outreach plan by topic for education and outreach, the target audience, and the means of distribution. Many of these have already been implemented, see **Sections 3.A.3.2** and **3.A.3.3** below. Future plans are outlined in **Section 3.A.1.4** below.



Table 5: Public Education and Outreach Messages and Distribution Methods			
Topic	Messages	Target Audiences	Distribution Methods
Oil and grease, hydrocarbons, and related pollutants	<ul style="list-style-type: none"> • Take care of your vehicle - poorly maintained vehicles pollute waterways • Clean up spills – do not let oils get into storm drains • Use good housekeeping BMPs in work areas to prevent leaks and spills • Properly manage food service waste oil and grease 	<ul style="list-style-type: none"> • Facilities and Engineering Service • Fire and Police departments • Food service providers • Contractors 	<ul style="list-style-type: none"> • Signs • Posters • Brochures • Articles • Employee training • GEMS Website • Storm drain stenciling
Sediment	<ul style="list-style-type: none"> • Sediment pollutes waterways and harms aquatic life • Monitor and maintain sediment controls on construction sites • Do not over-apply de-icing salt mix • Sweep roads and parking lots • Report sediment discharges 	<ul style="list-style-type: none"> • Facilities and Engineering Service • Fire and Police Depts • Contractors • Residents 	<ul style="list-style-type: none"> • Posters • Brochures • Articles • Employee training • GEMS Website
Trash and Litter	<ul style="list-style-type: none"> • Do not litter – what you drop on the ground ends up in storm drains and all drains lead to waterways • Only rain down the drain • Cigarette butts are litter, too • Properly dispose of trash and wastes – use appropriate receptacles • Recycle as much as you can • Keep dumpsters covered 	<ul style="list-style-type: none"> • All Employees • Residents • Veterans 	<ul style="list-style-type: none"> • Signs • Posters • Brochures • Articles • Employee training • GEMS Website • Storm drain stenciling
Fertilizers and Pesticides	<ul style="list-style-type: none"> • Read the container for proper mixing, application, and storage/disposal methods • Keep chemicals away from the storm drains • Apply chemicals during dry weather to prevent transportation of chemicals by runoff 	<ul style="list-style-type: none"> • Facilities and Engineering Service 	<ul style="list-style-type: none"> • Employee Training • Fact sheet • Article
Reporting Issues	<ul style="list-style-type: none"> • If you see something, say something • Report issues related to water quality to VAMHCSGEMSPprogram@va.gov 	<ul style="list-style-type: none"> • All Employees • Residents • Veterans 	<ul style="list-style-type: none"> • Signs • GEMS Website

3.A.3.2 Past Stormwater Education and Outreach Materials (pre-October 2018)

In the past, the VA has developed both event-specific and general educational/promotional materials. Since 2016, the VA created an annual Earth Day presentation that celebrated environmental events the VA hosted during the year. Each year, this presentation was updated with new photos from the events and sent to VA employees and contractors. Other promotional materials were developed to advertise events such as the Shoreline Cleanup and Earth Week Celebration to garner awareness and participation for the events.



3.A.3.3 Current Stormwater Education and Outreach Materials (October 2018 to October 2020)

From the start of the permit term, the VA has distributed a number of education and outreach materials. These education and outreach materials are included in **Appendix G**.

Year 1

The VA continued their outreach surrounding Earth Day. The presentation highlighted the Earth Day events at the Baltimore and Perry Point VAMC.

The VA also developed a GEMS awareness presentation to promote understanding and coordination with the GEMS program at the VA. The GEMS committee are exemplary stewards for the environment to help provide a healthy environment for VA patients, visitors, and employees.

The VA Medical Centers also have unique hazardous and medical waste operations. The GEMS committee gives extensive training to medical, dental, pharmaceutical, and laboratory staff as well as non-medical staff such as sterilization processing, warehouse, Facilities and Engineering, and Safety on how to handle these waste materials and distributes brochures and other informational materials to help guide VA medical staff on topics related to proper disposal of hazardous waste.

Year 2

The VA also has a robust tree planting program, and Perry Point was recognized as a Maryland Department of Natural Resources (DNR) Tree Campus Healthcare facility, thanks to the extensive yearly efforts from the Perry Point Grounds Crew and the GEMS program. The announcement was published in the Modern Healthcare website with a newspaper article.

In 2020, the Earth Day celebration was disrupted due to the COVID-19 pandemic. The VA adapted to the virtual environment and distributed both an article and a poster to connect with their employees.

A poster was created to outline what the VA is doing to protect Maryland's waters, including monitoring and cleaning storm drain inlets, conducting shoreline cleanups, water sampling, tree planting, and installing green stormwater practices that treat runoff. Due to COVID-19, the poster was distributed to all VAMHCS employees through the VAMHCS Insider Newsletter and will be uploaded to the GEMS webpage. Once authorized, the poster will be posted in various locations around the Loch Raven and Perry Point VAMCs.

A newsletter article titled *How Can We Celebrate Earth Day when there's a Global Pandemic going on?* was created to outline what VA employees can do to celebrate Earth Day, since the Earth Day celebration in 2020 was cancelled due to COVID-19. The article provided creative ways for employees to stay involved and educate themselves on how they can help the planet while maintaining social distancing and supporting COVID-19 prevention. The article was distributed to all VAMHCS employees through the VAMHCS Insider Newsletter, was emailed to past Earth Day Cleanup volunteers, and will be posted to the GEMS webpage in the near future.

The GEMS committee also gave an update to the VA Executive Committee. The presentation discussed the extensive VA efforts over the last 2 years to develop a robust MS4 program and maintain compliance with the MS4 permit requirements.



The VA also periodically updates the adjacent Town of Perryville mayor on the VA's MS4 permitting efforts. An update was given to the Town of Perryville mayor at their quarterly meeting in April of 2020.

This outreach complements and strengthens the other programs in the MS4 permit, as required per *Part IV.A.5* of the MS4 permit. These outreach materials not only highlight what the VA is doing to protect water quality, but also educate the target audience on what they can do to support the VA efforts. The outreach materials also help advertise events, such as the Earth Day celebration and shoreline cleanups, where the VA community can engage with each other and help the environment.

3.A.3.4 Future Stormwater Education and Outreach Materials (October 2020 to October 2023)

In future years, the VA plans to diversify their communication methods with the target audience. A draft of some of these education and outreach materials are included in **Appendix G**.

Signage for existing BMPs at both Loch Raven and Perry Point are in development. These signs will serve multiple purposes, including identification of the facility for Grounds Crews, education on how the BMPs help protect water quality, identification of prohibited activities in and around the BMPs, and documentation of contact information for the GEMS committee.

The VA has also received draft approval to develop a MS4-specific webpage to be linked from the GEMS webpage. The plan is to launch the website in early 2021.

Due to the increase in remote working and adjusted work hours in response to the COVID-19 pandemic, the VA plans to continue to develop education and outreach materials that can be distributed electronically until in-person communication methods can be resumed.

The VA is also working to transition their existing training programs to their virtual Talent Management System (TMS) program, which will allow for more self-guided training in lieu of, or in addition to an in-person training environment.

The VA has developed this plan with the intent that it can be adapted as time, personnel availability, and budget allow. Ultimately, materials and training will be developed to be effective at reaching the most people within the target audience as possible under developing circumstances.



3.A.4 Annual Employee Training Program

Per *Part IV.A.4* of the MS4 permit, the VA must develop and implement an annual employee training program that addresses topics to prevent or reduce the discharge of stormwater pollution. In addition, per *Part IV.F.1* of the MS4 permit, the VA must ensure that all appropriate staff and contractors receive annual training designed to reduce or eliminate the discharge of pollutants during regular operations.

The VA has an extensive employee training program for a variety of topics, including pharmaceutical waste management and regulated medical waste, hazardous waste/spills, above ground and underground storage tanks, universal waste, infectious waste, GEMS awareness, and construction. These trainings reach a wide range of VA employees. Some trainings are given to all employees and some trainings are given to the applicable subset of VA employees.

In Year 1, the VA developed additional training slides that were incorporated into existing training programs, such as the new employee training orientation and GEMS awareness training, that focused on stormwater pollution, pollution effects on the Chesapeake Bay, and pollution prevention techniques.

In Year 2, the VA worked to develop a stand-alone water quality training program to educate VA staff on effective best management practices to reduce the discharge of pollutants during site operations at Loch Raven and Perry Point. The goal is to launch this training in Year 3 of this MS4 permit. This training will cover a multitude of topics, including the following:

- Causes of stormwater pollution and its impact on water resources
- NPDES MS4 permit
- Key responsibilities of VA employees
- Pollution prevention/control measures
 - Spill prevention and response
 - Good housekeeping practices
 - Erosion and sediment control practices
 - Green practices
 - Equipment and material storage
- Illicit discharges – detection and reporting

This existing and planned future training complements and strengthens the other programs in the MS4 permit to specifically engage the target audience, as required per *Part IV.A.5* of the MS4 permit. This training focuses specially on what VA employees need to do to comply with the applicable rules and regulations. There are many regulations and requirements, so these training programs help to educate VA employees on how to comply. These trainings are held on an annual basis to consistently remind VA employees of their responsibilities and provide updates as rules and regulations evolve.

A full list of the training programs hosted by the VA prior to October 2018 and within this permit cycle is included in **Appendix G**.



3.B MCM #2 – PUBLIC OR PERSONNEL INVOLVEMENT AND PARTICIPATION

3.B.1 Target Audience

Per *Part IV.B.1* of the MS4 permit, the VA must determine the target audience for personnel involvement and participation.

The target audience for personnel involvement and participation includes the following entities:

- VA employees
 - Facilities and Engineering Service
 - Includes Grounds Crew at Perry Point (Grounds Crew activities are contracted at Loch Raven)
 - Fire department (Perry Point only)
 - Police department
 - Medical employees
 - Food service providers

3.B.2 Personnel Involvement and Participation

3.B.2.1 Involvement and Participation Plan

Per *Part IV.B.2* of the MS4 permit, the VA must determine specific activities for participation from the target audience. Per *Part IV.B.3* of the MS4 permit, the VA must host at least five (5) events prior to the end of the permit term in October 2023.

The VA conducts several types of activities and events to encourage participation from the target audience. Activities may be virtual or in person. Activities may be event specific or general. For example, the VA may center activities around a holiday or time of year or may focus an event on a theme. Holidays like Earth Day, Arbor Day, the Fourth of July, Veteran's Day, and the changing of seasons are among the most appropriate for the permit requirements. To encourage a good turnout and measurable participation, incentives and advertisement will be necessary to promote events.

VA events will primarily be targeted at a specific sub-group of the larger audience due the wide variety of personnel missions and responsibilities.

3.B.2.2 Past Events (pre-October 2018)

The VA has hosted events at Perry Point for many years, including an Earth Day celebration, shoreline cleanup, and extensive tree planting event. During these events, the VA engages a wide audience to volunteer for physical activities or participate in informational presentations. Events are primarily sponsored by the GEMS Managers and reach many of the GEMS committee members and facilities personnel.

3.B.2.3 Current Events (October 2018 to October 2020)

Year 1

The VA hosted events at both the Loch Raven and Perry Point Medical Centers in 2019. This was an expansion from past years when most events were centered at only Perry Point. The VA hosted an Earth Day celebration at both facilities and a shoreline cleanup and tree



planting event at Perry Point. During these events, the VA engages a wide audience to volunteer for physical activities or participate in informational presentations. Events are primarily sponsored by the GEMS Managers and reach many of the GEMS committee members and facilities personnel.

Documentation of some of these events is included in **Appendix H**.

Year 2

The traditional VA events were cancelled in 2020 due to the COVID-19 pandemic. The VA hopes to resume these activities in 2021, pending the end of the VA emergency order.

3.B.2.4 Future Events (October 2020 to October 2023)

The VA hopes to implement new participation events in this permit term. Table 4-1 outlines some of those potential events.

Event	Description	Audiences
Storm Drain Stencilling	Stencilling of storm drains at Loch Raven and Perry Point to indicate connection to the Chesapeake Bay	Facilities and Engineering Service
Facility Trash Pickup	Trash and debris removal around Loch Raven and Perry Point facilities. This event could be paired with proper trash and recycling disposal training/information session. The VA could also collaborate with neighboring communities recycling and disposal services to give information to residents regarding acceptable recycling items.	All Employees
Virtual Town Hall	Annual meetings with subgroups of the larger target audience to discuss the stormwater permit, role of the target audience, and future directions for the VA GEMS program and stormwater management program.	All Employees

Hosting events and activities requires significant planning, funding, and staffing. Therefore, activities and events may be staggered towards the latter half of the permit term to ensure proper personnel and funding are available to the VA. The 2020 fiscal year has been significantly disrupted by the COVID-19 pandemic, so it may be appropriate to initially focus on virtual events. Once funding is secured and social distancing restrictions are eased, the VA may host an event, if possible. In 2021 and 2022, the larger events will likely be focused around Earth Day.



3.B.3 Progress Report Distribution and Comments

Per *Part IV.B.4* of the MS4 permit, the VA must make the MS4 annual progress report available for public comment. The VA must also consider any substantive comments received regarding the VA's MS4 permit program.

The VA plans to post the Year 1 and Year 2 Annual Progress Report on the MS4 specific webpage to be linked from the GEMS webpage once the website has been launched. The website draft has been approved and is in web development.

3.B.4 Regulated Activity

Per *Part IV.B.5* of the MS4 permit, the VA must comply with all State and federal public notice requirements for any regulated activity associated with the MS4 permit. The VA did not have any activities in Year 1 or Year 2 of this permit that required public notice.

The VA has continued coordination efforts with MDE permit staff to discuss this MS4 permit compliance, future efforts, and comment response to the Year 1 Progress Report comments. The VA also frequently communicates with state agencies regarding other permits that the VA holds, including the 17 HT permit, that has many overlapping responsibilities. During this permit year, no other coordination with local, state, or federal agencies was required for regulated activities associated with this MS4 permit.



3.C MCM #3 – Illicit Discharge Detection and Elimination (IDDE)

3.C.1 MS4 Outfall Map Updates

Per *Part IV.C.1* of the MS4 permit, the VA must develop and maintain an outfall map of the MS4 that identifies all stormwater conveyances, outfalls, stormwater BMPs, and the waters of the U.S. receiving stormwater discharges.

The VA maintains maps of the Loch Raven and Perry Point MS4s. All features, including stormwater conveyance pipes, structures, outfalls, and BMPs have been mapped to reflect current conditions. These maps are updated annually to reflect any changes to the site. The current outfall maps are included in **Appendix I**.

3.C.2 MS4 Policy

Per *Part IV.C.2* of the MS4 permit, the VA must establish a policy that prohibits illicit discharges into the MS4.

The VA developed a MS4 policy applicable to stormwater issues related to site operations, including potential illicit discharges. This policy will be available to all VA employees on the VA Intranet. The policy specifically prohibits illicit discharges, including illegal dumping, from any VAMHCS property.

In this policy, the VA outlines what is classified as an illicit discharge and offers VAMHCSGEMSPProgram@va.gov as a resource for reporting suspicious or known illicit discharges. The policy defines potential illicit discharges as including, but not limited to:

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

Exceptions to the illicit discharge rule include water from firefighting activities, hydrant and potable water line flushing, landscape watering, and groundwater or spring water. Upon observation or report of a potential illicit discharge, the VA begins an investigation so that the source is identified and eliminated, and the discharge is prevented from leaving VA property.

The MS4 policy is included in **Appendix I**.

3.C.3 Storm Sewer System Access and Maintenance

Per *Part IV.C.3* of the MS4 permit, the VA must maintain access to the storm sewer system on the Loch Raven and Perry Point properties to allow for investigation and elimination of any illicit discharges.

During IDDE testing, VA maintenance personnel are available to assist with testing at outfalls that require special equipment to access. For instance, manhole lifting tools and equipment are readily available, and maintenance staff are on-call to assist with removing access covers. All outfalls at Loch Raven are located on VA property, so coordination with adjacent property owners is not necessary. The majority of the outfalls at Perry Point are located on VA property, though there are two (2) outfalls just outside the VA property and the VA coordinates appropriately to access the outfalls.



After the annual IDDE inspections, inspectors identify any issues, such as access/safety issues, physical outfall damage, debris accumulation, or other blockages. These issues are summarized in an IDDE Outfall Annual Maintenance Summary report, which also specifies required maintenance. This report is given to the VA Maintenance department, and the outfalls are repaired or maintained within the next inspection cycle. This efficient process keeps outfalls accessible for inspections, and functional.

After the Year 1 and Year 2 testing, maintenance was required at one (1) Loch Raven and several Perry Point outfalls. The most common issue was removal of debris, sediment, or vegetation blocking outfalls.

3.C.4 IDDE Standard Operating Procedure (SOP)

Per *Part IV.C.4* of the MS4 permit, the VA must develop and implement written standard operating procedures that specify how to conduct IDDE tests. The VA has developed a guidance document for IDDE investigations and has included it in **Appendix I** for review and approval by MDE, as required by *Part IV.C.5* of the MS4 permit. The guidance includes the following required components:

- An inspection checklist describing how outfalls are screened for dry weather flows;
- Frequency of outfall inspections;
- Procedures for identifying the source, and eliminating spills, illegal dumping, and other suspected illicit discharges;
- Identification of priority areas for illicit discharge screening based on pollution potential;
- Permittee policy to ensure illicit discharges are eliminated;
- Procedures to inform employees, businesses, and the general public of the issues relating to illegal discharges and improper waste disposal; and
- Coordination with adjacent MS4 operators.

The Loch Raven and Perry Point sites are collectively considered a medium property (100 – 2,000 acres) and have five (5) and 31 outfalls, respectively. The VA conducts IDDE screenings at the MDE-required frequency of 50% of total outfalls per year for medium sized properties. In odd years, the VA inspects three (3) outfalls at Loch Raven and 15 at Perry Point. In even years, the VA inspects two (2) outfalls at Loch Raven and 16 at Perry Point. If an illicit discharge is identified, the outfall with the discharge would also be inspected the following year, so more than the required number of outfalls may be inspected in a given year. In cases where an outfall is inaccessible or cannot be located, the VA conducts inspections at the next accessible manhole upstream from the outfall.

In addition to re-inspecting outfalls with prior illicit discharges, the VA prioritizes outfalls to inspect based on site operations within the drainage area that may have a higher potential to contaminate stormwater. For example, outfalls at the terminal point for drainage from aboveground storage tanks (AST), shops, and mobile fueling tanks were selected in the first testing year. Two (2) of the three (3) mobile fueling tanks have since been emptied and removed from the Perry Point VAMC.



3.C.5 IDDE Year 1 and Year 2 Results

Per *Part IV.C.6* of the MS4 permit, the VA must document illicit discharge screening efforts and submit these to MDE.

At both Loch Raven and Perry Point, the VA screened outfalls for dry weather flows and tested discharges for pH, temperature, turbidity, ammonia, copper, chlorine, and detergents. The allowable threshold values for each of these contaminants and parameters can be found in the IDDE Inspection Forms, included as Attachment 3 of the IDDE guidance.

Year 1 and Year 2 IDDE results are included in **Appendix I**.

At Loch Raven, one (1) outfall screened in Year 1 had a dry weather flow. In Year 2, two (2) inspected outfalls had dry weather flow. Dry weather flows were tested, and all were determined to be compliant with allowable parameter/contaminant thresholds.

At Perry Point, seven (7) outfalls screened in Year 1 had dry weather flow. In Year 2, three (3) inspected outfalls had dry weather flows. Dry weather flows were tested, and all were determined to be compliant with allowable parameter/contaminant thresholds. Several outfalls were not located, likely due to overgrown vegetation or the shoreline revetment media. In these cases, inspection and testing was conducted at the upstream manholes.

Per *Part IV.C.7* of the MS4 permit, the VA must maintain complete records of any IDDE investigations and make these available to MDE upon field review of the VA MS4 program. Records of IDDE activities, including inspection records and outfall maintenance summaries, are available on site in the office of the GEMS manager at Perry Point.



3.D MCM #4 – Construction Site Stormwater Runoff Control

3.D.1 Erosion and Sediment Control Plans

Per *Part IV.D.1* of the MS4 permit, the VA must submit erosion and sediment control plans to MDE for review and approval in accordance with the COMAR and the applicable MDE guidelines manuals. Per *Part IV.D.2* of the MS4 permit, the VA must ensure compliance with the requirements under COMAR and the most recent applicable MDE standards and specifications. Per *Part IV.D.3* of the MS4 permit, the VA must ensure that all necessary permits have been obtained for construction activities for projects disturbing one acre or more on the Loch Raven and Perry Point properties.

Construction activities at Loch Raven and Perry Point that disturb more than 5,000 square feet of land area or include movement of over 100 cubic yards of earth comply with the following regulations and requirements:

- Annotated Code of Maryland, Environment Article, Title 4, Subtitles 1 and 2 (Sediment Control)
- Code of Maryland Regulations (COMAR) 26.17.01 (Erosion and Sediment Control Regulations)
- 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control, December 2011
- Applicable Critical Area Commission (CAC) regulations

Construction activities at Loch Raven and Perry Point that disturb more than one (1) acre also obtain coverage under MDE's General Permit for Stormwater Discharges Associated with Construction Activity.

MDE is the review authority for erosion and sediment control for the VA.

3.D.2 Construction Activity Complaints

Per *Part IV.D.4* of the MS4 permit, the VA must develop a process for receiving, investigating, and resolving complaints from any interested party related to construction activities on the Loch Raven and Perry Point properties. The process must notify the complainant of the investigation and findings within seven days.

The VA has developed a guidance document called *Municipal Separate Storm Sewer System (MS4) Permit Tracking* for receiving and tracking water quality complaints, including for those related to construction activity. Facility residents, staff, veterans, visitors, or the general public can report complaints to VAMHCSGEMSPProgram@va.gov. These complaints are investigated by the GEMS personnel and the resolution is reported back to the complainant if appropriate, within 7 days of receiving the complaint. The following process is followed for receiving, investigating, and resolving complaints related to construction activity.

- GEMS receives the email and enters the information into the Construction Complaint Tracker.
- GEMS identifies the associated parties, project, or responsible project contact and forwards the complaint, as appropriate.
- The associated party responsible oversees the investigation and resolution and provides updates to the GEMS Manager.
- The responsible party oversees the investigation and resolution in coordination with the project contact.



- GEMS or the responsible party notifies the complainant of the resolution within 7 days of receiving the complaint. It is GEMS' discretion to notify the complainant for general stormwater quality issues.

A construction site stormwater quality issues database (*Construction Complaint Tracker*) is maintained to record complaints related to the release of sediment and debris from active construction sites. The document that outlines the process for receiving, investigating, and resolving complaints related to construction activities and the *Construction Complaints Tracker* are included in **Appendix J**. No complaints related to construction activity were received by the VA in reporting Years 1 and 2.

3.D.3 Erosion and Sediment Control Plan (Grading Permit) Tracking

Per *Part IV.D.5* of the MS4 permit, the VA must track all active erosion and sediment control (grading) permits on the Loch Raven and Perry Point properties and report disturbed areas for all active erosion and sediment control (grading) permits to MDE.

The *Municipal Separate Storm Sewer System (MS4) Permit Stormwater Issue Tracking* includes procedures for tracking erosion and sediment control plans (grading) permits of active construction activities and erosion and sediment control (grading) permit Notices of Violation (NOVs) for these projects. An Erosion and Sediment Control (Grading) Permit and Erosion and Sediment Control (Grading) Permit NOV Tracker database is maintained by the VA to document information related to active and future construction projects. **Appendix J** includes the Erosion and Sediment Control (Grading) Permit and Erosion and Sediment Control (Grading) Permit NOV Tracker database. The data collected in the tracker includes:

- The erosion sediment control (grading) permit number
- Approval Date
- Project Description
- Total disturbed area acreage
- Project status (Active/Inactive)
- MDE violation notices (Y/N)
- Date(s) for received violations
- A full description of the water quality complaint outlined in the NOV, including location of where the issue is encountered.

During reporting Years 1 and 2, two ongoing construction projects disturbed 4.43 acres, as shown in Table 7.

Project Name	Disturbed Area (acres)
Perry Point Building 360 Construction	2.54
Perry Point Village Soil Remediation	1.89

Per *Part IV.D.6* of the MS4 permit, the VA must ensure that construction site inspections and enforcement procedures are performed and in accordance with COMAR. Ongoing communications are required to ensure that any violations are properly addressed.



The VA staff and/or contractor conduct construction site inspections regularly to verify that the erosion and sediment control measures implemented at the construction site follow the MDE-approved ESC plans and comply with State regulations. Corrective actions are taken in cases where non-compliance issues are noted during inspection. The erosion and sediment control inspection records are retained in the Projects Section offices at Baltimore (for Loch Raven) and Perry Point with a copy provided to the respective site GEMS Manager.

If a NOV is received from MDE, it is immediately acknowledged and addressed by the VA within the time frame specified on the NOV. The VA team evaluates the ESC procedures and takes corrective actions to avoid similar issues in future projects. The VA has not received any NOV's related to construction activity during the reporting timeframe.

3.D.4 Responsible Personnel Certification

Per *Part IV.D.8* of the MS4 permit, the VA must ensure that staff is adequately trained on proper procedures and actions to address potential discharge of pollutants into the MS4 as a result of any construction activity.

The VA continues to encourage appropriate personnel involved in construction activities to be up to date with the latest regulations related to erosion and sediment control including obtaining MDE's Responsible Personnel Certification. Through the Responsible Personnel Certification, VA staff are trained on topics related to implementing and maintaining erosion and sediment controls. This training also reviews the State regulations, and State's erosion and sediment control program and its effectiveness in protecting the water resources and the Chesapeake Bay. Three (3) VA staff currently have MDE's Responsible Personnel Certification.



3.E MCM #5 – Post Construction Stormwater Management

3.E.1 Stormwater Management Plan Submissions

Per *Part IV.E.1* of the MS4 permit, the VA must submit stormwater management plans to MDE for review and approval in accordance with the COMAR and the applicable MDE guidelines manuals. Per *Part IV.E.2* of the MS4 permit, the VA must implement the principles, methods, and practices found in the latest version of the Maryland Stormwater Design Manual, and the latest version of the MDE guidelines.

Construction activities at Loch Raven and Perry Point that disturb more than 5,000 square feet of land area or include movement of over 100 cubic yards of earth comply with the following regulations and requirements:

- Annotated Code of Maryland, Environment Article, Title 4, Subtitle 2 (Stormwater Management)
- Code of Maryland Regulations (COMAR) 26.17.02 (Stormwater Management Regulations)
- 2000 Maryland Stormwater Design Manual, Volumes I and II
- Maryland Stormwater Management and Erosion and Sediment Control Guidelines for State and Federal Projects, February 2015
- Applicable Critical Area Commission (CAC) regulations

VA projects implement stormwater management practices to meet Environmental Site Design (ESD) to the maximum extent practicable (MEP), which includes water quality volume, recharge volume, channel protection storage volume, overbank flood protection volume, and extreme flood volume, as applicable.

MDE is the review authority for stormwater management for the VA.

3.E.2 Plans and As-builts

Per *Part IV.E.3* of the MS4 permit, the VA must maintain all stormwater program implementation information and provide updates in accordance with the MS4 Progress Report. The information must include the total number of plans submitted to MDE, the total number of as-built plans submitted to MDE with their status, and verification that the BMPs are maintained in accordance with the MDE requirements outlined on approved plans.

The VA Facilities and Engineering Department maintains stormwater program implementation information and maintains records of stormwater management plans and as-builts submitted to MDE for approval. The VA submitted two (2) stormwater management plans and two (2) as-builts for MDE approval in reporting Years 1 and 2. MDE approved both of these plans. These projects are listed in **Section 3.D.3**.

Information regarding the status of as-built information for the existing BMPs at Loch Raven and Perry Point is provided in **Section 2.D.2** and **Appendix F**.

3.E.3 BMP Inspection and Maintenance Training

Per *Part IV.E.4* of the MS4 permit, the VA must provide training to stormwater program staff and staff responsible for proper BMP design, performance, inspection, and routine maintenance. The VA must report the number of trainings, topics covered, and number of attendees under this permit requirement.



A training program has been developed by the VA to train appropriate personnel on BMP maintenance and inspection. BMP maintenance personnel use the VA-created inspection and maintenance checklists for each BMP type located at the Loch Raven and Perry Point sites. These checklists were developed based on guidance provided in MDE Technical Memorandum #9 and BMP-specific requirements listed on the approved stormwater management plans. The BMP maintenance and inspection checklists are designed to assist with monthly, seasonal/after a large storm event, annual, and triennial inspections/maintenance. During the training sessions, inspection records, design plans, and photographs from recent site visits were provided as examples to train the VA staff, as applicable. Two (2) training sessions, one (1) each at Loch Raven and Perry Point, were conducted in 2020. Table 7 provides information related to these training sessions. The training sessions were held onsite at the stormwater management facilities.

Table 8: BMP Inspection and Maintenance Training Sessions			
Location	Training Date	Number of Attendees	Topics Covered
Loch Raven	09/15/2020	8	<ul style="list-style-type: none"> • NPDES Permit Requirements • Stormwater Management BMPs and Checklists <ul style="list-style-type: none"> ○ General site maintenance and Good Housekeeping ○ BaySaver BayFilter – maintenance and inspection ○ Contech StormFilter – maintenance and inspection • Recharge Area – maintenance and inspection
Perry Point	07/09/2020	10	<ul style="list-style-type: none"> • NPDES Permit Requirements • Stormwater Management BMPs and Checklists: <ul style="list-style-type: none"> ○ General site maintenance and Good Housekeeping ○ Bioretention facility – maintenance and inspection ○ Bioswale – maintenance and inspection ○ Grass swale – maintenance and inspection ○ Shoreline management – maintenance and inspection

3.E.4 Urban BMP Database Updates

Per *Part IV.E.5* and *Part V.D* of the MS4 permit, the VA must maintain and submit an Urban BMP database in accordance with the MS4 Progress Report.

An Urban BMP database documenting the existing BMPs at Loch Raven and Perry Point was submitted as a part of the Year 1 MS4 Progress Report to MDE. The database follows the schema provided in Appendix B, Tables B.1.a, B.1.b and B.1.c of the MS4 General Permit. The BMP data was compiled based on available documentation, such as stormwater management plans and as-builts. Existing BMPs, regardless of MS4 Permit impervious area credit, were included in the database. The Urban BMP database has been updated to address comments received from MDE on the Year 1 MS4 Progress Report. The updated BMP database is included in **Appendix F**.



3.F MCM #6 – Pollution Prevention and Good Housekeeping

3.F.1 Good Housekeeping Standard Operation Procedure (SOP)

Per *Part IV.F.2* of the MS4 permit, the VA must develop, implement, and maintain a good housekeeping plan for the Loch Raven and Perry Point properties. The plan must include a description of the site activities, a list of potential pollutants, a written good housekeeping procedures, a written procedure for corrective actions to address any pollutant release, and documentation of any releases, spills, and leaks along with response actions.

The VA has created the Pollution Prevention and Good Housekeeping guidance document for the Loch Raven and Perry Point sites. The guidance document identifies the potential pollutant-generating activities at both sites, describes procedures to be adopted to minimize discharge of pollutants through stormwater runoff, and assigns responsibilities for these procedures. The guidance documents are available to staff on the VA's intranet. The activities covered in the guidance document include:

- Road, street, and parking lot maintenance
- Landscaping and pesticide/herbicide application
- Winter road maintenance
- Equipment and vehicle storage
- Material storage
- Waste storage
- Miscellaneous

The guidance document also provides an overview of the training activities provided to VAHMCS staff, good housekeeping procedures to be adopted, spills and corrective actions to be taken, history of spills, and procedures for record keeping and reporting. The Pollution Prevention and Good Housekeeping guidance document is included in **Appendix L**.

3.F.2 Pollution Prevention Efforts

Per *Part IV.F.3* of the MS4 permit, the VA must quantify, and report pollution prevention efforts related to street sweeping and inlet cleaning programs, good housekeeping methods for pesticide application, good housekeeping methods for fertilizer application, good housekeeping methods for snow and ice control, and any other good housekeeping methods performed by the VA on the Loch Raven and Perry Point properties.

The VA conducts various pollution prevention activities including street sweeping, inlet cleaning, good housekeeping methods for pesticide, fertilizer application, snow and ice removal, salt storage etc. The VA conducts street sweeping at Perry Point. Street sweeping is conducted 10 times annually on all roadways at Perry Point.

Trash and Hazardous Waste Removal:

Trash is collected at regular intervals from both Loch Raven and Perry Point by Environment Management System (EMS).

At Loch Raven, trash is collected at the community living center (CLC) building and at the rear of the community-based outpatient clinic (CBOC) building, where it is collected at regular intervals. Hazardous waste is collected onsite in a series of 5-gallon, 15-gallon, and 55-gallon drums



located through the site and is disposed via GEMS via their hazardous waste contract, currently with BWS.

At Perry Point, trash is accumulated at the Building 1 loading dock before being collected by EMS. Hazardous waste is collected at satellite accumulation areas (SAAs) and a 90-day central accumulation area (CAA). The hazardous waste is periodically moved from the SAAs to CAA when the storage volume limit is reached. Once at the CAA, waste remains for a maximum of 90 days and is collected by the hazardous waste removal contractor Biomedical Waste Services (BWS). GEMS oversees this collection so that Federal and State disposal regulations are followed.

The collected debris from road sweepings and inlet cleaning is properly disposed following the procedures documented in the Pollution Prevention and Good Housekeeping Guidance document.

Pesticide Application:

The VA has a State of Maryland public agency permit to apply pesticides and has four (4) staff members that are certified in pesticide application. The VA has applied pesticides during Years 1 and 2 following the guidance included in the Integrated Pest Management Plan for Loch Raven and Perry Point. Detailed good housekeeping procedures for pesticide application are described in the guidance document for Pollution Prevention and Good Housekeeping, which is included in **Appendix L**. The VA applied the following best practices for pesticide application:

- Following instructions on pesticide packaging related to mixing, application, and storage;
- Keeping spill kits nearby when transferring or mixing pesticides;
- Keeping application equipment clean and free of chemical buildup;
- Applying pesticides only in dry weather; and
- Never mixing, applying, or storing pesticides near a storm drain.

Fertilizer Application:

The VA applied fertilizers at Loch Raven and Perry Point sites during Years 1 and 2 of the permit reporting period. The VA personnel follow the detailed good housekeeping procedures for fertilizer application as documented in the in the guidance document for Pollution Prevention and Good Housekeeping, included in **Appendix L**. The best practices followed for fertilizer application include:

- Following instructions on fertilizer packaging related to mixing, application, and storage;
- Keeping spill kits nearby when transferring or mixing fertilizers;
- Never applying fertilizers to frozen ground;
- Keeping application equipment clean and free of chemical buildup;
- Applying fertilizers only in dry weather; and
- Never mixing, applying, or storing fertilizers near a storm drain.

Snow and Ice Control:

The VA performs salting and sanding activities during winter months for snow and ice control. The VA applies the minimum amount of salt and sand needed to maintain safe roads. The detailed good housekeeping procedures documented in the Pollution Prevention and Good Housekeeping Guidance document included in **Appendix L** are followed for salt and sand application, including:



- Minimizing spills by not overloading salt and sand spreading trucks and equipment;
- Using the least amount of sand and salt necessary to achieve safe walking/driving conditions;
- Establishing snow storage areas that are not located near storm drains. Ideal snow storage areas are located on pervious areas where snow melt can infiltrate; and
- Sweeping excess salt and sand from paved areas after the last snow.

3.F.3 Maryland General Permit for Stormwater Discharges Associated with Industrial Activity

Per *Part IV.F.4* of the MS4 permit, the VA must submit in the NOI a list of properties where MCM #6 is performed, and identify which property is covered under the 3.F.4 Maryland General Permit for Stormwater Discharges Associated with Industrial Activity. The VA must also provide an update if the status of the permit coverage changes.

The Loch Raven and Perry Point VAMCs are currently not required to be covered under an MDE issued Individual NPDES Industrial permit or under the General Permit for Stormwater Discharges Associated with Industrial Activity (12-SWA).



4. CONCLUSION

This report constitutes the second Annual MS4 Progress Report for the Veterans Affairs Maryland HealthCare System (VAMHCS) under the NPDES General Permit for Discharges from State and Federal Small MS4s for the stormwater discharges from the Loch Raven VA Medical Center and Perry Point VA Medical Center.

This Year 2 Progress Report includes updates to the Impervious Area Restoration Plan and addresses MDE comments on the Year 1 Progress Report. The updated Impervious Area Restoration Plan presents the findings of the impervious area baseline assessment, discusses a work plan, identifies the 20 percent impervious area restoration goal, evaluates credits from restoration/redevelopment projects, describes how the VA meets restoration requirements with existing facilities, and describes potential coordination and future efforts related to the permit goals for its Loch Raven and Perry Point sites. The restoration requirements are established for the entire permit area at both sites. This analysis demonstrated that the collective restoration requirement is achieved through the existing BMPs at both Loch Raven and Perry Point. Therefore, no additional restoration is required during this current permit term, ending in 2023.

In addition to the Impervious Area Restoration Plan, this Progress Report also includes activities conducted by the VA at Loch Raven and Perry Point to meet the six Minimum Control Measures (MCMs) required by the permit.

For the Public/Personnel Education and Outreach MCM (MCM #1), the VA identified the target audience, described the outreach methods and topics, discussed the stormwater education materials that would be developed, and discussed the annual employee training program conducted by the VA. This section of the report also discusses the process adopted by the VA to receive and process water quality complaints.

The Public/Personnel Involvement and Participation MCM section discusses the VA public/personnel involvement and participation plan, participation events conducted between October 2018 and October 2020, and future events planned October 2020 through October 2023. The section also discussed how the MS4 Progress Report is distributed for personnel/public comments and actions taken by the VA to address comments on the MS4 Report.

The IDDE MCM section provides an updated outfall map that shows the storm drain system and BMPs at Loch Raven and Perry Point, the current VA MS4 Policy, the guidance document developed and adopted by VA for IDDE, and results of IDDE investigations for Years 1 and 2. The section also discusses the training provided and education materials distributed to VA staff to educate them on IDDE.

Under the Construction Site Stormwater Control MCM, the VA discusses the erosion and sediment control plan submission process to MDE, the process for receiving water quality complaints related to construction activity and the approach for resolving them, the erosion and sediment control (grading) permit and MDE-issued NOV tracking process, and the number of VA staff trained in the MDE Responsible Personnel Certification.

The Post Construction Stormwater Management MCM discusses the VA process for submitting stormwater management plans for MDE approval, documentation of plans and as-builts submitted for the reporting period, future as-built efforts, BMP inspection and maintenance training provided to VA staff, and the Urban BMP database documenting the existing BMPs at Loch Raven and Perry Point.

The Pollution Prevention and Good Housekeeping MCM section discusses the annual pollution prevention training that will be provided to VA staff and the guidance document developed by the VA for good housekeeping and pollution prevention. This section also describes the pollution prevention efforts adopted by the VA for activities such as pesticide and fertilizer application, salting, and sanding of roads.

The VA will continue to explore innovative ways to expand these programs throughout each reporting year.



A – MDE PROGRESS REPORT FORMS

Maryland Department of the Environment (MDE)

**National Pollutant Discharge Elimination System (NPDES)
Small Municipal Separate Storm Sewer Systems (MS4) General Permit**

This Progress Report is required for those State and federal agencies covered under General Discharge Permit No. 13-SF-5501. Progress Reports must be submitted to:

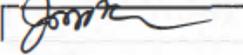
Maryland Department of the Environment, Water and Science Administration
Sediment, Stormwater, and Dam Safety Program
1800 Washington Boulevard, Suite 440, Baltimore, MD 21230-1708
Phone: 410-537-3543 FAX: 410-537-3553
Web Site: www.mde.maryland.gov

Contact Information

Permittee Name:	U.S. Department of Veterans Affairs
Responsible Personnel:	Jonathan R. Eckman, Acting Director, VAMHCS
Mailing Address:	Baltimore VAMC, 10 North Greene Street Baltimore, MD 21201
Phone Number(s):	
Email address:	
Additional Contact(s):	Jennifer Dallaire
Mailing Address:	Perry Point VAMC, 101 Boilerhouse Road, Room 40
Phone Number(s):	410-642-2411 ext. 25227
Email address:	jennifer.dallaire@va.gov

Signature of Responsible Personnel

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Jonathan R. Eckman		2/10/20
Printed Name	Signature	Date

Reporting Period (State Fiscal Year):

Due Date:

Date of Submission:

Type of Report Submitted:

Impervious Area Restoration Progress Report (Annual):

Six Minimum Control Measures Progress (Years 2 and 4):

Both:

Permittee Information:

Renewal Permittee:

New Permittee:

Compliance with Reporting Requirements

Part VI of the Small MS4 General Discharge Permit (No. 13-SF-5501) specifies the reporting information that must be submitted to MDE to demonstrate compliance with permit conditions. The specific information required in this MS4 Progress Report includes:

1. Annual: Progress toward compliance with impervious area restoration requirements in accordance with Part V of the general permit. All requested information and supporting documentation must be submitted as specified in Section I of the Progress Report.
2. Years 2 and 4: Progress toward compliance with the six minimum control measures in accordance with Part IV of the general permit. All requested information and supporting documentation shall be reported as specified in Section II of the Progress Report. MDE may request more frequent reporting and/or a final report in year 5 if additional information is needed to demonstrate compliance with the permit.

Instructions for Completing Appendix D Reporting Forms

The reporting forms provided in Appendix D allow the user to electronically fill in answers to questions. Users may enter quantifiable information (e.g., number of outfalls inspected) in text boxes. When a more descriptive explanation is requested, the reporting forms will expand as the user types to allow as much information needed to fully answer the question. The permittee must indicate in the forms when attachments are included to provide sufficient information required in the MS4 Progress Report.

Section I: Impervious Area Restoration Reporting Form

Section I: Impervious Area Restoration Reporting

1. a. Was the impervious area baseline assessment submitted in year 1?

Yes No

b. If No, describe the status of completing the required information and provide a date at which all information required by MDE will be submitted:

- c. Has the baseline been adjusted since the previous reporting year?

Yes No

2. Complete the information below based on the most recent data:

Total impervious acres of area covered under this permit:

91.30

Total impervious acres treated by stormwater water quality best management practices (BMPs):

5.33

Total impervious acres treated by BMPs providing partial water quality treatment (multiply acres treated by percent of water quality provided):

0.02

Total impervious acres treated by nonstructural practices (i.e., rooftop disconnections, non-rooftop disconnections, or vegetated swales):

0.05

Total impervious acres untreated:

85.90

Twenty percent of this total area (this is the restoration requirement):

17.18

Verify that all impervious area draining to BMPs with missing inspection records is not considered treated. Describe how this information was incorporated into the overall analysis:

All BMPs were inspected in FY2019, as reported in the Year 1 progress report. Therefore, there are no missing BMP inspection records. The “Accounting for Stormwater Wasteload Allocations and Impervious Area Treated” dated August 2014 and the MDE Year 1 progress report comments were utilized to determine the BMP credits towards the baseline impervious assessment.

See section 2.A of the Year 2 Progress Report for more information.

3. Has an Impervious Area Restoration Work Plan been developed and submitted to MDE in accordance with Part V.B, Table 1 of the permit or other format?

Section I: Impervious Area Restoration Reporting

Yes No

Has MDE approved the work plan?

Yes No

If the answer to either question is No, describe the status of submitting (or resubmitting) the work plan to MDE and provide a date at which all outstanding information will be available:

Describe progress made toward restoration planning, design, and construction efforts and describe adaptive management strategies necessary to meet restoration requirements by the end of the permit term:

The VA has implemented BMPs as part of redevelopment and restoration projects between January 1, 2006 and the baseline year of 2019 that provide impervious area or equivalent impervious area treatment. These existing BMPs satisfy the permit restoration requirements. Therefore, no further restoration activity is required for this permit term.

The VA will continue to evaluate future planned growth on the Loch Raven and Perry Point sites and determine how those projects will be incorporated into the restoration planning efforts. There is no definitive timeline for any large planned growth at either site at this time.

It is also assumed that any development projects will adhere to all current MDE requirements and treat any new impervious area onsite.

See section 2.B of the Year 2 Progress Report for more information.

4. Has a Restoration Schedule been completed and submitted to MDE in accordance with Part V.B, Table 2 of the permit?

Yes No

In year 5, has a complete restoration schedule been submitted including a complete list of projects and implementation dates for all BMPs needed to meet the twenty percent restoration requirement?

Yes No

Are the projected implementation years for completion of all BMPs no later than 2025?

Yes No

Describe actions planned to provide a complete list of projects in order to achieve compliance by the end of the permit term:

Section I: Impervious Area Restoration Reporting

Existing BMPs at Perry Point and Loch Raven treat the required number of impervious acres to meet all the permit restoration requirements. Therefore, no additional restoration activity onsite is required for this permit term.

See section 2.C of the Year 2 Progress Report for more information.

Describe the progress of restoration efforts (attach examples and photos of proposed or completed projects when available):

The VA has implemented BMPs as part of redevelopment and restoration projects between January 1, 2006 and the baseline year of 2019. These existing BMPs satisfy the permit restoration requirements. Supplementary documentation, including permit drawings and pictures, were submitted with the Year 1 report for the completed projects where available. No further supplementary documentation is required or submitted with this progress report.

See section 2.C of the Year 2 Progress Report for more information.

5. Has the BMP database been submitted to MDE in Microsoft Excel format in accordance with Appendix B, Tables B.1.a, b, and c?

Yes No

Is the database complete?

Yes No

If either answer is No, describe efforts underway to complete all data fields, and a date that MDE will receive the required information:

6. Provide a summary of impervious area restoration activities planned for the next reporting cycle (attach additional information if necessary):

Existing BMPs at Perry Point and Loch Raven treat the required amount of impervious acres to meet all the permit restoration requirements. Therefore, no additional restoration activity onsite is required for this permit term.

See section 2.C of the Year 2 Progress Report for more information.

Section I: Impervious Area Restoration Reporting

7. Describe coordination efforts with other agencies regarding the implementation of impervious area restoration activities:

The VA has continued coordination efforts with MDE permit staff to discuss this MS4 permit compliance, future efforts, and comment response to the Year 1 Progress Report comments. The VA also frequently communicates with state agencies regarding other permits that the VA holds, including the 17 HT permit, that has many overlapping responsibilities. During this permit year, no other coordination with local, state, or federal agencies was required.

8. List the total cost of developing and implementing impervious area restoration program during the permit term:

Permit Year 1:

The VA contracted with a MS4 implementation team (GORDON and AECOM) to provide full services for the Section 1 activities at both Perry Point and Loch Raven, including: development of a baseline impervious area assessment, development and implementation of the impervious area restoration work plan, development of a restoration activity schedule, development and tracking of a BMP database, development and implementation of a BMP inspection and maintenance program, determination and outreach on coordination efforts, and compilation of the Year 1 progress report. The approximate cost of implementation was \$305K.

In addition, at Loch Raven, one of the BMPs required significant repairs. The repairs cost approximately \$50K. The cost of regular maintenance of the onsite BMPs is not available.

Permit Year 2:

The VA continued contracting with a MS4 implementation team (GORDON and AECOM) to provide full services for the Section 1 activities at both Perry Point and Loch Raven, including: updates to the baseline impervious area assessment, updates to and implementation of the impervious area restoration work plan, updates to the restoration activity schedule, updates to the BMP database, continued implementation of a BMP inspection and maintenance program, continued outreach on coordination efforts, response to MDE Year 1 comments, and compilation of the Year 2 progress report. The approximate cost of implementation is \$140K. The cost of regular maintenance of the onsite BMPs is not available.

Section II: Minimum Control Measures Reporting Forms

MCM #1: Personnel Education and Outreach

1. Does the permittee maintain a process and phone number for the public and/or staff to report water quality complaints?

Yes No

Number of complaints received:

0

Describe the actions taken to address the complaints:

Complaints are received at VAMHCSGEMSPprogram@va.gov or by phone at (410) 642-2411, ext. 25227 or (410) 605-7000 ext. 53053, which are listed on the GEMS website. The VA tracks these complaints in the VAMHCS Water Quality Complaint Tracker spreadsheet. A guidance document that outlines the process has been developed and is included as Appendix G in the Year 2 Progress Report.

See section 3.A.1 of the Year 2 Progress Report for more information.

2. Describe training to employees to reduce pollutants to the MS4:

The VA has an extensive employee training program for a variety of topics. The VA trains employees in several ways, including through their dedicated training platform called Talent Management System (TMS).

In Years 1 and 2, the VA has worked to develop more stormwater pollution and water quality specific training.

See section 3.A.4 of the Year 2 Progress Report for more information.

3. Describe the target audience(s):

The target audience includes Veterans, patients, visitors, residents, VA staff, and nearby communities, if future opportunities arise. VA staff includes Facility and Engineering Service, the fire department (Perry Point only), the police department, medical employees, food service providers, and contractors.

See section 3.A.2 of the Year 2 Progress Report for more information.

4. Are examples of educational/training materials attached with this report?

Yes No

Provide the number and type of educational materials distributed:

MCM #1: Personnel Education and Outreach

During the permit term, one (1) poster, two (2) articles, two (2) brochures, and three (3) presentations were utilized as education and outreach materials. These materials centered around Earth Day, waste disposal, protection of state waters, and general MS4 permit updates. The materials have been included in Appendix G and H.

See section 3.A.3 of the Year 2 Progress Report for more information.

Describe how the personnel education program is appropriate for the target audience(s):

The existing and planned future training complements and strengthens the other programs in the MS4 permit to specifically engage the target audience. This training focuses specially on what VA employees need to do to comply with the applicable rules and regulations. There are many regulations and requirements, so these training programs help to educate VA employees on how to comply. These trainings are held on an annual basis to consistently remind VA employees of their responsibilities and provide updates as rules and regulations evolve.

See section 3.A.4 of the Year 2 Progress Report for more information.

5. Describe how stormwater education materials were distributed to the public and/or staff (e.g., newsletters, website):

The VA distributed educational materials in multiple ways based on the target audience, logistical considerations, and outreach goals specific to the material. This included physical material distribution, verbal presentations, and various means of electronic distribution, including newsletters, emails, and intranet posting. During the COVID-19 pandemic, the VA primarily used electronic and virtual distribution for educational outreach materials.

6. Describe how educational programs facilitated efforts to reduce pollutants in stormwater runoff:

Educational programs developed by the VA provided the target audience with the knowledge and motivation to participate in stormwater pollution prevention efforts. Through training and educational materials, the target audience learned how to prevent, notice, and minimize stormwater pollution.

MCM #1: Personnel Education and Outreach

7. Provide a summary of activities planned for the next reporting cycle:

For the next reporting cycle, the VA intends to expand their reach through BMP signs, a GEMS website, and more physical postings of materials. A sample of some of these efforts in development are in Appendix G of the Year 2 Progress Report.

See section 3.A.3 of the Year 2 Progress Report for more information.

8. List the total cost of implementing this MCM over the permit term:

The VA contracted with a MS4 implementation team (GORDON and AECOM) to provide full services for the Section 2 activities at both Loch Raven and Perry Point. The approximate cost of implementation for MCM 1 to date is \$40K.

MCM #2: Public or Personnel Involvement and Participation

1. Describe how the public or personnel involvement and participation program is appropriate for the target audience(s):

The activities developed for this MCM have been developed specifically to engage the target audience. The VA has considered the regular activities, responsibilities, and interactions of target audience members at the VA Loch Raven and Perry Point Facilities when planning events and campaigns meant to interest and educate the audience. Several events were planned for specific sub-audiences within the larger target audience to better suit their needs.

2. Quantify and report public and/or staff involvement and participation efforts as shown below where applicable.

Number of participants at public and/or staff events:

Quantity of trash and debris removed at clean up events:

Number of employee volunteers participating in sponsored events:

Number of trees planted:

Length of stream cleaned (feet):

Number of storm drains stenciled:

Number of public notices published to facilitate public and/or staff participation:

Number of public and/or staff meetings organized:

Total number of attendees at all public and/or staff meetings:

Describe the agenda, items discussed, and collaboration efforts with interested parties for public and/or staff meetings:

MCM #2: Public or Personnel Involvement and Participation

See Appendix G and H of the Year 2 Progress Report for agendas and materials. Most of the events are planned by the GEMS Managers, in coordination with public relations, facilities and engineering maintenance and operations facilities and engineering projects, and environmental management services.

Perry Point shoreline cleanup information:

- April 2017 = 34 volunteers/2 hours/30yds³ waste removed from the shoreline
- October 2017 = 15 volunteers/2hrs/20yds³ waste removed from the shoreline
- April 2018 = 30 Volunteers/2hrs/30yds³ waste removed from the shoreline
- April 2019 = 25 Volunteers/2hrs/30yds³ waste removed from the shoreline
- April 2020 = Shoreline Cleanup was cancelled due to COVID-19 restrictions. Earth Day Article distributed via the VAMHCS Insider to outline ways to help the Earth while staying safe during the Pandemic.

See further information in section 3.A.3 of the Year 2 Progress Report.

Describe how public and/or staff comments have been incorporated into the permittee's MS4 program, including water quality improvement projects to address impervious area restoration requirements:

Comments from the GEMS Team and the Facilities and Engineering Service were addressed in the Year 1 and Year 2 Progress Reports. The Year 1 Progress Report will be posted on the news GEMS MS4 permit website to invite other public and/or staff comments.

Describe any additional events and activities if applicable:

See further information in section 3.A.3 of the Year 2 Progress Report.

3. Provide a summary of activities planned for the next reporting cycle:

The VA looks to resume in-person events that were disrupted due to the COVID-19 pandemic, including Earth Day, shoreline cleanup, and tree planting events. The VA also is planning a Virtual Town Hall event to engage VA staff in a virtual environment.

4. List the total cost of implementing this MCM for the permit term:

MCM #2: Public or Personnel Involvement and Participation

The VA contracted with a MS4 implementation team (GORDON and AECOM) to provide full services for the Section 2 activities at both Loch Raven and Perry Point. The approximate cost of implementation for MCM 2 to date is \$40K.

MCM #3: Illicit Discharge Detection and Elimination (IDDE)

1. Does the permittee maintain a map of the MS4 owned or operated by the permittee, including stormwater conveyances, outfalls, stormwater best management practices (BMPs), and waters of the U.S. receiving stormwater discharges?

Yes No

If Yes, attach the map to this report and provide a progress update on any features that are still being mapped. (If submitting a map would compromise the operational security of an agency, indicate that the map is available for MDE review on site.) If No, detail the current status of map development and provide an estimated date of submission to MDE:

All features of this document have been mapped. The map is included in Attachment I of the Year 2 Progress Report.

2. Does the permittee have a policy, or other agency directive, that prohibits illicit discharges?

Yes No

If Yes, describe the policy utilized for enforcement by the permittee (alternatively, a link may be provided to the permittee's webpage where this information is available). If No, describe the permittee's plan, including approximate time frame, to establish a policy that prohibits illicit discharges into the storm sewer system:

The MS4 policy can be found in the GEM's manager's office at Perry Point. It is attached in Appendix I of the Year 2 Progress Report.

3. Did the permittee submit to MDE standard operating procedures (SOPs) in accordance with Part IV.C of the permit?

Yes No

If No, provide a proposed date that SOPs will be submitted to MDE. MDE may require more frequent reports for delays in program development:

Did MDE approve the submitted SOPs?

Yes No

If No, describe the status of requested SOP revisions and approximate date of resubmission for MDE approval:

This FY 2020 progress report is the first annual report that includes submission of the Guidance Document for IDDE investigation. See Appendix I in the Year 2 Progress Report.

MCM #3: Illicit Discharge Detection and Elimination (IDDE)

4. Describe how the permittee prioritized screening locations in areas of high pollutant potential and identify the areas within which screenings were conducted during this reporting period:

Loch Raven has one AST, which creates a higher potential for pollution of stormwater in its drainage area. Outfall 005 was tested because it is the terminal point for drainage from the AST. Loch Raven otherwise does not have any areas that have a high pollutant potential, as all spills from pollutants would be contained inside. Two (2) additional outfalls were selected to be screened at different sides of the site to make sure the Year 1 IDDE testing gave a complete picture of outfall drainage at Loch Raven. Because no illicit discharges were identified at Outfall 005 in Year 1, it was not retested in Year 2. It will be re-inspected during Year 3 IDDE inspections.

Perry Point has multiple ASTs, shops, and one mobile diesel fueling area for onsite equipment, which create higher potentials for pollution of stormwater in their drainage areas. The ASTs, shops, and mobile fueling tanks are located within the drainage area to outfalls 10, 11, 19, 27, and 29 and were tested in Year 1. Additional outfalls were selected to be screened along the shoreline of the site to make sure the Year 1 IDDE testing gave a complete picture of outfall drainage at Perry Point. The remaining outfalls were tested in Year 2.

5. Answers to the following questions must reflect this two-year reporting period.

How many outfalls were identified on the map?

How many outfalls were required to be screened for dry weather flows to meet the minimum numeric requirement based on property size?

How many outfalls were screened for dry weather flows?

Per the permittee's SOP, how frequently were outfalls required to be screened?

Outfalls are required to be screened annually.

The numbers reported above for required screening and actual screening refer to Years 1 and 2 collectively, for Loch Raven and Perry Point. Each year, half of the outfalls at each site were inspected. In odd years, 3 outfalls and 15 outfalls are inspected at Loch Raven and Perry Point, respectively. In even years, 2 outfalls and 16 outfalls are inspected at Loch Raven and Perry Point, respectively.

MCM #3: Illicit Discharge Detection and Elimination (IDDE)

Below, dry weather flows are reported collectively for Loch Raven and Perry Point sites for Years 1 and 2. In Year 1, 1 dry weather flow was found at Loch Raven and 7 were found at Perry Point. In Year 2, 2 dry weather flows were found at Loch Raven and 3 were found at Perry Point.

At what frequency were outfalls screened during the reporting period?

50% of the outfalls screened annually

How many dry weather flows were observed?

13

If dry weather flows were observed, how many were determined to be illicit discharges?

0

Describe the investigation process to track and eliminate each suspected illicit discharge and report the status of resolution:

The Guidance for IDDE investigation describes the investigation and elimination process used when illicit discharges are detected. This process was not used during the Years 1 and 2 IDDE inspections because no illicit discharges were detected. The Guidance for IDDE investigations is included in Appendix I of the Year 2 Progress Report.

6. Describe maintenance or corrective actions undertaken during this reporting period to address erosion, debris buildup, sediment accumulation, or blockage problems:

At Loch Raven, Outfall 003 had a wood board in the manhole, discovered during the Year 2 inspections. Remediation has not yet occurred but will occur prior to Year 3 inspections. The board will require removal.

At Perry Point, many outfalls during both Years 1 and 2 inspections were found to have sediment accumulation and debris buildup/blockage. Maintenance has not yet been addressed but will be addressed before Year 3 inspections.

A detailed summary of maintenance required can be found in the Outfall Maintenance Summaries in Appendix I of the Year 2 Progress Report.

7. Is the permittee maintaining all IDDE inspection records and are they available to MDE during site inspections?

Yes No

MCM #3: Illicit Discharge Detection and Elimination (IDDE)

8. If spills, illicit discharges, and illegal dumping occurred during this reporting period, describe the corrective actions taken, including enforcement activities, and indicate the status of resolution:

No spills, illicit discharges, or illegal dumping occurred during this reporting period.

9. Attach to this report specific examples of educational materials distributed to the public and/or staff related to illicit discharge reporting, illegal dumping, and spill prevention. If these are not available, describe plans to develop public and/or staff education materials and submit examples with the next Progress Report:

See training sessions in Appendix G of this Year 2 Progress Report. Many of these trainings covered spill prevention and response.

10. Specify the number of employees trained in illicit discharge detection and spill prevention:

The VA intends to provide training covering IDDE in Year 3 of the MS4 permit cycle. See training sessions in Appendix G of this Year 2 Progress Report. Many of these trainings covered spill prevention and response.

11. Provide examples of training materials. If not available, describe plans to develop employee training and submit examples with the next Progress Report:

The VA is working to develop a stand-alone training session regarding water quality topics to include IDDE. The training materials will be provided in the next applicable Progress Report.

12. List the cost of implementing this MCM during this permit term:

The VA contracted with a MS4 implementation team (GORDON and AECOM) to provide full services for the Section 2 activities at both Loch Raven and Perry Point. The approximate cost of implementation for MCM 3 to date is \$75K.

MCM #4: Construction Site Stormwater Runoff Control

1. Does the permittee have a process for receiving, investigating, and resolving complaints from interested parties related to construction activities and erosion and sediment control?
 Yes No

Describe the process:

The VA has developed a process for receiving, investigating and resolving complaints from construction activities and erosion and sediment control. See section 3.C.4 and Appendix I of the Year 2 Progress Report.

Provide a list of all complaints and a summary of actions taken to resolve them:

No complaints related to construction activity were received in FYs 2019 or 2020.

2. Total number of active construction projects within the reporting period:

Provide a list of all construction projects and tabulate the total disturbed area:

- **Perry Point Building 360 – 2.54 acres disturbed.**
- **Perry Point Village Soil Remediation - 1.89 acres disturbed.**

3. Total number of violation notices issued by MDE related to this MCM on the agency's property:

Describe the status of enforcement activities:

No enforcement activities have been necessary because the VA has not received any NOV's during this reporting period.

Describe how the permittee communicates and collaborates with MDE to maintain compliance with this MCM for all active construction projects on the agency's property:

The VA tracks any erosion and sediment control (grading) permit notices of violation (NOV's) received from MDE. These notices are immediately acknowledged and addressed within the time frame specified on the NOV, and the project evaluates procedures and controls to avoid a similar issue in the future. The VA also has staff trained in the MDE Responsible Personnel Certification. The Erosion and Sediment Control (Grading) Permit tracker, which includes tracking of NOV's is included in Appendix J of the Year 2 Progress Report.

MCM #4: Construction Site Stormwater Runoff Control

Are erosion and sediment control inspection records retained and available to MDE during field review of the agency MS4 program?

Yes No

If No, explain:

4. Number of staff trained in MDE's Responsible Personnel Certification:

3

5. Describe the coordination with other entities regarding implementation of this MCM:

The VA coordinates with VA residents, staff, and contractors (the target audience) to ensure that this MCM is implemented per MDE requirements. The target audience or general public can report construction-related complaints at any time to the GEMS email. GEMS coordinates with the complainant and any relevant personnel like the construction crew, staff, or contractors related to the complaint. Welcoming input from and coordinating with the target audience will help the VA enforce successful stormwater management related to construction projects.

6. List the total cost of implementing this MCM over the permit term:

The VA contracted with a MS4 implementation team (GORDON and AECOM) to provide full services for the Section 2 activities at both Loch Raven and Perry Point. The approximate cost of implementation for MCM 4 to date is \$25K.

MCM #5: Post Construction Stormwater Management

1. Has an Urban BMP database been submitted in accordance with the database structure in Appendix B, Tables B.1.a, b, and c as a Microsoft Excel file?

Yes No

Describe the status of the database, efforts to complete all data fields, and provide a date as to when the required information will be submitted to MDE:

The information for all BMPs at both Loch Raven and Perry Point was compiled based on available documentation such as stormwater management plans and as-builts. All BMPs, regardless of MS4 Permit credit, were included in the database. The Urban BMP database has been updated to address comments received from MDE on the FY 2019 MS4 Progress Report. The VA is still pursuing as-built data for several BMPs. This data will be added within the permit reporting cycle, either via as-built data or a new engineer verification survey. The updated BMP database is included in Appendix F.

See section 2.D.2 of the Year 2 Progress Report for further information.

2. Total number of plans submitted to MDE for review and approval:

2

Total number of as-built plans submitted to MDE:

2

Number of submitted as-built plans approved by MDE:

2

3. Total number of BMPs located on each property covered under the general permit (list individual property, and total BMPs for that property – provide separate attachment if necessary):

Loch Raven – 8

Perry Point – 30

Does the permittee perform inspections for all structural BMPs in accordance with the Dam Inspection Checklist in Maryland Pond Code 378 at least once every three years?

Yes No

If No, describe efforts to train staff and develop a program to perform these required inspections on a triennial basis:

MCM #5: Post Construction Stormwater Management

Are BMP inspection records retained and available to MDE during field review of local programs?

Yes No

4. Provide a summary of routine maintenance activities for all BMPs:

BMPs types present at Loch Raven include underground structures and a recharge area. Routine maintenance performed on the underground structures is performed by third party contractors, who remove sediment and debris blockages, repair structural damage to conveyances, and remove harmful substances. The recharge area maintenance is performed by VA employees, who mainly look for sediment/debris blockages in the stormwater conveyances, erosion, and hazardous substances.

Perry Point BMPs include micro-bioreentions, bio-swales, and shoreline revetment. Routine maintenance is performed by VA employees, who remove sediment/debris blockages, repair erosion, and remove harmful substances as needed. The shoreline revetment project requires routine removal of debris and re-stabilization of any rip rap that has migrated.

The BMP inspection and maintenance process is outlined in the guidance document in Appendix K.

Are BMP maintenance procedures consistent with maintenance requirements on MDE approved plans?

Yes No

Are completed BMP maintenance checklists available to MDE during field review of local programs?

Yes No

If either answer is No, describe planned actions to implement maintenance checklists and procedures and provide formal documentation of these activities:

Describe all problems discovered during routine maintenance operations and repair work performed to restore the function of the BMP(s) (attach photos and additional documentation as needed):

MCM #5: Post Construction Stormwater Management

At Loch Raven, there was one (1) BMP that was not functioning. The third party inspections found to have normal trash and debris accumulation, as well as pipe damage and plugged conveyances. The VA has contracted for the repair work and completion is expected at the end of October 2020.

All other BMPs at Loch Raven and Perry Point were functioning and only required routine maintenance operations. This included removal of trash/debris/sediment accumulation and some revegetation.

5. Number of staff trained in proper BMP design, performance, inspection, and routine maintenance:

6. Provide a summary of activities planned for the next reporting cycle:

During the next reporting cycle, the VA will continue to train staff on BMP design, performance, inspection, and maintenance and will continue to implement this maintenance and inspection program at both sites.

7. List the total cost of implementing this MCM over the permit term:

The VA contracted with a MS4 implementation team (GORDON and AECOM) to provide full services for the Section 2 activities at both Loch Raven and Perry Point. The approximate cost of implementation for MCM 5 to date is \$50K.

MCM #6: Pollution Prevention and Good Housekeeping

1. Provide a list of topics covered during the last training session related to pollution prevention and good housekeeping, and attach to this report specific examples of training materials:

The VA is developing a comprehensive stormwater training to offer in Year 3 of the MS4 Permit. The topics covered in the employee training will be:

- **Causes of stormwater pollution and its impacts on water resources**
- **NPDES MS4 requirements**
- **Key Responsibilities of VA employees**
- **Pollution control measures**
 - **Spill prevention and response**
 - **Good housekeeping practices**
 - **Erosion and sediment control practices**
 - **Green Practices to manage stormwater runoff**
 - **Equipment and material storage**
- **Illicit discharges – detection and reporting**

List all training dates within this two-year reporting period:

All employee training offered by the VA during the MS4 reporting period is provided in Appendix G.

The VA will report on the development and implementation of other training in the next applicable progress reports.

Number of staff attended:

2. Are the good housekeeping plan and inspection records at each property retained and available to MDE during field review of the local program? Yes No

If No, explain:

Provide details of all discharges, releases, leaks, or spills that occurred in the past reporting period using the following format (attach additional sheets if necessary).

Property Name:

Date:

Describe observations:

MCM #6: Pollution Prevention and Good Housekeeping

Describe permittee's response:

A record of discharges, released, leaks, and spills at both Perry Point and Loch Raven during this reporting cycle can be found in the Pollution Prevention and Good Housekeeping Guidance Document, provided in Appendix L of the Year 2 Progress Report.

3. Quantify and report property management efforts as shown below, where applicable (attach additional sheets if necessary).

Number of miles swept:

Amount of debris collected from sweeping (indicate units):

If roads and streets are swept, describe the strategy the permittee has implemented to maximize efficiency and target high priority areas:

Number of inlets cleaned:

Amount of debris collected from inlet cleaning (indicate units):

Describe how trash and hazardous waste materials are disposed of at permittee owned and operated property(ies), including debris collected from street sweeping and inlet cleaning:

Note for above questions: The VA sweeps all roadways at Perry Point 10 times per year. The VA does not track mass of debris removed. Inlets are cleaned as needed separately from the street sweeping conducted on roadways.

The VA uses EMS Service to remove trash at regular intervals.

At Loch Raven, trash is collected at the Community Living Center building and rear of the Community Based Out-patient Clinic building, where it is picked up at regular intervals. Hazardous waste is collected in a series of 5-gallon, 15-gallon and 55-gallon drums located through the site and is disposed of via GEMS via their hazardous waste contract, currently with BWS.

At Perry Point, trash is accumulated at the Building 1 loading dock at Perry Point before being picked up at regular intervals. Hazardous waste is collected at satellite accumulation areas (SAAs) and a 90-day central accumulation area (CAA). The waste is periodically moved from the SAAs to the CAA when the

MCM #6: Pollution Prevention and Good Housekeeping

storage volume limit is reached. Once at the CAA, waste remains for a maximum of 90 days until it is collected by the waste removal contractor Biomedical Waste Services. GEMS oversees this collection, and ensures that federal and state disposal regulations are followed.

Does the permittee have a current State of Maryland public agency permit to apply pesticides?

Yes No

If No, explain (e.g., contractor applies pesticides):

Does the permittee employ at least one individual certified in pesticide application?

Yes No

If Yes, list name(s):

**C. Scott Griffin
C. Eric Reynolds
Edward Lindemann
Jeremy Schwaderer**

If the permittee applied pesticides during the reporting year, describe good housekeeping methods (e.g., integrated pest management, alternative materials/techniques):

The VA is careful to follow procedures described in their Integrated Pest Management Program when applying pesticides at Loch Raven and Perry Point. Good housekeeping procedures related to the application of pesticides found in the Pollution Prevention and Good Housekeeping Guidance document, provided in Appendix L, include:

- **Following instructions on pesticide packaging related to mixing, application, and storage;**
- **Keeping spill kits nearby when transferring or mixing pesticides;**
- **Keeping application equipment clean and free of chemical buildup;**
- **Applying pesticides only in dry weather; and**
- **Never mixing, applying, or storing pesticides near a storm drain.**

If the permittee applied fertilizer during the reporting year, describe good housekeeping methods (e.g., application methods, chemical storage, native or low maintenance species, training):

MCM #6: Pollution Prevention and Good Housekeeping

Good housekeeping procedures related to the application of fertilizers found in the Pollution Prevention and Good Housekeeping Guidance document, provided in Appendix L, include:

- **Following instructions on fertilizer packaging related to mixing, application, and storage;**
- **Keeping spill kits nearby when transferring or mixing fertilizers;**
- **Never applying fertilizers to frozen ground;**
- **Keeping application equipment clean and free of chemical buildup;**
- **Applying fertilizers only in dry weather; and**
- **Never mixing, applying, or storing fertilizers near a storm drain**

If the permittee applied materials for snow and ice control during the reporting year, describe good housekeeping methods (e.g., pre-treatment, truck calibration and storage, salt domes):

Good housekeeping procedures related to snow and ice control found in the Pollution Prevention and Good Housekeeping Guidance document, provided in Appendix L, include:

- **Minimizing spills by not overloading salt and sand spreading trucks and equipment;**
- **Using the least amount of sand and salt necessary to achieve safe walking/driving conditions;**
- **Establishing snow storage areas that are not located near storm drains. Ideal snow storage areas are located on pervious areas where snow melt can infiltrate; and**
- **Sweeping excess salt and sand from paved areas after the last snow.**

Describe good housekeeping BMP alternatives not listed above:

The VA does not follow additional good housekeeping BMP alternatives.

4. If applicable, provide a status update for permittee owned or operated properties regarding coverage under the Maryland General Permit for Stormwater Discharges Associated with Industrial Activity or an individual industrial surface water discharge permit:

No VAMHCS facilities are currently covered under an MDE Individual Industrial permit or under the General Permit for Stormwater Discharges Associated with Industrial Activity. Please note, the VA did a regulatory

MCM #6: Pollution Prevention and Good Housekeeping
evaluation and neither Loch Raven nor Perry Point are subject to the
MDE general permits for the application of pesticides.

5. List the total cost of implementing this MCM over the permit term:

The VA contracted with a MS4 implementation team (GORDON and AECOM) to provide full services for the Section 2 activities at both Loch Raven and Perry Point. The approximate cost of implementation for MCM 6 to date is \$20K.



B –YEAR 1 COMMENT RESPONSE LETTER



October 16, 2020

Christina Lyerly
Natural Resources Planner IV
Water and Science Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 20230

Re: General Permit No. 13-SF-5501
NPDES MS4 Perry Point/Loch Raven- Year 1
GORDON Project: 3287-0301

Dear Ms. Lyerly:

On behalf of the VAMHCS, GORDON provides the following in response to your letter dated September 02, 2020:

Comment 1: The Progress Report Submittal Form was complete and included a signature for the appropriate responsible personnel and contact information. This information is required to be updated annually.

Response: Comment acknowledged.

Comment 2: Prior to the October 31, 2019 Progress Report deadline, the VA requested an extension, which the Department granted. The VA met the adjusted deadline. Future Progress Reports must be submitted by October 31st of each year.

Response: Comment acknowledged.

Comment 3: The next Progress Report is due on October 31, 2020 and must include:

- o Updates to the impervious area restoration progress and responses to all comments outlined below.
- o Progress on program implementation to address the six minimum control measures (MCMs) for the first two years of the permit term (i.e., October 31, 2018 – June 30, 2020). While this information is only required in years 2 and 4, the Department will request any supplemental information related to MCM program development as necessary at any time during the permit term. This will ensure the VA remains on track for achieving compliance with the permit conditions.
- o The MS4 Progress Report in accordance with Appendix D of the permit, including any supplemental attachments in order to thoroughly address reporting requirements.

Response: Comment acknowledged.

Comment 4: VA has calculated an impervious area baseline of 84.38 acres for the Loch Raven and Perry Point properties, and a 20% restoration target of 16.88 acres.

Response: Comment acknowledged.

Comment 5: The methodology used in the impervious area baseline report needs further clarification. The Department offers the following comments:

- a. The VA used a multiplier to increase credit for new development best management practices (BMPs) that treat more than one inch of rainfall (PE > 1). However, BMPs that have a PE greater than one inch and are designed to meet new development requirements may not receive credit for over treatment or apply any treated area toward restoration. According to the impervious acres reported in a BMP table on page 33 of the Progress Report, the maximum number of impervious acres that could be considered treated is 4.03 at the Perry Point property. No over treatment was claimed at the Loch Raven property.
- b. The impervious surface removal (IMPP) completed in 2015 was area that was deducted from the baseline (0.04 acres). The BMP database noted that the area was part of a project that combined new development and redevelopment. Removal of existing impervious area would be implemented to meet redevelopment requirements and therefore, not deducted from the baseline and instead counted toward restoration.
- c. The baseline and restoration target must be updated and submitted in the next Progress Report.

Response: a. The credit multiplier for new development BMPs with a PE > 1 have been updated to 1 inch. See Appendix D of the Year 2 Progress Report.

b. A total of 0.12 acre of impervious cover was removed in 2015 as part of the Loch Raven VA Hospital – New Ramp and Patio project and was added to the total baseline impervious area at Loch Raven as of 2019. Out of 0.12 acre of impervious area removed:

- **0.05 acre was removed to meet the new development project requirements and was counted as existing BMP and treatment credits were deducted from total baseline impervious cover.**
- **0.07 acre was removed to meet the redevelopment project requirements and was counted towards restoration requirements.**

c. The baseline and restoration targets have been updated and submitted with the Year 2 Progress Report. See Appendix D and E of the Year 2 Progress Report.

Comment 6: For BMPs that do not have as-builts submitted to the Department's Plan Review Division, the VA must provide a long-term plan to complete this work. When as-built plans are not available for older BMPs, the VA can use a comprehensive inspection to verify water quality treatment in accordance with the Department's guidance, available at:

mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/NPDES%20PI%20Resource%20Files/MDE%20Memo%20on%20BMPs%20and

[%20Completion%20Dates%20for%20MS4%20Permit%20Requirements%204_9_2018.pdf.](#)

Response: The VA has provided the status of available as-builts for the BMPs at Loch Raven and Perry Point. See Appendix F in the Year 2 Progress Report. The VA is committed to obtaining missing as-built information by the end of the permit cycle in October 2023. The VA has identified this as a work plan item with the last bullet of Years 3 and 5 to determine a funding source to maintain and inspect BMPs, to include obtaining as-built information. See Appendix C of the Year 2 Progress Report.

Comment 7: The VA has developed detailed inspection and maintenance checklists for BMP maintenance and has begun providing training to staff. The Department commends the VA for advancing this program.

Response: Comment acknowledged.

Comment 8: The VA provided a BMP database acceptable for the first year Progress Report. The Department provides the following comments:

- a. LOCAL_BMP_ID is an optional field, however, populating this field will allow for improved tracking and coordination with the Department. The local BMP ID should be the SF number associated with the project's submittal to the Department's Plan Review Division.
- b. PE should be 0 and impervious acres considered untreated for any BMPs that have a reinspection status of fail (i.e., USVA20BMP0103). The baseline and BMP database may be revised once this BMP is repaired. The VA noted that this treatment will be removed from the baseline in year two if the facility has not been repaired by that report submittal.
- c. The Loch Raven database should be updated with BMP IDs consistent with the format provided in the permit (i.e., the last digits should be consecutive starting with 0001).

Response: a. As discussed with MDE staff via email on 10/2/2020, the local BMP ID are populated with re-assigned numbers so that each BMP on the site had a unique identifier. No changes were made to the database.

b. Comment acknowledged. All credited BMPs have passed inspection and have been reported as such in the Year 2 Progress Report.

c. As discussed with MDE staff via email on 10/2/2020, the BMP IDs have been revised. Loch Raven BMPs are tagged with "USLR" and Perry Point BMPs are tagged with "USPP". All BMP IDs start with "0001) and are listed in consecutive order. See Appendix F of the Year 2 Progress Report.

Comment 9: The VA must continue to update and annually submit a database in Excel format for all BMPs.

Response: Comment acknowledged.

Comment 10: VA provided an acceptable work plan with the FY 2019 Progress Report submittal. The work plan noted the need to maintain BMPs, keep maintenance records, and update inspection status. The work plan also stated the intent to incorporate future growth site-wide into restoration planning efforts. Additional information to incorporate into future work plans includes identification of funding needs and strategies for ensuring proper BMP inspection and maintenance with consideration of the long-term costs.

Response: The work plan has been updated to include the identification of funding needs and strategies in years 3 and 5. See Appendix C of the Year 2 Progress Report.

Comment 11: The work plan must be updated and submitted annually and reflect adaptive management for meeting permit requirements.

Response: Comment acknowledged.

Comment 12: The VA submitted a restoration activity schedule that included eight restoration projects that restored 117.19 impervious acres at the Perry Point and Loch Raven properties.

Response: Comment acknowledged.

Comment 13: The VA reported achieving 115.3 acres of restoration through a shoreline management project. As detailed in the submitted as-built plans, the project is a hardened shoreline project that uses a stone revetment design. However, research has shown that hard shoreline designs do not provide the level of benefit that a living shoreline does. While hard shore projects prevent sediment loss due to erosion, the Chesapeake Bay Program *report Recommendations of the Expert Panel to Define Removal Rates for Shoreline Management Projects* states that they are not the recommended shoreline management practice in the Chesapeake Bay and references research suggesting that these projects negatively impact habitat value. The Department's policy is that this type of practice receives a reduced credit of 0.01 acre per linear foot of managed shoreline, reflecting the more limited benefits. The restoration credit for the shoreline management project is 28.83 acres. This project exceeds the 20% restoration target.

Response: The restoration credit for the shoreline management has been reduced to 0.01 acres per linear foot of shoreline. See Appendix E of the Year 2 Progress Report.

Christina Lyerly
Maryland Department of the Environment
VA NPDES General Permit MS4 – Year 1
Loch Raven and Perry Point
October 30, 2020
Page 5

Comment 14: The VA anticipates evaluating opportunities to improve water quality at the two properties and prepare for future restoration requirements. The Department encourages the VA to proceed with considering these opportunities.

Response: Comment acknowledged.

Comment 15: The Department requests that future activity schedules be submitted in the Excel format available on the Department's website.

Response: The restoration activity schedule for both VA properties have been revised to utilize the MDE schedule. See Appendix E of the Year 2 Progress Report.

Comment 16: The VA reported a cost of \$0 for developing and implementing an impervious area restoration program during the permit term. The Department requests that the VA consider costs of the analysis, BMP maintenance, and future planning efforts, as applicable.

Response: An approximate cost for implementation has been populated for Permit Year 1 and Year 2. See Appendix A of the Year 2 Progress Report.

Comment 17: Resources related to MS4 program development and guidance for compliance with permit requirements are available on the Department's website at: mde.maryland.gov/programs/Water/StormwaterManagementProgram/Pages/NPDES_MS4_New.aspx.

Response: Comment acknowledged.

Please feel free to contact me at 703-263-1900 or by email at kryan@gordon.us.com if you should have any further questions.

Sincerely,
WILLIAM H. GORDON ASSOCIATES, INC.

Kelsey Ryan, PE
Project Manager

g:\project\sbu\admin\3287\0301\4-correspondence\mde comments\2020-10-16_mde comment response.doc



C – IMPERVIOUS AREA RESTORATION WORK PLAN

**IMPERVIOUS AREA RESTORATION WORK PLAN
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501**

Timeline	Management Strategies and Goals
Year 2	<ul style="list-style-type: none"> • Refine restoration work plan as needed. • Update Urban BMP database. • Maintain all BMPs. Keep records of maintenance activities. Update documented maintenance and inspection status for all BMPs. • Incorporate future growth site-wide into restoration planning efforts.
Year 3	<ul style="list-style-type: none"> • Refine restoration work plan as needed. • Update Urban BMP database. • Inspect and maintain all BMPs. Keep records of inspections and maintenance activities. Update documented maintenance and inspection status for all BMPs. • Incorporate future growth site-wide into restoration planning efforts. • Identify funding needs and strategies ensuring proper BMP inspection and maintenance with consideration of long-term costs.
Year 4	<ul style="list-style-type: none"> • Refine restoration work plan as needed. • Update Urban BMP database. • Inspect and maintain all BMPs. Keep records of inspections and maintenance activities. Update documented maintenance and inspection status for all BMPs. • Incorporate future growth site-wide into restoration planning efforts.
Year 5	<ul style="list-style-type: none"> • Refine restoration work plan as needed. • Update Urban BMP database. • Maintain all BMPs. Keep records of maintenance activities. Update documented maintenance and inspection status for all BMPs. • Incorporate future growth site-wide into restoration planning efforts. • Identify funding needs and strategies ensuring proper BMP inspection and maintenance with consideration of long-term costs.



D – IMPERVIOUS AREA BASELINE IMPERVIOUS COMPUTATIONS

SUMMARY - IMPERVIOUS AREA BASELINE ASSESSMENT
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

Impervious Area Baseline Computations		
Updated Baseline - 2020		
	Description	Area (ac)
A	Impervious Area Baseline	91.30
B	Impervious area treated by stormwater quality BMPs (ac)	5.33
C	Impervious area treated by BMPs providing partial water quality treatment (ac)	0.02
D	Impervious area treated by NDNRs, NDRRs, and NSCA (non-structural) (ac)	0.05
E	Existing Treated Impervious Area (ac)	5.40
F	Existing Untreated Impervious Area (ac)	85.90
G	20% Restoration Requirement (ac)	17.18

Prepared by:
GORDON/AECOM - 703-263-1900

(Ver. 10/2020)



LOCH RAVEN - IMPERVIOUS AREA BASELINE ASSESSMENT
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

Impervious Area Baseline Computations		
Baseline Year - 2019		
	Description	Area (ac)
A	Impervious Area Baseline*	8.52
B	Impervious area treated by stormwater quality BMPs (ac)	1.37
C	Impervious area treated by BMPs providing partial water quality treatment (ac)	0
D	Impervious area treated by NDNRs, NDRRs, and NCSA (non-structural) (ac)	0
E	Existing Treated Impervious Area (ac)	1.37
F	Existing Untreated Impervious Area (ac)	7.15
G	20% Restoration Requirement (ac)	1.43

*Baseline impervious cover derived from aerial survey conducted by Quantum Spatial, Inc. in November 2019 and confirmed by December 2019 site visit by Gordon and AECOM.

LOCH RAVEN - IMPERVIOUS AREA BASELINE ASSESSMENT - BMP DATA
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

BMP ID	BMP Name	MDE BMP Category	BMP Category (E,S,A)	Location	Non Structural Practice (Yes/No)	Year Built	Development Category	Pe (in)	Impervious Area Treated (ac)	Credit Multiplier	Impervious Acre Credit (ac)	WQ Credit Type (Full/Partial/Non-Structural/No Credits)	Comment
LR-MTD-0001A	Contech StormFilter	FUND	S	North Entrance parking lot	No	2010	NEWD	1	0.38	1	0.38	Full	
LR-MTD-0001B	Detention Structure	XOTH	S	North Entrance parking lot	No	2010	NEWD	0	0.38	0	0.00	No Credits	
LR-MTD-0002	Baysaver BayFilter	FUND	S	Community Living Center parking lot median	No	2012	NEWD	1	0.28	1	0.28	Full	
LR-XOTH-0001	Recharge Area	XOTH	S	Community Living Center courtyard	No	2012	NEWD	0	0.28	0	0.00	No Credits	
LR-IMPP-0001	Impervious Area Removal	IMPP	A	Site-wide	No	2015	NEWD	-	0.05	0.75	0.04	Full	This impervious area is shown in the baseline impervious cover, though it is not actually present in year 2019. For the purposes of this exercise, this cover is considered "present" so that it can be credited as treated impervious area for the baseline calculations.
LR-MTD-0003A	Contech StormFilter	FUND	S	South parking lot	No	2012	NEWD	1	0.67	1	0.67	Full	
LR-MTD-0003B	Detention Structure	XOTH	S	South parking lot	No	2012	NEWD	0	0.67	0	0.00	No Credits	

PERRY POINT - IMPERVIOUS AREA BASELINE ASSESSMENT
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

Impervious Area Baseline Computations		
Updated Baseline - 2020		
	Description	Area (ac)
A	Impervious Area Baseline*	82.78
B	Impervious area treated by stormwater quality BMPs (ac)	3.96
C	Impervious area treated by BMPs providing partial water quality treatment (ac)	0.02
D	Impervious area treated by NDNRs, NDRRs, and NSCA (non-structural) (ac)	0.05
E	Existing Treated Impervious Area (ac)	4.03
F	Existing Untreated Impervious Area (ac)	78.75
G	20% Restoration Requirement (ac)	15.75

*Baseline impervious area derived from Perry Point VAMC-Site Wide Utility and Topo Survey published on February 2018 and supplemented using field verification performed on January 2020 and latest aerial imagery at time of baseline year (2019). Other previously removed impervious surfaces between years 2006 and 2019 were digitized and added to the total baseline impervious area.

PERRY POINT - IMPERVIOUS AREA BASELINE ASSESSMENT - BMP DATA
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

BMP ID	BMP Name	MDE BMP Category	BMP Category (E,S,A)	Location	Non Structural Practice (Yes/No)	Year Built	Development Category	Pe (in)	Impervious Area Treated (ac)	Credit Multiplier	Impervious Acre Credit (ac)	WQ Credit Type (Full/Partial/Non-Structural/No Credits)	Comment
PP-BIO-002	Micro-Bioretenention	MMBR	E	Truck Entrance - SE corner of Fifth Street & Avenue G (2)	No	2014	NEWD	2.6	0.27	1	0.27	Full	Built between 2006 to baseline year (2019).
PP-BIO-003	Micro-Bioretenention	MMBR	E	Village - South of Second Street (D)	No	2019	NEWD	2.6	0.08	1	0.08	Full	Built between 2006 to baseline year (2019)
PP-BIO-004	Micro-Bioretenention	MMBR	E	Village - North of Fourth Street (I)	No	2019	NEWD	2.6	0.13	1	0.13	Full	Built between 2006 to baseline year (2019)
PP-BIO-005	Micro-Bioretenention	MMBR	E	Village - North of Fourth Street (J)	No	2019	NEWD	2.6	0.10	1	0.10	Full	Built between 2006 to baseline year (2019)
PP-BIO-006	Micro-Bioretenention	MMBR	E	Village - North of Fourth Street (L)	No	2019	NEWD	2.6	0.08	1	0.08	Full	Built between 2006 to baseline year (2019)
PP-BIO-007	Micro-Bioretenention	MMBR	E	Village - Fourth Street & Avenue C (K)	No	2019	NEWD	2.6	0.11	1	0.11	Full	Built between 2006 to baseline year (2019)
PP-BIO-008	Micro-Bioretenention	MMBR	E	Village - Fourth Street & Avenue B (M)	No	2019	NEWD	2.6	0.14	1	0.14	Full	Built between 2006 to baseline year (2019)
PP-BIO-009	Micro-Bioretenention	MMBR	E	Village - East of Avenue B (T)	No	2019	NEWD	2.6	0.22	1	0.22	Full	Built between 2006 to baseline year (2019)
PP-BIO-010	Micro-Bioretenention	MMBR	E	Village - West of Avenue B (N)	No	2019	NEWD	2.6	0.11	1	0.11	Full	Built between 2006 to baseline year (2019)
PP-BIO-011	Micro-Bioretenention	MMBR	E	Village - West of Avenue B (O)	No	2019	NEWD	2.6	0.21	1	0.21	Full	Built between 2006 to baseline year (2019)
PP-BIO-012	Micro-Bioretenention	MMBR	E	Village - East of Avenue A (R')	No	2019	NEWD	2.6	0.11	1	0.11	Full	Built between 2006 to baseline year (2019)
PP-BIO-013	Micro-Bioretenention	MMBR	E	Village - East of Avenue A (P)	No	2019	NEWD	2.5	0.26	1	0.26	Full	Built between 2006 to baseline year (2019)
PP-BIO-014	Micro-Bioretenention	MMBR	E	Village - East of Avenue A (S)	No	2019	NEWD	2.6	0.15	1	0.15	Full	Built between 2006 to baseline year (2019)
PP-BIO-020	Micro-Bioretenention	MMBR	E	Water Tank	No	2016	NEWD	2.4	0.32	1	0.32	Full	Built between 2006 to baseline year (2019).
PP-BWS-001	Bio-Swale	MSWB	E	Truck Entrance - West of Entrance (1)	No	2014	NEWD	1.8	0.33	1	0.33	Full	Built between 2006 to baseline year (2019).
PP-BWS-002	Bio-Swale	MSWB	E	Village - South of Second Street (A)	No	2019	NEWD	2.6	0.17	1	0.17	Full	Built between 2006 to baseline year (2019)
PP-BWS-003	Bio-Swale	MSWB	E	Village - South of Second Street (B)	No	2019	NEWD	2.6	0.07	1	0.07	Full	Built between 2006 to baseline year (2019)
PP-BWS-004	Bio-Swale	MSWB	E	Village - South of Second Street (C)	No	2019	NEWD	2.6	0.12	1	0.12	Full	Built between 2006 to baseline year (2019)
PP-BWS-005	Bio-Swale	MSWB	E	Village - North of Third Street (E')	No	2019	NEWD	2.6	0.41	1	0.41	Full	Built between 2006 to baseline year (2019)
PP-BWS-006	Bio-Swale	MSWB	E	Village - South of Third Street (F)	No	2019	NEWD	2.6	0.25	1	0.25	Full	Built between 2006 to baseline year (2019)
PP-BWS-007	Bio-Swale	MSWB	E	Village - North of Fourth Street (G)	No	2019	NEWD	2.6	0.32	1	0.32	Full	Built between 2006 to baseline year (2019)
PP-GWS-001	Grass Swale	MSWG	E	Solar Panels - Near intersection of Fifth Avenue and Avenue G	No	2019	NEWD	0.58	0.03	0.58	0.02	Partial	Built between 2006 to baseline year (2019)
PP-NDNR-004	Disconnection of Non-Rooftop Runoff	NDNR	E	Solar Panels - Near intersection of Fifth Avenue and Avenue G	Yes	2019	NEWD	1	0.05	1	0.05	Non Structural	Built between 2006 to baseline year (2019)



E – RESTORATION ACTIVITY SCHEDULE

**F – URBAN BMP DATABASES AND AS-BUILT INFORMATION**

See excel spreadsheets

**G – MCM #1 – PUBLIC/PERSONNEL EDUCATION AND OUTREACH**

- MS4 permit tracking guidance document
 - Water quality complaints tracker
 - Education and outreach materials
 - Employee training materials

**MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT TRACKING
LOCH RAVEN AND PERRY POINT VA MEDICAL CENTERS
ATTACHMENT D**

1. PURPOSE AND AUTHORITY

The purpose of this attachment is to establish procedures for receiving and tracking water quality related complaints, construction complaints, erosion and sediment control (grading) permit notice of violations, and tracking active erosion and sediment (grading) permits, which is a component of Minimum Control Measure (MCM) 1: Public or Personnel Education and Outreach and MCM 4: Construction Site Stormwater Runoff Control, required under the Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4). This process must be followed by any Veteran's Affairs (VA) employee who is responsible for MS4 permit tracking at the Loch Raven and Perry Point Medical Centers.

2. Stormwater Quality Issues

The VA has established a system for reporting water quality issues. Facility residents, staff, veterans, visitors, or the general public may report complaints to VAMHCSGEMSPprogram@va.gov. These complaints are provided by the VA Maryland HealthCare System (VAMHCS) Green Environmental Management System (GEMS) personnel to the appropriate service who may be causing the water quality issue--such as the Loch Raven or Perry Point Facilities and Engineering Projects or Maintenance and Operations Service-- and a resolution is reported back to the complainant if appropriate. The system has established three (3) tracking databases for tracking the following types of complaints:

a. General Stormwater Quality Issues

Due to the nature of operations at both VA Medical Centers, there is potential for stormwater pollution through leaks, spills, and storm events that result in precipitation contacting pollutant sources. See VAMHCS Water Quality Complaint Tracker.

b. Construction Site Stormwater Quality Issues

1) General Construction Site and Erosion and Sediment Control Complaints - These issues can be caused by incidental release of sediments and debris from active construction sites, and issues may not warrant a violation. See VAMHCS Construction Complaint Tracker.

2) Erosion and Sediment Control (Grading) Permit and Erosion and Sediment Control (Grading) Permit Notice of Violations - Issues can be caused by contractor negligence and not implementing the approved erosion and sediment control plans. Hence, all erosion and sediment control (grading) permits for active construction activities, along with any related violations, should be tracked. See Erosion and

Sediment Control (Grading) Permit and Erosion and Sediment Control (Grading) Permit Notice of Violation (NOV) Tracker.

3. Procedures

a. Receiving Complaints

Complainants may report complaints to VAMHCSGEMSProgram@va.gov or (410) 642-2411, extension 25227 or (410) 605-7000, extension 53053. The complaints should at a minimum contain the following information:

- 1) *Complainant information like name, phone number, and email address.*
- 2) *A full description of the complaint including location of where the issue is encountered.*

b. Tracking General Stormwater Quality and Construction Site Stormwater Quality Complaints

- 1) GEMS Manager receives the email and enters the information into the Construction Complaint tracker.
- 2) GEMS Manager identifies the associated parties, project, or responsible project contact and forwards the complaint, as appropriate.
- 3) The associated party responsible oversees the investigation and resolution in and provides updates to the GEMS Manager.
- 4) The responsible party oversees the investigation and resolution in coordination with the project contact.
- 5) GEMS or the responsible party notifies the complainant of the resolution within 7 days of receiving the complaint. It is GEMS' discretion to notify the complainant for general stormwater quality issues.

c. Tracking Erosion and Sediment Control (Grading) Permits

The Loch Raven and Perry Point Projects Section Supervisors will track all obtained erosion sediment control (grading) permits in the Erosion and Sediment Control (Grading) Permit Tracker database and notify the GEMS Manager when a new permit and/or NOV has been entered. The permit tracker will include the following information:

- 1) *The erosion and sediment control (grading) permit number*
- 2) *Approval Date*
- 3) *Project Description*
- 4) *Total disturbed area acreage*
- 5) *Project status (Active/Inactive)*
- 6) *MDE violation notices (Y/N)*
- 7) *Date(s) for received violations*

d. Tracking Notice of Erosion and Sediment Control Violations (NOV)

The Loch Raven and Perry Point Projects Section Supervisors will track all received notices of violations associated with construction activities in the Erosion and Sediment Control (Grading) permit NOV Tracker database and notify GEMS of status. The violation tracker will include the following information:

- 1) *The notice of violation number*
- 2) *Date issued*
- 3) *Associated erosion and sediment control (grading) permit*
- 4) *Responsible party*
- 5) *Violation description*
- 6) *Description of enforcement activities*

4. ASSIGNMENT OF RESPONSIBILITIES

VAMHCS GEMS Manager(s) and VAMHCS Facilities and Engineering Service (FES) Loch Raven and Perry Point Projects Section Supervisors: The GEMS manager will apprise the Loch Raven and Perry Point FES Construction Projects Section Supervisors of the water quality complaints and construction activity complaints, who in turn will manage and assign resolution to the responsible parties. Loch Raven and Perry Point FES Projects Section Supervisors will provide outcome to VAMHCS GEMS Manager who will review the response and determine if the complaints have adequately been addressed.

5. DEFINITIONS

None.

6. REFERENCES

Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4), General Discharge Permit No. 13-SF-5501

VAMHCS Waste Disposal Chart



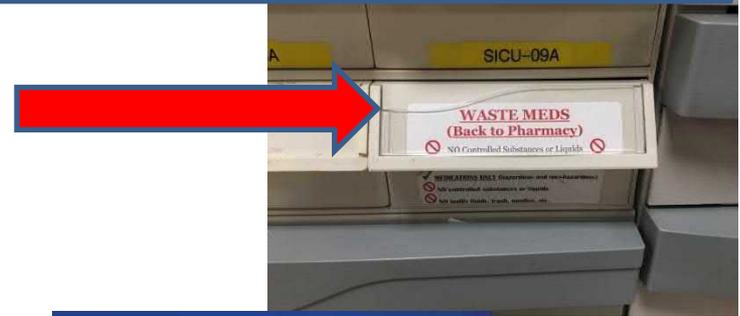
Questions? Email VAMHCSGEMSPProgram@va.gov or Call GEMS, PP x25227 or EMS: Baltimore: x55696 Perry Point: x26317 Loch Raven x55894
 Need a container? Call MSD: Baltimore: x56336; 56341; or 56338 Perry Point: x22839; or 26920 Loch Raven x57674; or 54642

							
Infectious / Bio-hazardous/ Medical Waste (Red Container w/ Red bag)	Trace Chemo and Combined Trace Chemo/ Infectious Waste (Yellow Container)	EPA Regulated U& D-Listed Hazardous and Chemo Waste (Black Container)	EPA Regulated Hazardous P-Listed Waste (Quart Container in Pharmacy)	Hazardous and Non-Hazardous Pharmaceuticals (In Nursing and Clinical Units)	Non-Hazardous Pharmaceuticals (Container located in Pharmacy & Morgue)	Regular Solid Waste, No Containments (Ordinary Trash Can)	Sharps: Needles (Sharps Containers)
Serviced by EMS	Serviced by EMS (Located in Oncology, Baltimore Pharmacy, and on Clinical Floors where Chemo is Administered Bedside)	Serviced by VAMHCS GEMS Coordinator See also pharmacy-specific Hazardous Waste Chart	Serviced by VAMHCS GEMS Coordinator See also pharmacy-specific Hazardous Waste Chart	Serviced by Pharmacy (Med Cart Drawer)	Serviced by EMS See also pharmacy-specific Hazardous Waste Chart	Serviced by EMS	Serviced by EMS
<ul style="list-style-type: none"> Materials Not exposed to CHEMO but saturated with blood or body fluids (i.e. could get at least a drop out by squeezing or flicking) Containers of blood products or other potentially infectious materials Absorbent materials not saturated with blood go in ordinary trash. *No controlled Substances	<ul style="list-style-type: none"> Empty* chemo containers (IV bags, tubing, vials, syringes, bags) NO ARSENIC TRIOXIDE WASTES IV Sets that have held chemo and remain attached to catheters or other bloody materials. Gloves, gowns, ziplock bags, other items used to administer chemo but NOT VISIBLY CONTAMINATED WITH CHEMO. (i.e. no droplets) NO LINENS (they go into Yellow Linen hamper per EMS instructions) *No controlled Substances	-U & D-Listed Medications & Wastes (See Pharmacy-Specific Waste Chart) <ul style="list-style-type: none"> Chemo Containers that are NOT EMPTY and have NO CATHETER attached. Arsenic Trioxide chemo containers and IV sets and gloves, gowns, bags, or other items used to administer Arsenic Trioxide that are VISIBLY CONTAMINATED with Arsenic Trioxide. Gloves, gowns, bags VISIBLY CONTAMINATED with chemo. Chemo or Hazardous Drug/Chemical Spill Cleanup Materials *No controlled Substances	-P-Listed Medications & Wastes (See Pharmacy-Specific Waste Chart) <ul style="list-style-type: none"> -No Needles -No Narcotics -No Packaging -No Gloves *No controlled Substances	Drawer on Med cart designated & Labeled by pharmacy for "Waste meds-Back to Pharmacy" for items listed in the Hazardous and Non-Hazardous Pharmaceutical columns. *No controlled Substances	Medications that are NOT Hazardous, Cytotoxic or Antineoplastic (e.g., aspirin, certain antibiotics) Non-chemo IV bags Morgue waste *Boxes must be marked "Incinerate" *No controlled Substances	<ul style="list-style-type: none"> Materials not exposed to chemo or saturated with blood or body fluids (i.e. could not get a drop by squeezing or flicking) Examples: packaging, food waste *No controlled Substances	<ul style="list-style-type: none"> All sharp objects that have NOT been exposed to chemo. Used syringes with Epinephrine residual NO WASTE PHARMACEUTICALS (See Med Cart Drawer or Omni Cell Drawer for Back to Pharmacy)

Please note: The VA is in the process of updating the contents of this brochure to correspond to the new process outlined on the brochure titled "How to Dispose of Medications in Patient Care Areas", located on the next sheet of this report

How to Dispose of Medications in Patient Care Areas:

- **Aerosols (Inhalers) ONLY** out of original packaging after patient administration (NO controlled substances or sharps) go to “waste meds” DRAWER on med carts



- **Used/Opened/Leftover Pharmaceutical pills/doses and Creams, Liquids, Topicals**, out of the original packaging after patient administration. **No Inhalers!!**
- **Nicotine Wrappers and Coumadin Waste**



- **Unused/unopened meds** never used by a patient go in the “patient meds return” blue or yellow bin in med room (may be round or rectangle)



- **Used sharps** go only in sharps container on med cart. Do not put used sharps in waste meds drawer!



- **Opened Controlled Substances** – Drug Buster (ONLY Controls, Nothing else) * (see green box)



How to Submit a Hazardous Waste Turn In to GEMS/Safety via

- <https://leaf.va.gov/vamhcs/homepage/>
- Click on the “GEMS Requests” button (middle column, 5th one down): <https://leaf.va.gov/vamhcs/gems/>
- Click on the “New GEMS Request” button on left (top button): <https://leaf.va.gov/vamhcs/gems/?a=newform>
- Enter waste information per LEAF process and submit
- This will then send the turn in to the VAMHCSGEMSProgram@va.gov and we will route and arrange for pickup of your waste.
- The LEAF portal makes it easy for you to get your waste picked up and better for us to track it per EPA regulations.



Only rain goes in the storm drain



Shoreline cleanups



Water sampling



Tree planting



Green practices that treat runoff

What is the VA doing to protect Maryland's waters?

If you would like more information, please contact VAMHCSGEMSPprogram@va.gov



How Can We Celebrate Earth Day when there's a Global Pandemic going on???

There are many ways we can help the planet while maintaining social distancing and supporting COVID-19 prevention:

1. Learn about an Earth Topic such as recycling, climate change, composting, stormwater pollution
2. Check out the VAMHCS Green Environmental Management Program at our page on the VA Maryland Health Care System website: <https://www.maryland.va.gov/about/GEMS.asp>
3. Take shorter showers
4. Read a book vs streaming online (uses less energy)
5. Replace Paper towel use by using reusable (and washable) cloths
6. Look up recipes for homemade disinfectants you can try at home
7. Try a plant-based recipe
8. Read *Eleven Actions for the Planet During a Pandemic* on the Earthday.org website: <https://www.earthday.org/11-actions-for-the-planet-during-a-pandemic/>
9. Plant a Tree in your yard or try indoor gardening or adding some plants inside your home



10. Remember, only Rain down the storm drain (at work, at home, everywhere)—whatever you put into a storm drain goes directly into raw water sources that are treated for Your Drinking water and into the environment where fish and aquatic wildlife live that You may consume
11. Check out what the VAMHCS is already doing to help our Planet (even during the COVID-19 Pandemic):
 - a. Perry Point VAMC was recognized by The Arbor Day Foundation as a Tree Campus Healthcare facility in February 2020 Thanks to the Perry Point VAMC Grounds Crew led by Kevin Hill

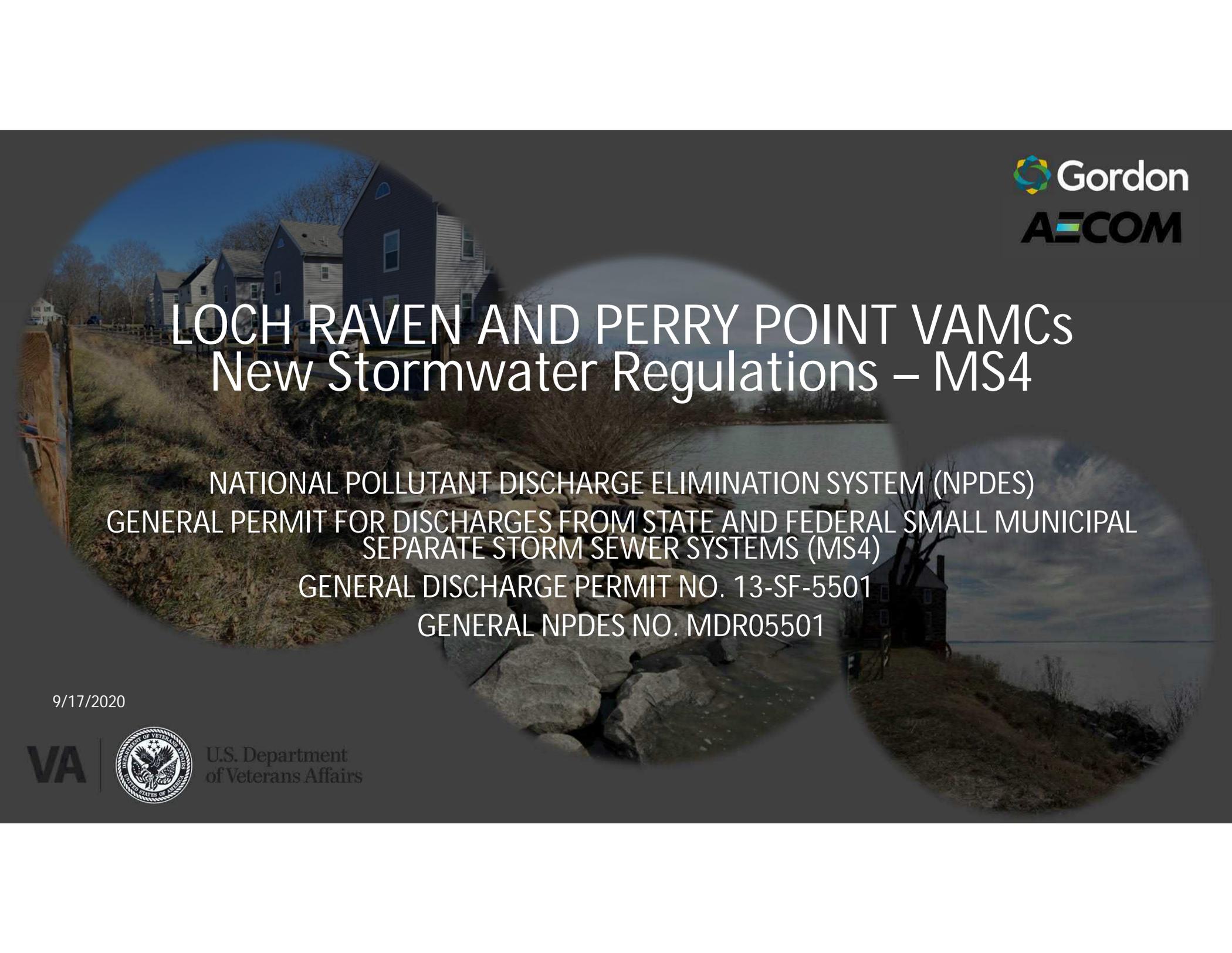


- b. Stormwater pollution prevention (see attached)
- c. Single Stream Recycling
- d. Regularly recycling Batteries, Fluorescent Bulbs, Ballasts, and Mercury-Containing Equipment
- e. Food Waste from the Perry Point Nutrition and Food Service is Composted at Veteran's Compost in Aberdeen, MD
- f. Green Environmental Management System Committee
- g. Training VAMC Grounds Crew on stormwater management facility maintenance
- h. Inspecting and maintaining onsite stormwater management facilities
- i. Testing water at site outfalls for illicit discharges. No illicit discharges have been documented to date.
- j. Developing a stormwater education and outreach plan for VAMC personnel
- k. Developing a program to implement stormwater management facilities onsite to help meet Chesapeake Bay restoration goals
- l. Developing standard operating procedures for good housekeeping, pollution prevention practices, and prevention of illicit discharges to our waters

If you have any questions or want to know more, please contact the VAMHCSGEMSPProgram@va.gov or check out our page on the VA Maryland Health Care System website:

<https://www.maryland.va.gov/about/GEMS.asp>





LOCH RAVEN AND PERRY POINT VAMCs New Stormwater Regulations – MS4

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR DISCHARGES FROM STATE AND FEDERAL SMALL MUNICIPAL
SEPARATE STORM SEWER SYSTEMS (MS4)
GENERAL DISCHARGE PERMIT NO. 13-SF-5501
GENERAL NPDES NO. MDR05501

9/17/2020

VA



U.S. Department
of Veterans Affairs



MS4 Permitting

- Loch Raven and Perry Point VAMCs Only
- Baltimore VAMC Exempt because of location
- Permit Term October 2018 – October 2023
- Goal is to control and improve the quality of stormwater runoff being discharged from state and federal properties.
- Goal is to reduce sediment and nutrient loads to Chesapeake Bay and Rivers
- Maryland Watershed Implementation Plan – Includes strategies for Nitrogen, Phosphorus, and Sediment Load Reductions to address the Chesapeake Bay Total Maximum Daily Load (TMDL) goals

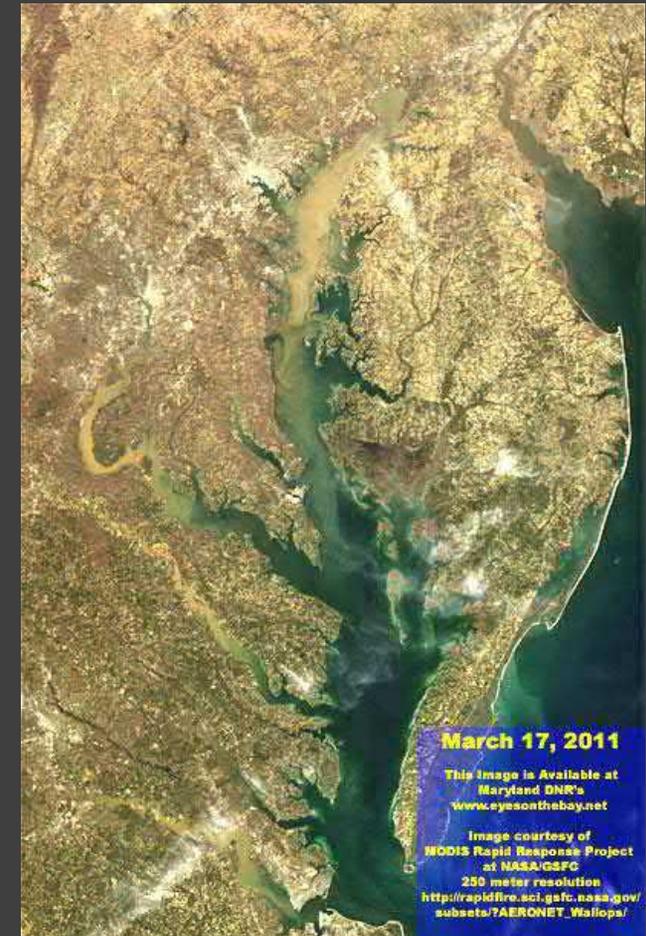
Why is this important?

- Impacts to drinking water supply
- Degradation of water quality
- Impacts to fish and wildlife
- Impacts to recreation/economy

Before a storm



After a storm





What is the VA doing to protect Maryland's waters?

If you would like more information, please contact VAMHCSGEMSPProgram@va.gov



MS4 Permitting Year 1 and 2



Impervious Area Restoration

Treat 20% of currently untreated impervious surfaces

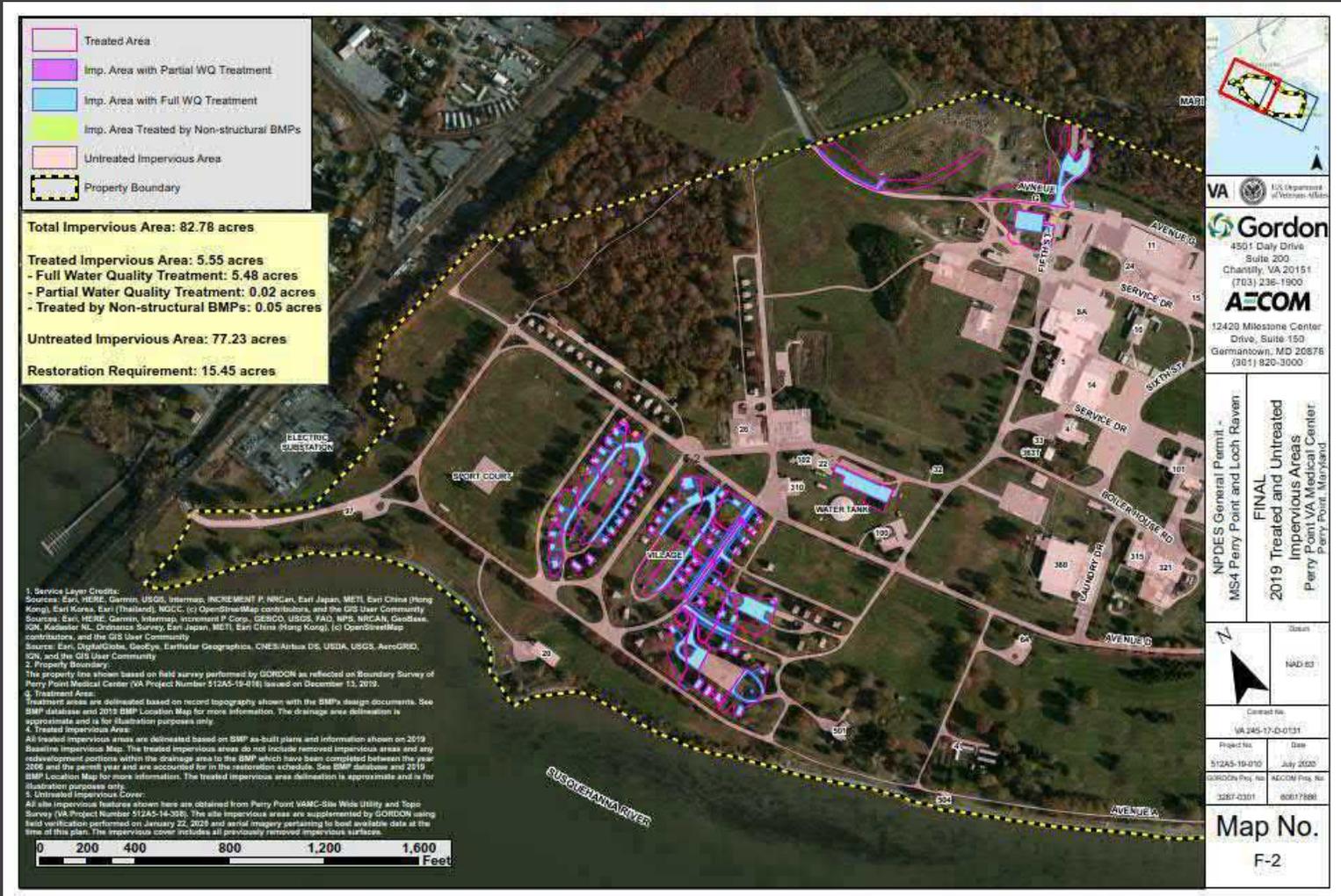
Minimum Control Measures

- Public/Personnel Education & Outreach
- Public/Personnel Involvement & Participation
- Illicit Discharge Detection and Elimination (IDDE)
- Construction Site Stormwater Runoff
- Post-Construction Stormwater Management
- Pollution Prevention/Good Housekeeping

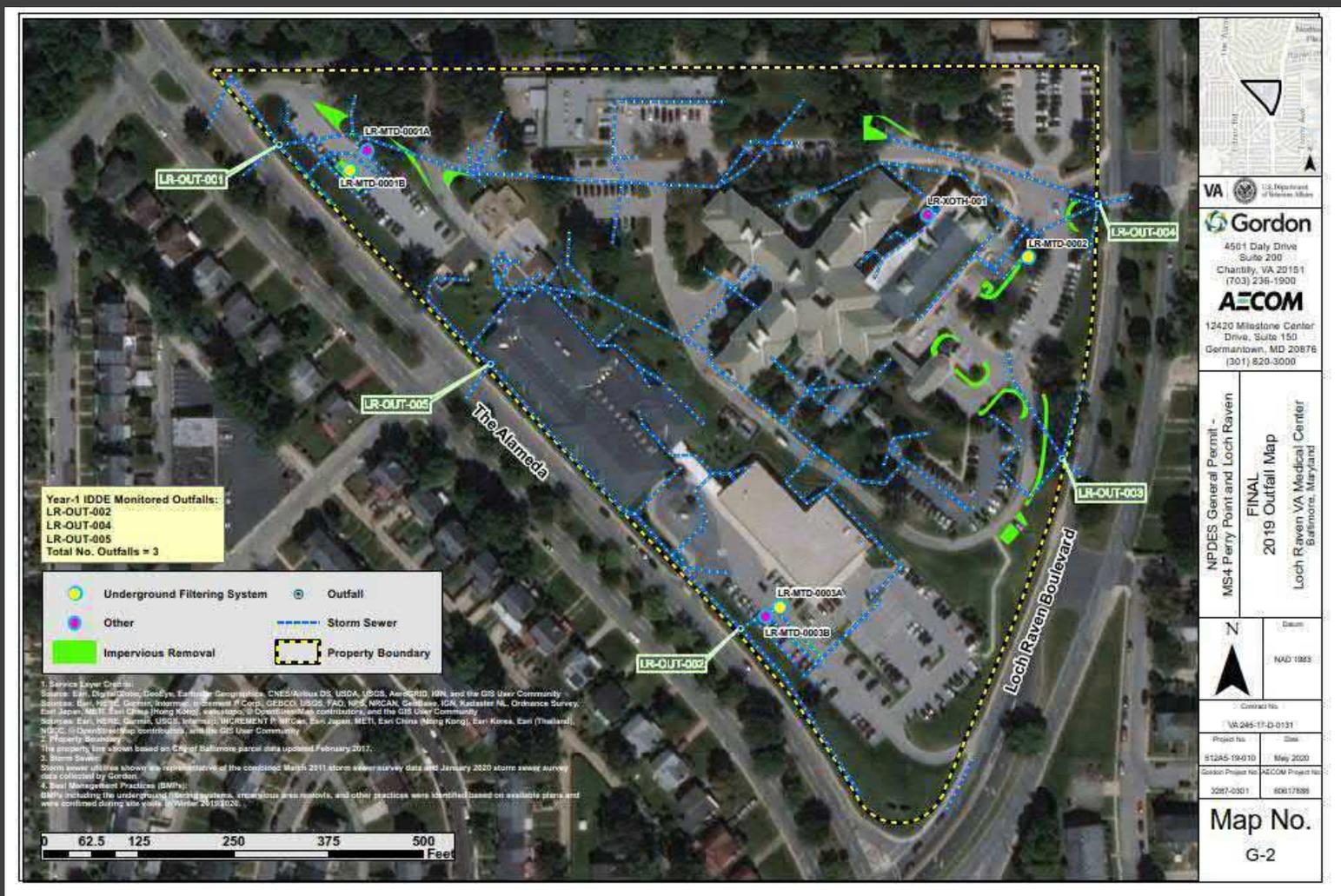
Delineate existing impervious surfaces



Delineate existing treated impervious surfaces



Identify site outfalls, storm sewer, and Best Management Practices (BMPs)



Illicit Discharge Detection and Elimination (IDDE) Testing

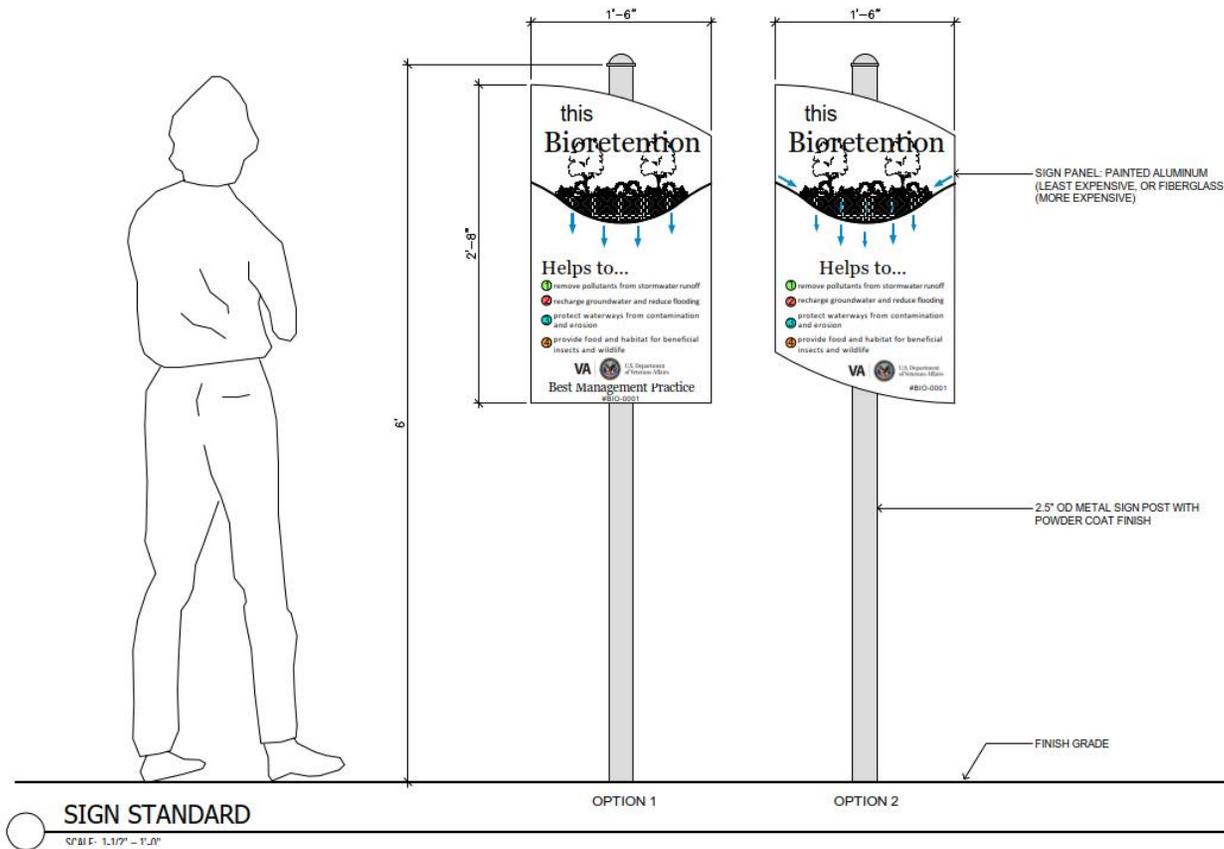


Dry weather screening to determine if there is a contaminated discharge



BMP
Maintenance

Proposed BMP Signage – Education and Information



VA MS4 - Update to the Town of Perryville

April 2020

Stormwater runoff can have a negative effect on our local streams and on the Chesapeake Bay, as it can carry pollutants from our roads, parking lots, and properties directly into the streams. To support our waters and help prevent this pollution, Perry Point VAMC has obtained coverage under the Maryland Department of the Environment (MDE) National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from State and Federal Small Municipal Separate Storm Sewer Systems (MS4). The intent of the permit is to manage stormwater discharges from the site in accordance with the Clean Water Act and improve water quality in Maryland's waters and in the Chesapeake Bay. Some of the focuses of the permit include the following: personnel education and outreach, public/personnel involvement and participation, illicit discharge detection and elimination, construction site stormwater runoff control, post construction stormwater management, pollution prevention, good housekeeping. The VA already has in place many measures to prevent pollutants from entering our waters. Under this permit, VAMC will also be implementing additional water quality improvement projects (also called stormwater management facilities) to help treat 20% of their existing developed land that has little or no stormwater management.

Some efforts to date include:

- Developed a database of existing stormwater management facilities
- Tested water at the site for illicit discharges. No illicit discharges have been observed to date.
- Inspected onsite stormwater management facilities
- Developed a comprehensive maintenance and inspection program for the facilities
- Developing a maintenance training program for VAMC Ground Crews
- Developing restoration goals and a schedule for implementing new water quality improvement projects
- Developing standard operating procedures for good housekeeping, pollution prevention practices, and prevention of illicit discharges to our waters
- Developing a stormwater education and outreach plan for VAMC personnel

The VA is making great progress towards the permit requirements, which will be implemented over a 5-year period. The VA submits annual reports to MDE to document their progress.



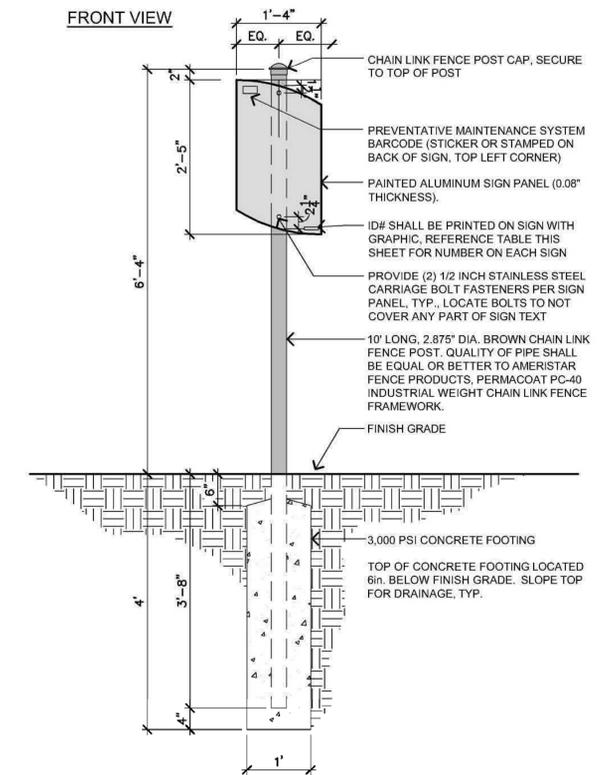
A Bioretention
SCALE: 1/4" = 1'-0"



B Bioswale
SCALE: 1/4" = 1'-0"



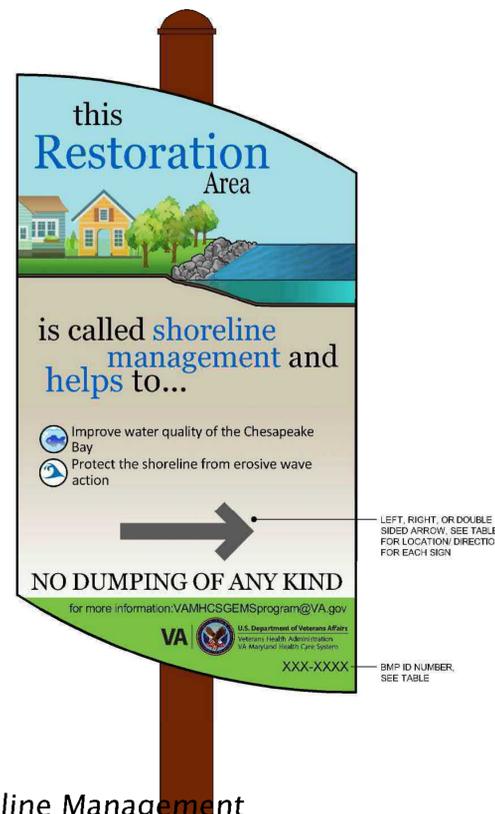
C Grass Swale
SCALE: 1/4" = 1'-0"



SIGN INSTALLATION
SCALE: 3/4" = 1'-0"



D Recharge Area
SCALE: 1/4" = 1'-0"

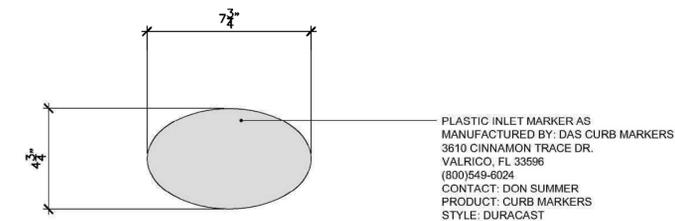


E Shoreline Management
SCALE: 1/4" = 1'-0"



BMP ID NUMBER, SEE TABLE

F Stormdrain Marker
SCALE: 1/4" = 1'-0"



NOTE:
1. PREPARE AREA DESIGNATED FOR MARKER INSTALLATION ON MANHOLE LID WITH WIRE BRUSH. WIPE CLEAN.
2. FASTEN TO MANHOLE LID WITH MANUFACTURER RECOMMENDED EPOXY OR ADHESIVE CAPABLE OF BONDING TO METAL.

MARKER INSTALLATION
SCALE: 1/4" = 1'-0"

BMP ID TABLE

BMP-ID	BMP Location	Signage Type	Quantity
PP-BIO-001	Building 11	A	1
PP-BIO-002	Southeast - Fifth Street & Avenue G	A	1
PP-BIO-003	Village - South of Second Street	A	1
PP-BIO-004	Village - North of Fourth Street	A	1
PP-BIO-005	Village - North of Fourth Street	A	1
PP-BIO-006	Village - North of Fourth Street	A	1
PP-BIO-007	Village - Fourth Street & Avenue C	A	1
PP-BIO-008	Village - Fourth Street & Avenue B	A	1
PP-BIO-009	Village - East of Avenue B	A	1
PP-BIO-010	Village - West of Avenue B	A	1
PP-BIO-011	Village - West of Avenue B	A	1
PP-BIO-012	Village - East of Avenue A	A	1
PP-BIO-013	Village - East of Avenue A	A	1
PP-BIO-014	Village - East of Avenue A	A	1
PP-BIO-015	Building 384 - East of Parking Lot	A	1
PP-BIO-016	Building 364 - South of Parking Lot	A	1
PP-BIO-017	Building 360	A	1
PP-BIO-018	Building 360	A	1
PP-BIO-019	Building 360	A	1
PP-BIO-020	Water Tank	A	1
Total			20

BMP-ID	BMP Location	Signage Type	Quantity
PP-BWS-001	Truck Entrance - West of Entrance	B	1
PP-BWS-002	Village - South of Second Street	B	1
PP-BWS-003	Village - South of Second Street	B	1
PP-BWS-004	Village - South of Second Street	B	1
PP-BWS-005	Village - North of Third Street	B	1
PP-BWS-006	Village - South of Third Street	B	1
PP-BWS-007	Village - North of Fourth Street	B	1
PP-BWS-008	Boat Ramp	B	1
Total			8
PP-GWS-001	Near Fifth Street and Avenue G	C	1
Total			1
PP-SHS-001	Segment 1	E	2*
PP-SHS-001	Segment 2	E	2*
PP-SHS-001	Segment 3	E	2*
PP-SHS-001	Segment 4	E	2*
PP-SHS-001	Segment 5	E	1
PP-SHS-001	Segment 6	E	1
Total			10

* 1 left facing and 1 right facing arrow

BMP-ID	BMP Location	Signage Type	Quantity
LR-MTD-0001	North Entrance Parking Lot	F	7
LR-MTD-0002	Community Living Center Parking Lot	F	6
LR-MTD-0003	South Parking Lot	F	7
Total			20
LR-XOTH-0001	Community Living Center Courtyard	D	1
Total			1

Stormwater Management Facility Signage Details

9.29.2020

JN 3287-0401

G:\PROJECTS\BUI\ENGIN\3287\0401\13-BOTH\2A - PUBLIC OUTREACH\BMP_SIGNAGE\PLANS\3287-0401-L-DT502.DWG 9/29/2020 2:40 PM

4501 Daly Drive
Chantilly, VA 20151
Phone: 703-263-1900
www.gordon.us.com

PROGRAMMING AND PLANNING
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
SURVEY AND MAPPING



* Do not reproduce without permission from Gordon

Draft GEMS Webpage Content

MS4 Program

To regulate and improve the quality of stormwater runoff, the Maryland Department of the Environment (MDE) issued the 2018 National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from State and Federal Small Municipal Storm Sewer Systems (MS4). The Veterans Affairs Maryland Health Care System (VAMHCS) is covered under this permit for both the Loch Raven and Perry Point Medical Centers (VAMCs). The Baltimore VAMC does not require coverage under this MS4 permit due to its location. However, the Baltimore VAMC is required to comply with similar stormwater permit requirements, such as not putting anything into a storm drain except for rainwater, under the MDE HT discharge permit.

The goal of the NPDES MS4 General Permit is to improve the quality of stormwater runoff being discharged from state and federal properties and to meet the federal Clean Water Act (CWA) requirements. The U.S. Environmental Protection Agency (EPA) established water quality goals in 2010 for the Chesapeake Bay Watershed and its tributaries through Total Maximum Daily Load (TMDL) requirements for reducing nitrogen, phosphorus, and sediment. This TMDL is a “pollution diet” for the Bay and applies to all the states within the Chesapeake Bay watershed including Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia, and the District of Columbia. A Watershed Implementation Plan (WIP) was developed by Maryland and lays out the approach the state will adopt to meet the Chesapeake Bay TMDL requirements.

The VAMHCS owns and operates storm drain systems at Loch Raven VAMC and Perry Point VAMC. The Loch Raven VAMC system is located within the Herring Run watershed and discharges to the City of Baltimore storm drain system, and ultimately to the Chesapeake Bay. The Perry Point VAMC system is located within the Lower Susquehanna River watershed and discharges directly to the Susquehanna River and Mill Creek, which flow to the Chesapeake Bay.

To implement the permit requirements, VAMHCS has conducted an Impervious Area Assessment. The Impervious Area Assessment involves reviewing all impervious, or paved, surfaces on both campuses and providing a plan to treat 20% of the currently untreated impervious area using MDE-approved best management practices (BMPs).

VAMHCS is also implementing the six Minimum Control Measures (MCMs) required by the permit. The MCMs are actions designed to reduce pollutant discharges to waterbodies in Maryland, including:

- Public or Personnel Education and Outreach
- Public or Personnel Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post Construction Stormwater Management
- Pollution Prevention and Good Housekeeping

The permit also requires that VAMHCS submit an Annual MS4 Progress Report to MDE. The Annual Progress Report contains information regarding MS4 activities that occurred and the progress VAMHCS

has made in meeting the Chesapeake Bay TMDL requirements during the previous reporting year. Comments and review of the VAMHCS Annual Progress Report are welcome and are part of the Public Involvement and Participation MCM. Anyone wishing to provide comments may contact the VAMHCS GEMS Program Manager.

[Place the following on the right hand side of the webpage]:

CONTACT

VAMHCSGEMSprogram@VA.gov

RESOURCES

- Provide link to MS4 permit
<https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/NPDES%20PII%20FINAL/State%20Fed%20PII%20permit%20final%2004202018.pdf>
- Provide link to Year 1 Progress Report
- Provide link to poster
- Provide link to Newsletter article

PUBLIC AND PERSONNEL EDUCATION RECORDS (PRIOR TO OCT. 2018)
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

PUBLIC AND PERSONNEL EDUCATION RECORDS						
Traning Title	Training Mode (In-person/Virtual/Other)	Topics Covered	Participants (Facilities/Engineering/Medical Staff/Public/Other)	Last Training Date	Frequency	Approx. Number of Participants
Dental Hazardous Waste/Spills Response Training - Perry Point Dental Office	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Dental and Dental lab-specific wastes--Hazardous Waste; Regulated Medical Waste; Sharps; OPIM waste; Universal Waste; Solid Waste; Recycling; Dental Amalgam Recycling; Dental Practices in hazardous waste and hazardous materials; labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; spill cleanup and emergency response; waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	PerryPoint Dental Staff (Dental Hygienists; Dental Assts; Dental Lab Technicians; Dentists)	2015-09-08	Annual	21
Dental Hazardous Waste/Spills Response Training - Baltimore Dental Office	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Dental and Dental lab-specific wastes--Hazardous Waste; Regulated Medical Waste; Sharps; OPIM waste; Universal Waste; Solid Waste; Recycling; Dental Amalgam Recycling; Dental Practices in hazardous waste and hazardous materials; labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; spill cleanup and emergency response; waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	Baltimore Dental Staff (Dental Hygienists; Dental Assts; Dental Lab Technicians; Dentists)	2015-09-09	Annual	24
Radiology Hazardous Waste/Spills Training	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Radiology-specific wastes--including waste barium; waste pharma; Hazardous Waste; Universal Waste; Solid Waste; Recycling; Radiology-specific waste management Practices: labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; spill cleanup and emergency response; Waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	VAMHCS Radiology Personnel (Radiologists; Radiology Assistants)	2016-06-01	Annual	8
Facilities and Engineering Service (FES) Hazardous Waste/Spills Training	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Facilities and Engineering-specific wastes--Hazardous Waste; Used and Waste Oil; Waste Oily Rags; Universal Waste--with examples of how UW becomes HW, storage of UW; Solid Waste; Recycling; FES Practices in hazardous waste and hazardous materials; labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; Emphasis on spill cleanup and emergency response; waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	PP/BT/LR Projects and M&O Managers; Construction Project Engineers (also Project Managers/CORs); Maintenance Shop Personnel including Foreman for each site: PP Water Treatment Plant; BT/LR/PP Plumbing Shops (Plumbers and Plumbing Assts); Carpentry Shops (Carpenters and Carpenter Assts); Electric Shops (Electricians and Electrician Assts); PP Grounds Shop (Master Gardener; Grounds Assts); VAMHCS Transportation Shop (Bus and Van Drivers; Administrative Personnel)	2016-12-15	Annual	54 (BT) 4 (LR) 49 (PP) 109 (TOTAL)

PUBLIC AND PERSONNEL EDUCATION RECORDS (PRIOR TO OCT. 2018)
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

PUBLIC AND PERSONNEL EDUCATION RECORDS						
Traning Title	Training Mode (In-person/Virtual/Other)	Topics Covered	Participants (Facilities/Engineering/Medical Staff/Public/Other)	Last Training Date	Frequency	Approx. Number of Participants
SPS Hazardous Waste/Spills Training	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Sterilization processing equipment-specific wastes--Hazardous Waste; Regulated Medical Waste; Sharps; OPIM waste; Universal Waste; Solid Waste; Recycling; SPS Practices in hazardous waste and hazardous materials; labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; spill cleanup and emergency response; waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	Sterilization Processing Service (SPS) Personnel: Manager and Assistants	2017-01-01	Annual	~10
PP Integrated Contingency/SPCC Plan	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	40 CFR 264.52; 40 CFR 112.7; Oil-Containing Equipment Inventory (Above and Underground Storage Tanks, Transformers; Containers); RCRA Hazardous Waste Satellite Accumulation Areas; RCRA Hazardous Waste Generator Status; Spills; Spill Response	Nutrition and Food Service (NFS) Personnel as well as Veteran's Canteen Service (VCS) personnel (Cooks; Dietiticians; Food Preparation Workers)	11//22/17	Annual	11
Supply Chain Management HAZMAT/Hazardous Waste/Spills Training	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Police Department-specific wastes--bullet casings and gun cleaning wastes--Hazardous Waste; Regulated Medical Waste; Sharps; OPIM waste; Universal Waste; Solid Waste; Recycling; Police Practices in hazardous waste and hazardous materials; labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; spill cleanup and emergency response; waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	BT and PP Warehouse personnel	2018-09-13	Annual	12

PUBLIC AND PERSONNEL EDUCATION RECORDS (OCT. 2018 TO OCT.2020)
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

PUBLIC AND PERSONNEL EDUCATION RECORDS						
Traning Title	Training Mode (In-person/ Virtual/Other)	Topics Covered	Participants (Facilities/Engineering/ Medical Staff/Public/Other)	Last Training Date	Frequency	Approx. Number of Participants
Universal Waste	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	Universal waste training for services with universal waste only - 40 CFR 273.36	BioMedical Engineering Staff	2018-02-01	As-Needed	5
Chemotherapeutics Waste and Spills	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Pharmacy Chemo and hazardous drug-compounding-specific wastes and PPE; chemo and NIOSH hazardous drug waste; chemo-contaminated patient waste excreta; NIOSH Hazardous Drugs per USP 800;Hazardous Waste; Oncology, EMS; Nursing and Clinical PPE Practices; labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; Response to chemo drug exposure; spill cleanup and emergency response; VAMHCS Waste disposal Chart	Staff: EMS; Oncology; Chemo Compounding Pharmacy Personnel (EMS (Housekeeping) personnel who would respond to a cleanup involving chemotherapeutics; Oncology Nurses and Doctors; Chemo Compounding Pharmacists and Chemo Compounding Pharmacy personnel)	2019-01-01	Annual	20-05
Research & Development (R&D) Hazardous Waste/Spills Response Training	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including R&D-specific wastes--Hazardous Waste; Regulated Medical Waste; Sharps; OPIM waste; Universal Waste; Solid Waste; Recycling; Laboratory Practices in hazardous waste and hazardous materials; labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; spill cleanup and emergency response; waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	R&D Personnel (Scientists; researchers; lab assistants)	2019-01-08	Annual	76
GEMS Awareness	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	ISO 14001: 2015, 7.2 and 7.3, Competence Training and Awareness: Provides a description/overview of GEMS: Green Environmental Management System; Aspects/Impacts; Why and How VAMHCS impacts the environment; VAMHCS significant impacts to the environment; waste classifications; No drain disposal; VAMHCS Recycling and Composting programs; No Drain Disposal-	Personnel and GEMS Committee Members	2019-04-10	Annual	45

PUBLIC AND PERSONNEL EDUCATION RECORDS (OCT. 2018 TO OCT.2020)
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

PUBLIC AND PERSONNEL EDUCATION RECORDS						
Traning Title	Training Mode (In-person/ Virtual/Other)	Topics Covered	Participants (Facilities/Engineering/ Medical Staff/Public/Other)	Last Training Date	Frequency	Approx. Number of Participants
How to Inspect Aboveground Storage Tanks	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	40 CFR 112.7 and Steel Tank Institute (STI) SP001; Step by step training on how to perform an aboveground tank inspection per the Perry Point Integrated Contingency Plan/STI SP001.	Facilities and Engineering Projects and Maintenance and Operations (M&O) personnel (Maintenance Shop Personnel including Foreman for each site: PP Water Treatment Plant; BT/LR/PP Plumbing Shops (Plumbers and Plumbing Assts); Carpentry Shops (Carpenters and Carpenter Assts); Electric Shops (Electricians and Electrician Assts); PP Grounds Shop (Master Gardener; Grounds Assts))	2019-04-18	As-Needed, or when new tanks are added (Current tanks included in the ICP Training)	49
PP Integrated Contingency/SPCC Plan	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	40 CFR 264.52; 40 CFR 112.7; Oil-Containing Equipment Inventory (Above and Underground Storage Tanks, Transformers; Containers); RCRA Hazardous Waste Satellite Accumulation Areas; RCRA Hazardous Waste Generator Status; Spills; Spill Response	Facilities and Engineering Projects and Maintenance and Operations (M&O) personnel (Maintenance Shop Personnel including Foreman for each site: PP Water Treatment Plant; BT/LR/PP Plumbing Shops (Plumbers and Plumbing Assts); Carpentry Shops (Carpenters and Carpenter Assts); Electric Shops (Electricians and Electrician Assts); PP Grounds Shop (Master Gardener; Grounds Assts))	2019-04-18	Annual	49
Path & Lab Hazardous Waste/Spills Response Training	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Pathology and Lab-specific wastes-- Hazardous Waste; Regulated Medical Waste; Sharps; OPIM waste; Universal Waste; Solid Waste; Recycling; Laboratory Practices in hazardous waste and hazardous materials; labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; spill cleanup and emergency response; waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	Pathology and Laboratory personnel from all Clinical labs (Pathology and Laboratory personnel from all Clinical labs: Hematology; Chemistry; Microbiology; Histology; Cytology; Morgue)	2019-06-01	Annual	25

PUBLIC AND PERSONNEL EDUCATION RECORDS (OCT. 2018 TO OCT.2020)
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

PUBLIC AND PERSONNEL EDUCATION RECORDS						
Traning Title	Training Mode (In-person/ Virtual/Other)	Topics Covered	Participants (Facilities/Engineering/ Medical Staff/Public/Other)	Last Training Date	Frequency	Approx. Number of Participants
MDE UST Operator Level C Training	In-person (GEMS created binder and read and sign forms along with MDE form required)	Site-Specific UST required information for VAMHCS site UST operators per COMAR 26.10.02-11 (provided by Certified UST Operator Level AB)	Facilities & Engineering M&O Staff who manage the UST	2019-09-01	Immediately after hire or when job duties change to include UST operation	12
LR Integrated Contingency/SPCC Plan	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	40 CFR 264.52; 40 CFR 112.7; Oil-Containing Equipment Inventory (Above and Underground Storage Tanks, Transformers; Containers); RCRA Hazardous Waste Satellite Accumulation Areas; RCRA Hazardous Waste Generator Status; Spills; Spill Response	Facilities and Engineering Projects and Maintenance and Operations (M&O) personnel (Maintenance Shop Personnel including Foreman for each site: PP Water Treatment Plant; BT/LR/PP Plumbing Shops (Plumbers and Plumbing Assts); Carpentry Shops (Carpenters and Carpenter Assts); Electric Shops (Electricians and Electrician Assts); PP Grounds Shop (Master Gardener; Grounds Assts))	2019-11-01	Annual (LR Attends virtually to the In-person BT training)	4
Balto Integrated Contingency/SPCC Plan	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	40 CFR 264.52; 40 CFR 112.7; Oil-Containing Equipment Inventory (Above and Underground Storage Tanks, Transformers; Containers); RCRA Hazardous Waste Satellite Accumulation Areas; RCRA Hazardous Waste Generator Status; Spills; Spill Response	Facilities and Engineering Projects and Maintenance and Operations (M&O) personnel; Nutrition and Food Service (NFS) Personnel as well as Veteran's Canteen Service (VCS) personnel (See above for Facilities and Engineering Service-specific positions; Cooks; Dietiticians; Food Preparation Workers)	2019-11-01	Annual	54

PUBLIC AND PERSONNEL EDUCATION RECORDS (OCT. 2018 TO OCT.2020)
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

PUBLIC AND PERSONNEL EDUCATION RECORDS						
Traning Title	Training Mode (In-person/ Virtual/Other)	Topics Covered	Participants (Facilities/Engineering/ Medical Staff/Public/Other)	Last Training Date	Frequency	Approx. Number of Participants
Police Hazardous Waste/Spills Training	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Police Department-specific wastes--bullet casings and gun cleaning wastes--Hazardous Waste; Regulated Medical Waste; Sharps; OPIM waste; Universal Waste; Solid Waste; Recycling; Police Practices in hazardous waste and hazardous materials; labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; spill cleanup and emergency response; waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	PP/BT/LR Police Department Personnel (Police Chief; Deputies; Detectives; Lieutenants; Captains; administrative personnel)	2019-11-07	Annual	12
Pharmacy Hazardous Waste/Spills Response Training	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16 (including Pharmacy-specific wastes--including chemo waste; waste pharma; NIOSH Hazardous Drugs per USP 800;Hazardous Waste; Universal Waste; Solid Waste; Recycling; Pharmacy-specific waste management Practices: labeling and storing hazardous wastes (satellite accumulation areas); chemical inventories; hazardous waste Disposal; No Drain Disposal; spill cleanup and emergency response; Pharmacy-specific and VAMHCS General waste disposal charts; VAMHCS hazardous materials and hazardous waste management plan	VAMHCS Pharmacy employees (Balto Inpatient; Balto Outpatient; Balto Compounding; Perry Pt Inpatient and Outpatient--one pharmacy) (Pharmacists; Pharmacy technicians; compounding personnel)	2020-02-01	Annual	~90

NEPA Training for Construction Projects CORs	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	Outlines the purpose of NEPA and Environmental Planning Process for Projects Managers. "NEPA Checklist" Process Identifies environmental and health risks Identifies Permits, Legal Requirements, and Project Waste Management/Recycling to include in your project contracts Communication Tool for Projects (Engineering, Maintenance, or Other) and VAMHCS Environmental, Health and Safety/GEMS Based on Council on Environmental Quality (CEQ) "A Citizen's Guide to NEPA" [Dec 2007] http://ceq.hss.doe.gov/nepa/Citizens_Guide_Dec07.pdf And on VA Office of Construction and Facilities Management (OOCFM), NEPA Interim Guidance for Projects [Sept 2010]: http://www.cfm.va.gov/til/etc/NEPAGuidance.pdf	PP/BT/LR Projects Managers (at time of hire and refreshers as needed) as well as the VAMHCS Construction Safety Committee; and VAMHCS GEMS Committee (Construction Project Engineers (Project Managers/CORs); VAMHCS Construction Safety Committee personnel (Includes Projects; Infection Control; Industrial Hygiene; and Safety Personnel) and VAMHCS GEMS Committee personnel (Cross-Functional committee))	2020-06-09	As-needed (PP/BT/LR Projects Managers at time of hire)	~50
--	---	---	--	------------	---	-----

PUBLIC AND PERSONNEL EDUCATION RECORDS (OCT. 2018 TO OCT.2020)
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

PUBLIC AND PERSONNEL EDUCATION RECORDS						
Traning Title	Training Mode (In-person/ Virtual/Other)	Topics Covered	Participants (Facilities/Engineering/ Medical Staff/Public/Other)	Last Training Date	Frequency	Approx. Number of Participants
MDA Pesticide Applicator Certification	Not In-house; Provided Per MD Dept of Agriculture	Pesticide Applicator Certification per 40 CFR 171.4	Facilities and Engineering Grounds and EMS (Pesticide Applicator)	2020-07-01	Annual	5
Nursing and Clinical Waste Management	Virtual (In-Person available upon request)	EPA Hazardous Waste Management per 40 CFR 262.34(a)(4) and 40 CFR 265.16--including chemo waste; waste pharma; NIOSH Hazardous Drugs per USP 800; Regulated Medical Waste; Sharps; OPIM waste; Universal Waste; Solid Waste; Recycling; PPE; Disposal; No Drain Disposal; spill cleanup and emergency response; waste disposal chart; VAMHCS hazardous materials and hazardous waste management plan	Staff - Medical (Clinical and Nursing) throughout Baltimore/Loch Raven/Perry Point and Six CBOCs: 46 Services--see separate tabs (only includes nurse mgrs on tabs--personnel assigned by Nursing and Clinical Mgrs - Staff can rotate between or be moved to any of the campuses and/or CBOCs (Nurses, Practical Nurses, Nursing Assts., Medical Technologists; Medical Assistants; Health Assistants; Health Technologists; Doctors; Radiologists; Oncology Nurses)	2020-09-10	Annual	800-1000
Universal Waste	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	Universal waste training for services with universal waste only - 40 CFR 273.36	Staff: IT (IT/Computer Specialists)	2020-09-01	As-Needed	5

GEMS Awareness	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	ISO 14001: 2015, 7.2 and 7.3, Competence Training and Awareness: Provides a description/overview of GEMS: Green Environmental Management System; Aspects/Impacts; Why and How VAMHCS impacts the environment; VAMHCS significant impacts to the environment; waste classifications; No drain disposal; VAMHCS Recycling and Composting programs; No Drain Disposal-	All New Employee Orientation (NEO) (All possible Clinical/Medical/Nursing and Non-Clinical personnel (varies each session, which normally--under NON-COVID 19 circumstances--occurs every two weeks))	2020-03-01	As-needed (New employee hier)	~200
----------------	--	---	---	------------	-------------------------------	------

PUBLIC AND PERSONNEL EDUCATION RECORDS (OCT. 2018 TO OCT.2020)
DEPARTMENT OF VETERANS AFFAIRS
VAMC PERRY POINT AND LOCH RAVEN
GENERAL DISCHARGE PERMIT NO. 13-SF-5501

PUBLIC AND PERSONNEL EDUCATION RECORDS						
Traning Title	Training Mode (In-person/ Virtual/Other)	Topics Covered	Participants (Facilities/Engineering/ Medical Staff/Public/Other)	Last Training Date	Frequency	Approx. Number of Participants
PP Integrated Contingency/SPCC Plan	In-person (Transitioning to Virtual Training; In-person Always Available Upon Request)	40 CFR 264.52; 40 CFR 112.7; Oil-Containing Equipment Inventory (Above and Underground Storage Tanks, Transformers; Containers); RCRA Hazardous Waste Satellite Accumulation Areas; RCRA Hazardous Waste Generator Status; Spills; Spill Response	PP Fire Department	2020-02-01	Annual (PP Fire Dept more frequently)	18

MEETING AGENDA

09/15/2020

Project Title:	VA MS4
Project Number:	512A5-19-010, 3287-0401
Meeting Location:	Loch Raven VAMC
Meeting Date:	09/15/2020
Attendees:	VA: Jen Dallaire, Dan Myslinksi, Rich Maichle, LR shops team GORDON: Kelsey Ryan, MacKenzie Tidwell AECOM: Melissa Hess, Claire Weinrib

BMP Maintenance and Inspection Training Program – Loch Raven

1. Introductions (5 minutes)
2. Purpose and goals of training program (10 minutes)
 - i) NPDES MS4 permit requirement
 - ii) Triennial Inspection
 - iii) Monthly, Seasonal, and Annual Maintenance
3. Facility Maintenance and Inspection, Review checklists (15 minutes per facility)
 - i) General site maintenance
 - ii) BaySaver Bayfilter (MTD-0002)
 - iii) Contech StormFilter (MTD-0001 and MTD-0003)
 - iv) Recharge Bed (XOTH-0001)
4. Responsibilities and Record Keeping (10 minutes)
 - i) VA owned facilities
 - ii) Where they will be stored onsite
5. Q & A (5 minutes)



MEETING AGENDA

07/09/2020

Project Title: VA MS4
Project Number: 512A5-19-010, 3287-0301
Meeting Location: Perry Point VAMC
Meeting Date: 07/09/2020
Attendees: VA: Jen Dallaire, Dan Myslinksi, Shops team, Villages team
GORDON: Kelsey Ryan, MacKenzie Tidwell
AECOM: Melissa Hess, Claire Weinrib

BMP Maintenance and Inspection Training Program – Perry Point

1. Introductions (5 minutes)
2. Purpose and goals of training program (10 minutes)
 - i) NPDES MS4 permit requirement
 - ii) Triennial Inspection
 - iii) Monthly, Seasonal, and Annual Maintenance
3. Facility Maintenance and Inspection, Review checklists (15 minutes per facility)
 - i) Micro-bioretenion & bioretention
 - (1) Villages – 12 (BIO-003 to 014)
 - (2) VA – 8 (BIO-001 to 002, 015 to 020)
 - ii) Grass swale
 - (1) VA – 1 (GWS-001)
 - iii) Bio-swale
 - (1) Villages – 6 (BWS-002 to 007)
 - (2) VA – 2 (BWS-001, 008)
 - iv) Shoreline restoration
 - (1) VA – 1 (SHS-001)
4. Responsibilities and Record Keeping (10 minutes)
 - i) VA owned facilities
 - ii) Leased facilities
 - iii) Where they will be stored onsite
5. Q & A (5 minutes)

g:\project\sbu\engin\3287\0301\1-perry point\data\1e - bmp inspection and maintenance program\year 1\2020-07-09 inspection and maintenance program training session.docx



H – MCM #2 – PUBLIC/PERSONNEL INVOLVEMENT AND PARTICIPATION

- Involvement and participation materials



Happy Earth Day 2019

Joanna Oliveri and
Jen Dallaire, VAMHCS
GEMS Coordinators

Happy Earth Day 2019- Baltimore VAMC!



Happy Earth Day 2019– Perry Point VAMC! Horticulture, Composting, Recycling and GEMS Initiatives



Planting Trees



Trash Washed up on Perry Point Shoreline – Tires, Plastics



Cleaning Up Perry Point VAMC's Shoreline



More Photos—Cleaning up Perry Point VAMC's Shoreline



Tires, Plastics, Metals, even a Television Frame!



Special Thanks to....

- VAMHCS Safety
- VCS Perry Point
- VCS Baltimore
- EMS
- EMS Contractor,
ASI Waste
- Ellen Jones,
Horticulture
Therapy
- Perry Point
Recreation Therapy
- All of the PP
Shoreline Volunteers
(see next slide All of
the PP Shoreline
Volunteers (see next
slide))

Thank you to our Perry Point VAMC Shoreline Cleanup VAMHCS Volunteers!

This included employees from:

- VAMHCS Safety
- VAMHCS Facilities and Engineering Services
- Interior Design/Space Planning
- Nutrition and Food Services
- Nursing Services
- Contracting
- EOC
- Infection Control
- EMS Contractor, ASI Waste



VAMHCS GEMS Program

Stewardship + Environmental Compliance = Healthy Environment for Patients, Visitors, and Staff



Perry Point Shoreline Since 2016: 3 Cleanups, 80 Volunteers, 6 hours, 9 Truckloads



(Top) Mr. Frederick Soetje, VAMHCS Associate Director of Operations and GEMS Committee Chairperson



(Right) Ms. Susan Persing, VAMHCS Safety Department



Top: Loch Raven VAMC Nursing Professionals Help Load Waste Tires from the Perry Point Shoreline

Why does the VAMHCS Impact the Environment?

- To provide a safe, comfortable patient environment



+



- To Practice Medicine



+



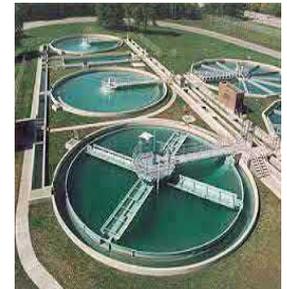
+



- To Prevent Disease and infection
(e.g., Legionella)



+



Regulated Medical Waste Improvements – Thank You Infection Control!



- Keep Red Bag near in case of emergency
- Clear Bag in Red Bag Container first, switch When procedure starts
- One Centrally Located RMW Container
- Dispose of more than 20cc of Fluid
- Refer to VAMHCS Waste Disposal Chart
- Use Waste Meds Back to Pharmacy Drawer for Pills



Modern
Healthcare**TRANSFORMATION HUB**

SUBSCRIBE

MY ACCOUNT
Transformation Hub
is sponsored by:

LOGIN

**How will Cedars-Sinai train its 146 medical residents to care for patients during a pandemic?**

MENU ≡

Home > Construction & Design

SPONSORED CONTENT PROVIDED BY THE DAVEY TREE EXPERT COMPANY ⓘ

February 28, 2020 11:30 AM

These Tree Campus Healthcare facilities are using trees to improve community health



TWEET



SHARE



SHARE



EMAIL

Tree canopy is a critical component of community health infrastructure – but urban tree cover is shrinking, and its health benefits are not often equitably distributed. The Tree Campus Healthcare program, first announced in 2019, recognizes health institutions that make a mission-aligned impact on community wellness through tree education, investment, and community engagement. The Arbor Day Foundation announced the inaugural class of sixteen Tree Campus Healthcare facilities, which earned recognition by fulfilling five program standards in 2019. Interested facilities may apply for 2020 recognition in Fall 2020 at www.TreeCampusHealthcare.org.

View the sixteen beautiful campuses in the photo gallery below, and download our program overview to read more about the importance of trees to community health and learn how your organization can be recognized as a Tree Campus healthcare facility.



4/16

Perry Point Veterans Affairs Medical Center
Perry Point, MD

Led by the Green Environmental Management System team, Perry Point VA Medical Center's Earth Day celebration provided an opportunity for em plant trees on campus and to invite the bordering town of Perryville to plant 23 trees along the campus/neighborhood border, bridging a gap in the t between the two properties, which share hiking trails. Program materials from the Arbor Day Foundation distributed at the event lent an educational



[Download "Tree Campus Healthcare Program Overview"](#)

Sponsored By:



Tree Campus Healthcare is an Arbor Day Foundation program with support from professional partner, [The Davey Tree Expert Company](#). Additional program collaborators are [Practice Greenhealth](#), the [Professional Grounds Management Society](#), and the [USDA Forest Service](#).



Next Up

Podcast

LISTEN NOW



GET FREE NEWSLETTERS

Sign up for free newsletters and alerts to receive breaking news and in-depth coverage of healthcare events and t they happen, right to your inbox.

Email Address

SI

SUBSCRIBE TODAY

The weekly magazine, websites, research and databases provide a powerful and all-encompassing industry presence. We help you make informed business decisions and lead your organizations to success.

SUBSCRIBE

CONNECT WITH US



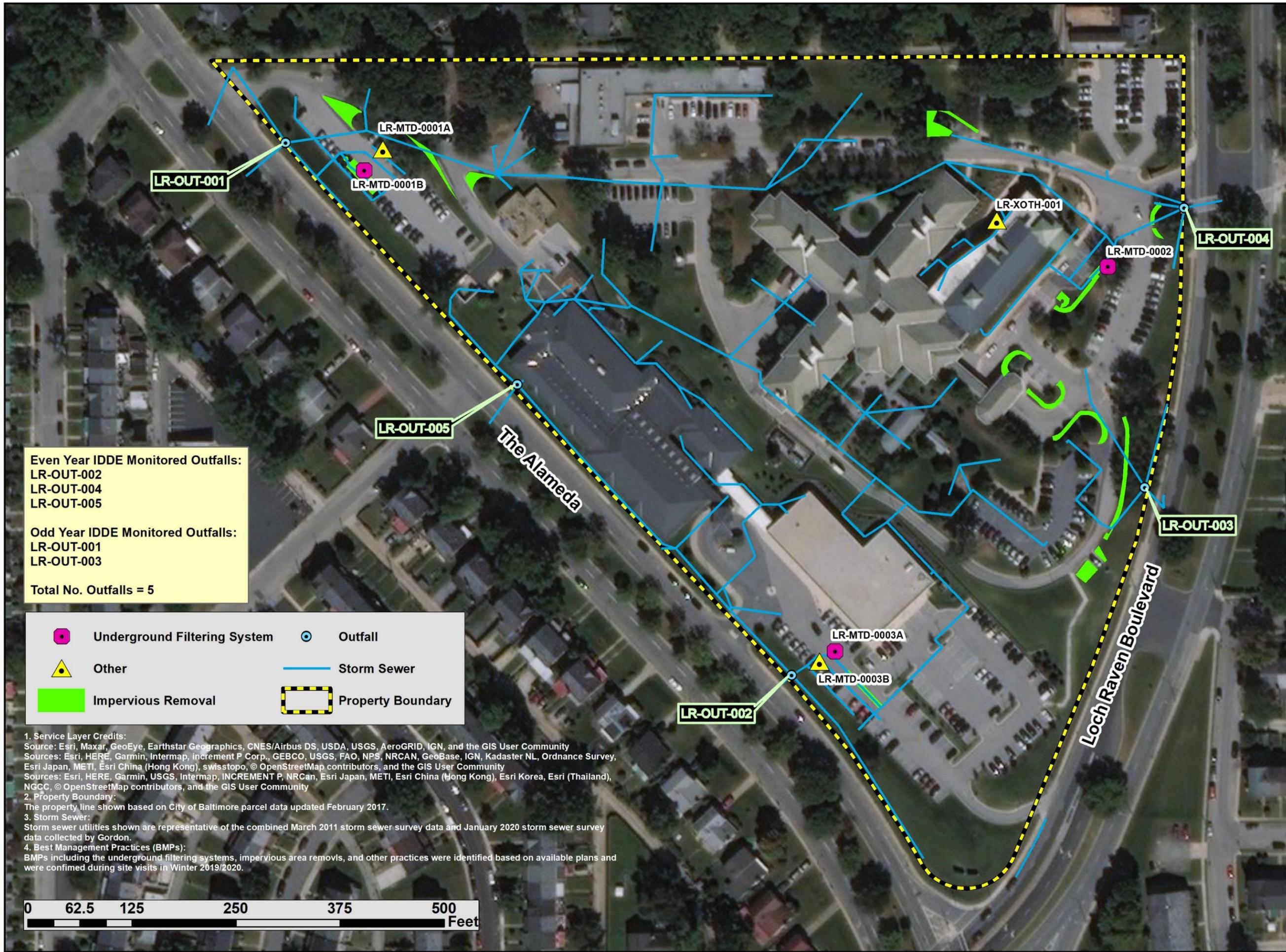
Copyright © 1996-2020. Crain Communications, Inc. All Rights Reserved.

Workplace of the Future
Conference



I – MCM #3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

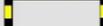
- BMP and outfall maps
 - MS4 policy
- IDDE guidance document
- Year 1 and Year 2 IDDE results



Even Year IDDE Monitored Outfalls:
 LR-OUT-002
 LR-OUT-004
 LR-OUT-005

Odd Year IDDE Monitored Outfalls:
 LR-OUT-001
 LR-OUT-003

Total No. Outfalls = 5

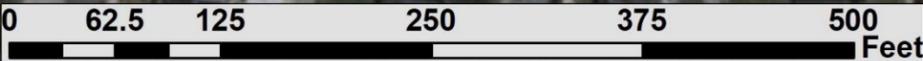
 Underground Filtering System	 Outfall
 Other	 Storm Sewer
 Impervious Removal	 Property Boundary

1. Service Layer Credits:
 Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

2. Property Boundary:
 The property line shown based on City of Baltimore parcel data updated February 2017.

3. Storm Sewer:
 Storm sewer utilities shown are representative of the combined March 2011 storm sewer survey data and January 2020 storm sewer survey data collected by Gordon.

4. Best Management Practices (BMPs):
 BMPs including the underground filtering systems, impervious area removals, and other practices were identified based on available plans and were confirmed during site visits in Winter 2019/2020.



	
 U.S. Department of Veterans Affairs	
 <p>4501 Daly Drive Suite 200 Chantilly, VA 20151 (703) 236-1900</p>	
 <p>12420 Milestone Center Drive, Suite 150 Germantown, MD 20876 (301) 820-3000</p>	
NPDES General Permit - MS4 Perry Point and Loch Raven	FINAL 2019 Outfall Map
Loch Raven VA Medical Center Baltimore, Maryland	
	Datum NAD 1983
Contract No. VA 245-17-D-0131	
Project No. 512A5-19-010	Date October 2020
Gordon Project No. 3287-0301	AECOM Project No. 60617886
<h1>Map No.</h1> <p>I - 1</p>	

Best Management Practices (BMPs)

- ★ Microbioretention
- Bio-swale
- ◆ Grass swale
- ⊕ Non-Rooftop Disconnect
- ▬ Shoreline Management
- Impervious Removal
- Outfall
- Storm Sewer
- ▭ Property Boundary

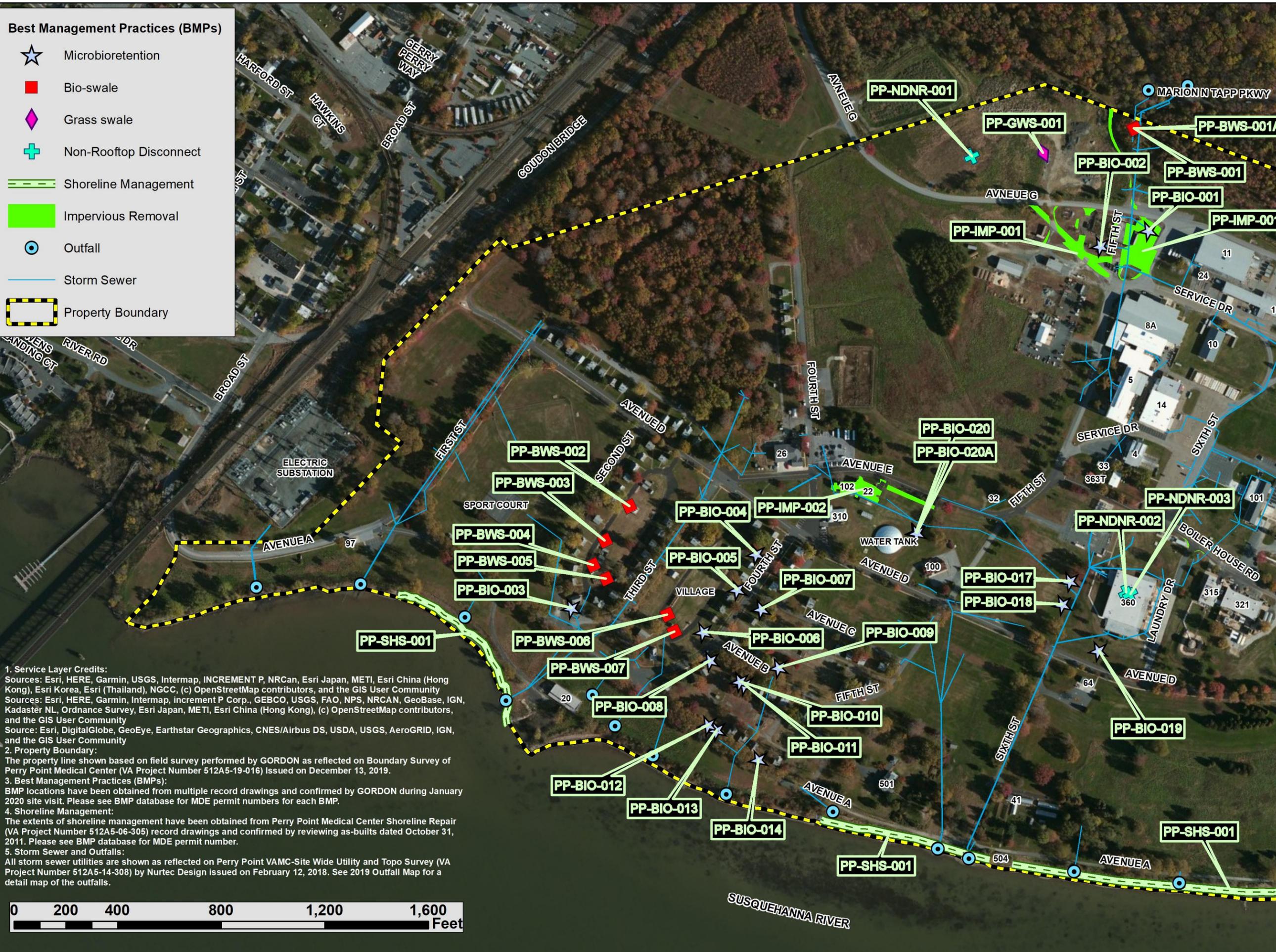
1. Service Layer Credits:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

2. Property Boundary:
The property line shown based on field survey performed by GORDON as reflected on Boundary Survey of Perry Point Medical Center (VA Project Number 512A5-19-016) Issued on December 13, 2019.

3. Best Management Practices (BMPs):
BMP locations have been obtained from multiple record drawings and confirmed by GORDON during January 2020 site visit. Please see BMP database for MDE permit numbers for each BMP.

4. Shoreline Management:
The extents of shoreline management have been obtained from Perry Point Medical Center Shoreline Repair (VA Project Number 512A5-06-305) record drawings and confirmed by reviewing as-builts dated October 31, 2011. Please see BMP database for MDE permit number.

5. Storm Sewer and Outfalls:
All storm sewer utilities are shown as reflected on Perry Point VAMC-Site Wide Utility and Topo Survey (VA Project Number 512A5-14-308) by Nurtec Design issued on February 12, 2018. See 2019 Outfall Map for a detail map of the outfalls.



VA U.S. Department of Veterans Affairs

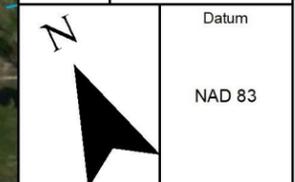
Gordon
4501 Daly Drive
Suite 200
Chantilly, VA 20151
(703) 236-1900

AECOM
12420 Milestone Center
Drive, Suite 150
Germantown, MD 20876
(301) 820-3000

NPDES General Permit -
MS4 Perry Point and Loch Raven

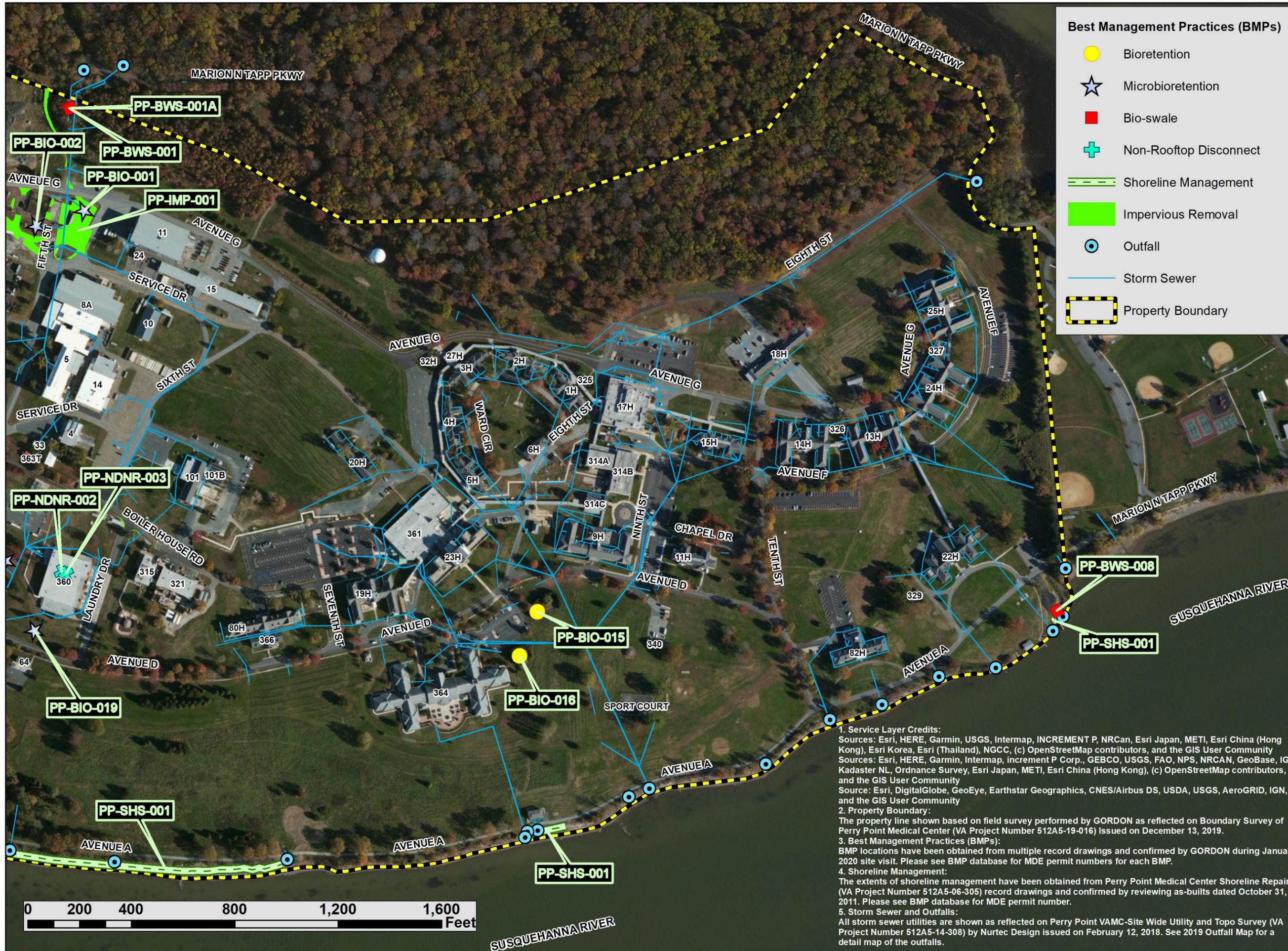
FINAL
2019 BMP Location Map

Perry Point VA Medical Center
Perry Point, Maryland



Contract No. VA 245-17-D-0131	
Project No. 512A5-19-010	Date July 2020
GORDON Proj. No. 3287-0301	AECOM Proj. No. 60617886

Map No.
1 - 2



Best Management Practices (BMPs)

- Bioretention
- ★ Microbioretention
- Bio-swale
- + Non-Rooftop Disconnect
- Shoreline Management
- Impervious Removal
- Outfall
- Storm Sewer
- Property Boundary



VA U.S. Department of Veterans Affairs

Gordon
 4501 Daly Drive
 Suite 200
 Chantilly, VA 20151
 (703) 236-1900

AECOM
 12420 Milestone Center Drive, Suite 150
 Germantown, MD 20876
 (301) 820-3000

NPDES General Permit -
 MS4 Perry Point and Loch Raven

FINAL
 2019 BMP Location Map

Perry Point VA Medical Center
 Perry Point, Maryland

N

Datum
 NAD 83

Contract No. VA 245-17-D-0131	
Project No. 512A5-19-010	Date July 2020
GORDON Proj. No. 3287-0301	AECOM Proj. No. 60617886

Map No.
 I - 3

1. Service Layer Credits:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

2. Property Boundary:
 The property line shown based on field survey performed by GORDON as reflected on Boundary Survey of Perry Point Medical Center (VA Project Number 512A5-19-016) Issued on December 13, 2019.

3. Best Management Practices (BMPs):
 BMP locations have been obtained from multiple record drawings and confirmed by GORDON during January 2020 site visit. Please see BMP database for MDE permit numbers for each BMP.

4. Shoreline Management:
 The extents of shoreline management have been obtained from Perry Point Medical Center Shoreline Repair (VA Project Number 512A5-06-305) record drawings and confirmed by reviewing as-builts dated October 31, 2011. Please see BMP database for MDE permit number.

5. Storm Sewer and Outfalls:
 All storm sewer utilities are shown as reflected on Perry Point VAMC-Site Wide Utility and Topo Survey (VA Project Number 512A5-14-308) by Nurtec Design issued on February 12, 2018. See 2019 Outfall Map for a detail map of the outfalls.

-  Storm Sewer
-  Outfall
-  Best Management Practices (BMPs)
-  Impervious Removal
-  Shoreline Management
-  Property Boundary

Even Year IDDE Monitored Outfalls:

- PP-OUT-01
- PP-OUT-03
- PP-OUT-05*
- PP-OUT-07
- PP-OUT-09*
- PP-OUT-12
- PP-OUT-13
- PP-OUT-15
- PP-OUT-17*
- PP-OUT-18
- PP-OUT-20
- PP-OUT-22
- PP-OUT-23
- PP-OUT-26
- PP-OUT-28*

Total No. Outfalls = 15
 *Outfall not found or inaccessible.
 Test upstream manhole.

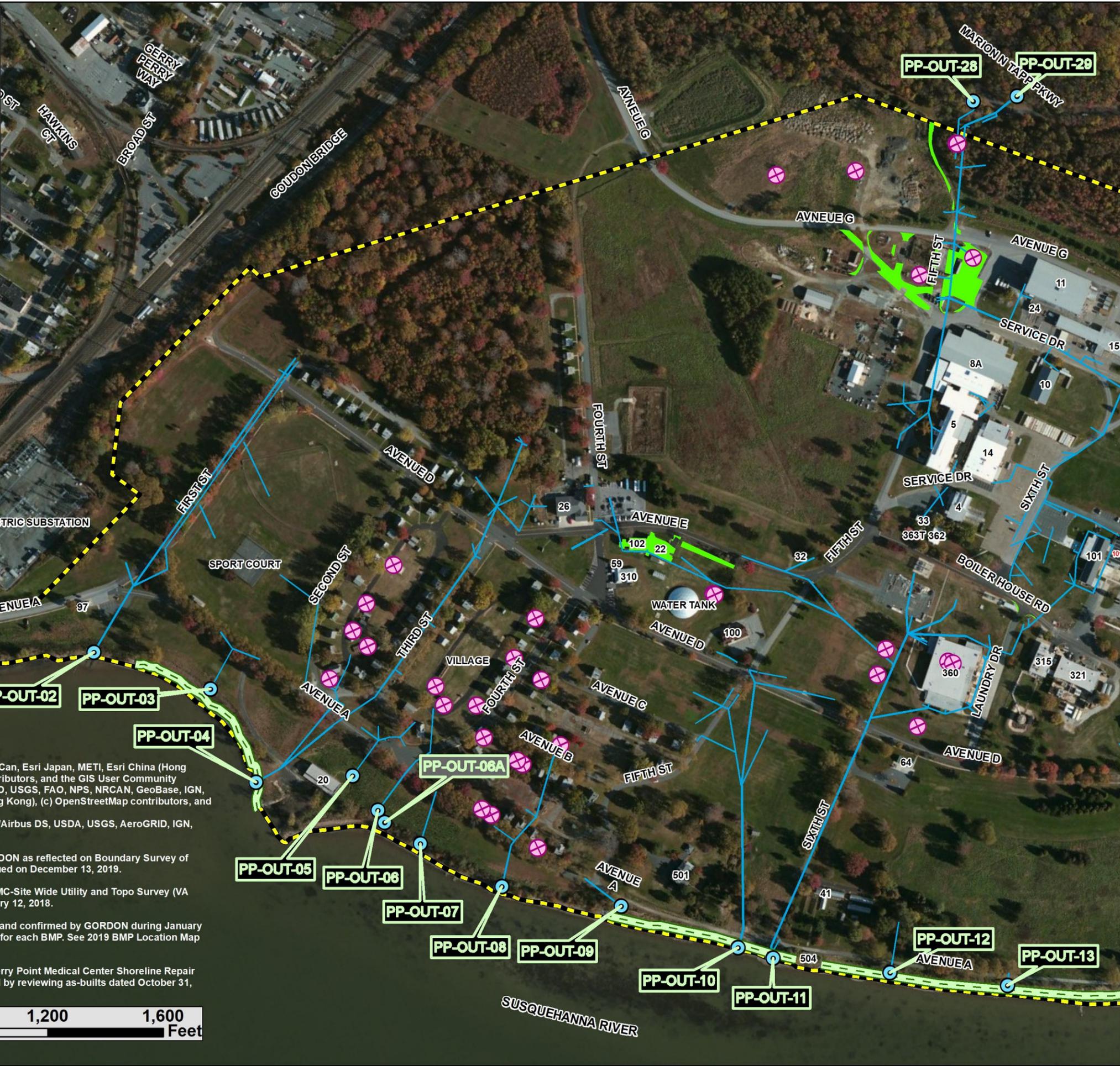
1. Service Layer Credits:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

2. Property Boundary:
 The property line shown based on field survey performed by GORDON as reflected on Boundary Survey of Perry Point Medical Center (VA Project Number 512A5-19-016) Issued on December 13, 2019.

3. Storm Sewer:
 All storm sewer utilities are shown as reflected on Perry Point VAMC-Site Wide Utility and Topo Survey (VA Project Number 512A5-14-308) by Nurtec Design issued on February 12, 2018.

4. Best Management Practices (BMPs):
 BMP locations have been obtained from multiple record drawings and confirmed by GORDON during January 2020 site visit. Please see BMP database for MDE permit numbers for each BMP. See 2019 BMP Location Map for a detail map of BMPs.

5. Shoreline Management:
 The extents of shoreline management have been obtained from Perry Point Medical Center Shoreline Repair (VA Project Number 512A5-06-305) record drawings and confirmed by reviewing as-builts dated October 31, 2011. Please see BMP database for MDE permit number.



U.S. Department of Veterans Affairs

Gordon
 4501 Daly Drive
 Suite 200
 Chantilly, VA 20151
 (703) 236-1900

AECOM
 12420 Milestone Center Drive, Suite 150
 Germantown, MD 20876
 (301) 820-3000

NPDES General Permit -
 MS4 Perry Point and Loch Raven

FINAL
 2020 Outfall Map

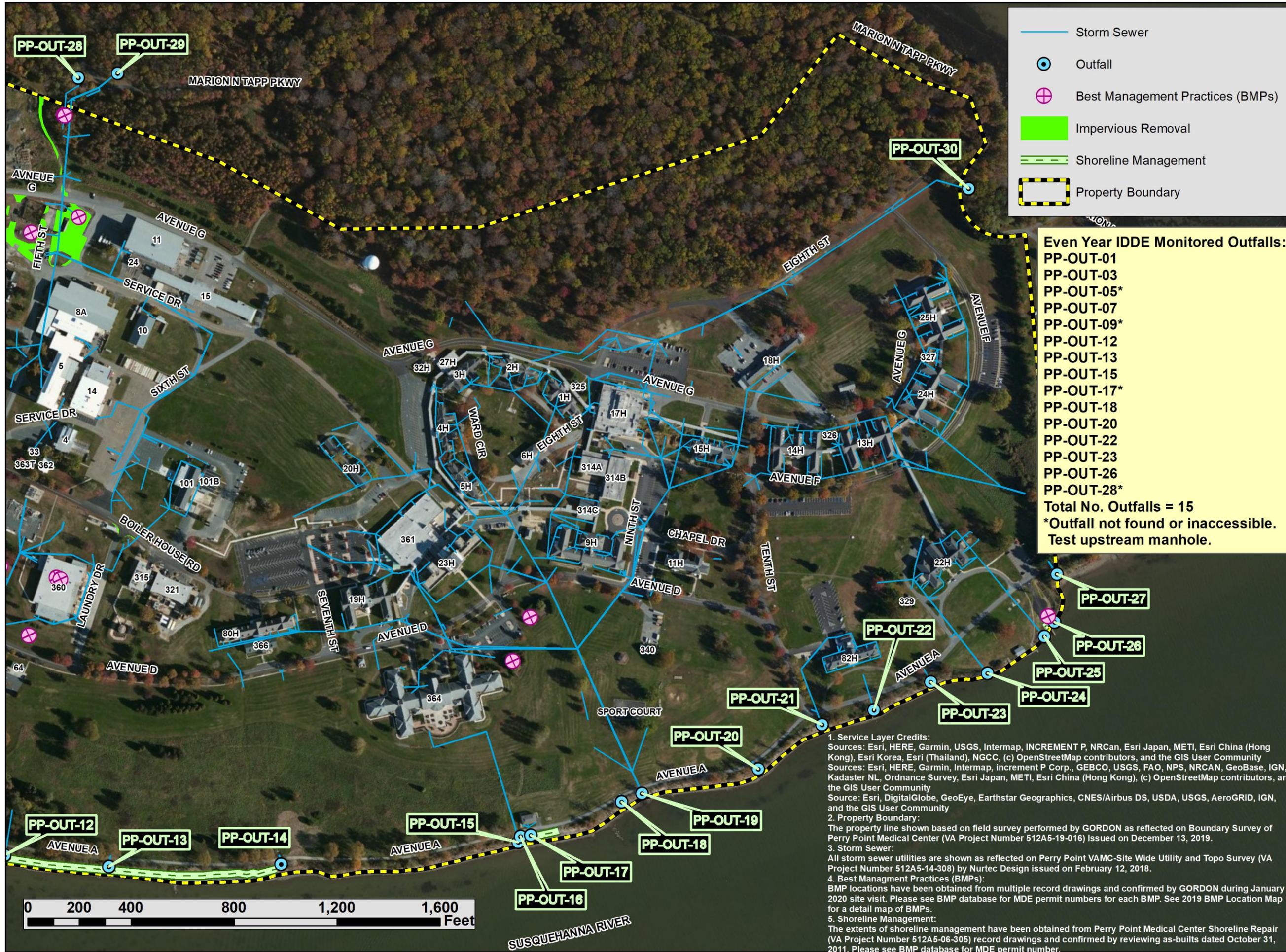
Perry Point VA Medical Center
 Perry Point, Maryland

Datum
 NAD 83

Contract No.
 VA 245-17-D-0131

Project No.	Date
512A5-19-010	September 2020
Gordon Project No.	AECOM Project No.
3287-0301	60617886

Map No.
 I - 4



— Storm Sewer
 ● Outfall
 ⊕ Best Management Practices (BMPs)
 ■ Impervious Removal
 --- Shoreline Management
 □ Property Boundary



VA U.S. Department of Veterans Affairs
Gordon
 4501 Daly Drive
 Suite 200
 Chantilly, VA 20151
 (703) 236-1900
AECOM
 12420 Milestone Center Drive, Suite 150
 Germantown, MD 20876
 (301) 820-3000

Even Year IDDE Monitored Outfalls:

- PP-OUT-01
- PP-OUT-03
- PP-OUT-05*
- PP-OUT-07
- PP-OUT-09*
- PP-OUT-12
- PP-OUT-13
- PP-OUT-15
- PP-OUT-17*
- PP-OUT-18
- PP-OUT-20
- PP-OUT-22
- PP-OUT-23
- PP-OUT-26
- PP-OUT-28*

Total No. Outfalls = 15
 *Outfall not found or inaccessible.
 Test upstream manhole.

NPDES General Permit -
 MS4 Perry Point and Loch Raven
FINAL
 2020 Outfall Map
 Perry Point VA Medical Center
 Perry Point, Maryland

Datum
 NAD 83

Contract No.
VA 245-17-D-0131

Project No. 512A5-19-010
Date September 2020

Gordon Project No. 3287-0301
AECOM Project No. 60617886

Map No.
1 - 5

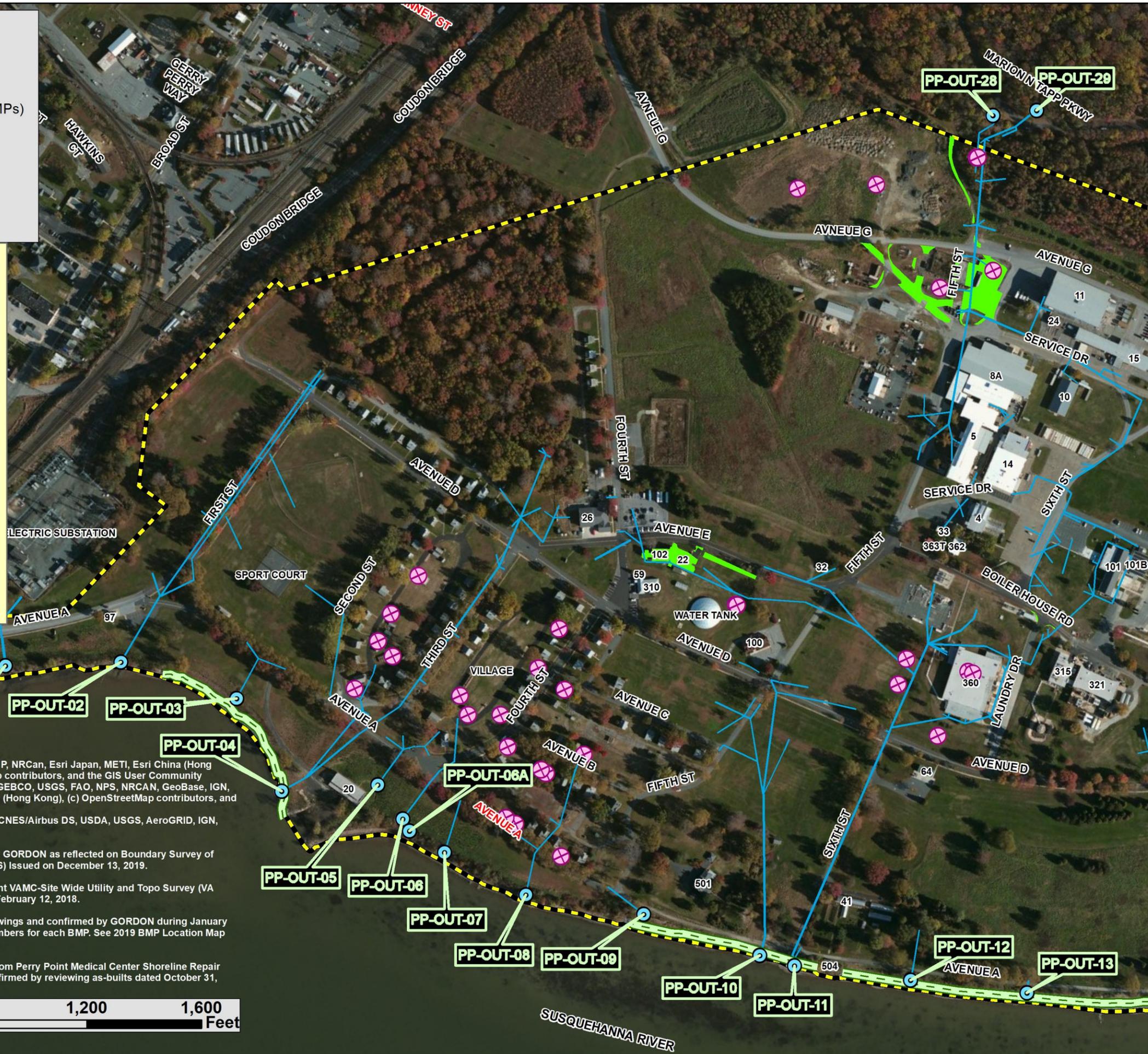
1. Service Layer Credits:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 2. Property Boundary:
 The property line shown based on field survey performed by GORDON as reflected on Boundary Survey of Perry Point Medical Center (VA Project Number 512A5-19-016) Issued on December 13, 2019.
 3. Storm Sewer:
 All storm sewer utilities are shown as reflected on Perry Point VAMC-Site Wide Utility and Topo Survey (VA Project Number 512A5-14-308) by Nurtec Design issued on February 12, 2018.
 4. Best Management Practices (BMPs):
 BMP locations have been obtained from multiple record drawings and confirmed by GORDON during January 2020 site visit. Please see BMP database for MDE permit numbers for each BMP. See 2019 BMP Location Map for a detail map of BMPs.
 5. Shoreline Management:
 The extents of shoreline management have been obtained from Perry Point Medical Center Shoreline Repair (VA Project Number 512A5-06-305) record drawings and confirmed by reviewing as-builts dated October 31, 2011. Please see BMP database for MDE permit number.



-  Storm Sewer
-  Outfall
-  Best Management Practices (BMPs)
-  Impervious Removal
-  Shoreline Management
-  Property Boundary

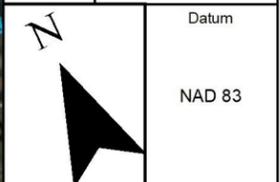
Odd Year IDDE Monitored Outfalls:
 PP-OUT-02
 PP-OUT-04*
 PP-OUT-06
 PP-OUT-06A
 PP-OUT-08
 PP-OUT-10
 PP-OUT-11
 PP-OUT-14
 PP-OUT-16*
 PP-OUT-19
 PP-OUT-21
 PP-OUT-24
 PP-OUT-25
 PP-OUT-27
 PP-OUT-29*
 PP-OUT-30
Total No. Outfalls = 16
 *Outfall not found or inaccessible.
 Test upstream manhole.

1. Service Layer Credits:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 2. Property Boundary:
 The property line shown based on field survey performed by GORDON as reflected on Boundary Survey of Perry Point Medical Center (VA Project Number 512A5-19-016) Issued on December 13, 2019.
 3. Storm Sewer:
 All storm sewer utilities are shown as reflected on Perry Point VAMC-Site Wide Utility and Topo Survey (VA Project Number 512A5-14-308) by Nurtec Design issued on February 12, 2018.
 4. Best Management Practices (BMPs):
 BMP locations have been obtained from multiple record drawings and confirmed by GORDON during January 2020 site visit. Please see BMP database for MDE permit numbers for each BMP. See 2019 BMP Location Map for a detail map of BMPs.
 5. Shoreline Management:
 The extents of shoreline management have been obtained from Perry Point Medical Center Shoreline Repair (VA Project Number 512A5-06-305) record drawings and confirmed by reviewing as-builts dated October 31, 2011. Please see BMP database for MDE permit number.



Gordon
 4501 Daly Drive
 Suite 200
 Chantilly, VA 20151
 (703) 236-1900
AECOM
 12420 Milestone Center
 Drive, Suite 150
 Germantown, MD 20876
 (301) 820-3000

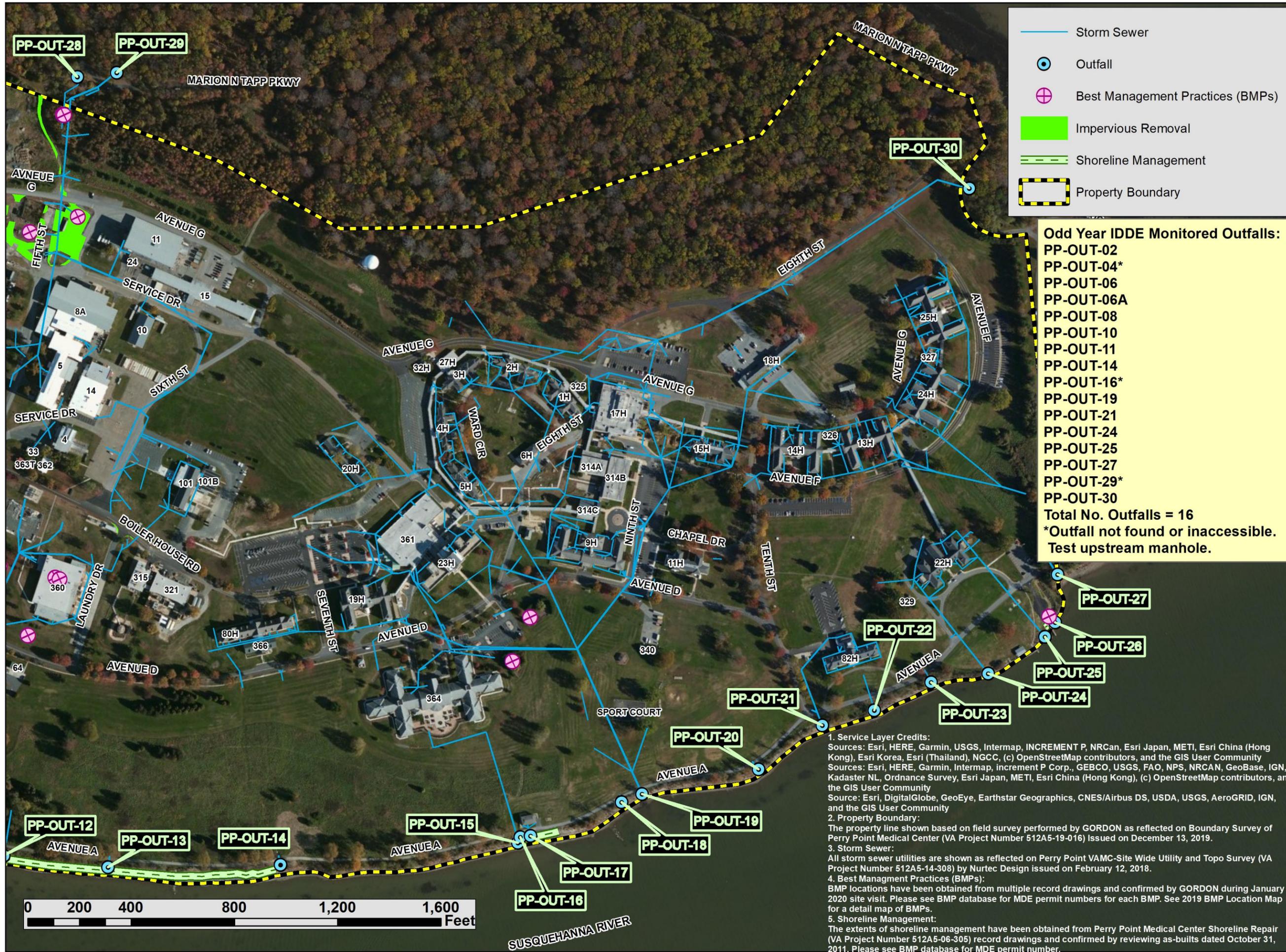
NPDES General Permit -
 MS4 Perry Point and Loch Raven
FINAL
 2020 Outfall Map
 Perry Point VA Medical Center
 Perry Point, Maryland



Contract No.
 VA 245-17-D-0131

Project No.	Date
512A5-19-010	September 2020
Gordon Project No.	AECOM Project No.
3287-0301	60617886

Map No.
 1 - 6



- Storm Sewer
- Outfall
- Best Management Practices (BMPs)
- Impervious Removal
- Shoreline Management
- Property Boundary

Odd Year IDDE Monitored Outfalls:
 PP-OUT-02
 PP-OUT-04*
 PP-OUT-06
 PP-OUT-06A
 PP-OUT-08
 PP-OUT-10
 PP-OUT-11
 PP-OUT-14
 PP-OUT-16*
 PP-OUT-19
 PP-OUT-21
 PP-OUT-24
 PP-OUT-25
 PP-OUT-27
 PP-OUT-29*
 PP-OUT-30

Total No. Outfalls = 16
 *Outfall not found or inaccessible.
 Test upstream manhole.

1. Service Layer Credits:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

2. Property Boundary:
 The property line shown based on field survey performed by GORDON as reflected on Boundary Survey of Perry Point Medical Center (VA Project Number 512A5-19-016) Issued on December 13, 2019.

3. Storm Sewer:
 All storm sewer utilities are shown as reflected on Perry Point VAMC-Site Wide Utility and Topo Survey (VA Project Number 512A5-14-308) by Nurtec Design issued on February 12, 2018.

4. Best Management Practices (BMPs):
 BMP locations have been obtained from multiple record drawings and confirmed by GORDON during January 2020 site visit. Please see BMP database for MDE permit numbers for each BMP. See 2019 BMP Location Map for a detail map of BMPs.

5. Shoreline Management:
 The extents of shoreline management have been obtained from Perry Point Medical Center Shoreline Repair (VA Project Number 512A5-06-305) record drawings and confirmed by reviewing as-builts dated October 31, 2011. Please see BMP database for MDE permit number.



Gordon
 4501 Daly Drive
 Suite 200
 Chantilly, VA 20151
 (703) 236-1900

AECOM
 12420 Milestone Center
 Drive, Suite 150
 Germantown, MD 20876
 (301) 820-3000

NPDES General Permit -
 MS4 Perry Point and Loch Raven

FINAL
 2020 Outfall Map

Perry Point VA Medical Center
 Perry Point, Maryland

Datum
 NAD 83

Contract No.
 VA 245-17-D-0131

Project No.	Date
512A5-19-010	September 2020
Gordon Project No.	AECOM Project No.
3287-0301	60617886

Map No.
 1 - 7

MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)

MCP 512/OPS-S-04X

VA Maryland Health Care System (VAMHCS)

Baltimore, Maryland 21201
Loch Raven VA Medical Center
Perry Point VA Medical Center

Rescinded Document:
None

Signatory Authority:

Director, VA Maryland Health Care System

Effective Date:
October 31, 2018

Responsible Owner:

Chief, Safety and Occupational Health

Recertification Date:
October 31, 2023

1. POLICY

a. This medical center policy (MCP) sets forth the Veterans Affairs (VA) policy governing stormwater pollution prevention herein referred to as the MS4 Policy. The policy guidance provided outlines proper protocols for minimizing stormwater pollution during activities that directly and indirectly impact stormwater runoff.

b. Stormwater runoff at both the Loch Raven and Perry Point Medical Centers flows to their storm sewer system, which is permitted by the Maryland Department of the Environment (MDE) as a Phase II Municipal Separate Storm Sewer System (MS4) under the National Pollutant Discharge Elimination System (NPDES) permit.

The VA is responsible for maintaining compliance with permit conditions at Loch Raven and Perry Point; however, compliance with permit conditions requires cooperation from campus residents, employees, and visitors.

c. The following pollution prevention measures will be implemented to protect surface waters that receive stormwater discharges from Loch Raven and Perry Point:

(1) Illicit Discharges

Dumping or disposal of any material into a VAMHCS storm drain is considered an illicit discharge. Illicit discharges may be deliberate or unintentional and can occur at any time. Illicit discharges can include a range of materials and activities such as discarded litter and waste materials, oil spills, muddy runoff, tracked sediment and sanitary sewer cross-connections, all which allow pollutants to enter the storm sewer system and eventually the waters of the U.S.

VA personnel will investigate illicit discharges; however, residents, employees, and visitors should notify VAMHCSGEMSPProgram@va.gov when they observe an illicit discharge occurring. Examples of reportable incidents include:

- Any flow observed 72 hours or more after the last rain event.
- Muddy runoff or tracked sediment, especially near or at a construction site.

- Wash water from vehicle and equipment washing (other than residents' personal vehicles).
- Spilled or dumped chemicals or waste materials (dry or wet) that are entering a storm drain.
- Pet wastes

Exceptions to the illicit discharge rule include water from firefighting activities, hydrant and potable water line flushing, landscape irrigation, and groundwater or springs. Any concerns or suspected illicit discharges should be reported to VAMHCSGEMSPprogram@va.gov for further investigation.

(2) **Vehicle Washing.** Vehicle washing generates wash water 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. The VA's stormwater permit explicitly prohibits the discharge of wash water associated with municipal vehicle washing operations to the VA's storm sewer systems at both Loch Raven and Perry Point. Municipal vehicles include:

- Loch Raven and Perry Point police cars
- Perry Point fire trucks and engines
- Military vehicles
- Public Works vehicles
- Public Works equipment
- Buses
- Contractor vehicles and equipment
- All other vehicles designated for official government use at the VA Medical Centers

(2) Spills and Leaks

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 per the VAMHCS Emergency Operations Plan or Site-specific Integrated Contingency Plan (ICP) to keep spilled material from entering the storm drain system.

Typical remedial actions for responding to spills and leaks are an immediate use of spill kits, drain covers, and sorbents. Response to spills and leaks immediately by:

- Reporting the incidents when they occur
- Containing the spill on site

Location of spill kits, drain covers, and sorbents are identified in each campus's respective Good Housekeeping Plan and site-specific ICP. The Loch Raven and Perry Point ICPs serve as the Spill Prevention, Control, and Countermeasures (SPCC) and Resource Conservation and Recovery Act (RCRA) Hazardous Waste Contingency plan.

All spills and leaks are required to be reported to VAMHCSGEMSProgram@va.gov, who can advise on proper cleanup. . Emergency spills and leaks involving hazardous substances should also be reported to Emergency Services by calling 9-911 at Loch Raven, and 25930 at Perry Point.

(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 VAMHCSGEMSProgram@va.gov.

Stormwater discharges from construction must be minimized by using erosion and sediment controls and protective barriers around disturbed land and stockpiles. Projects disturbing greater than 5,000 square feet or 100 cubic yards must submit an Erosion and Sediment Control Plan to MDE for review and approval. Projects disturbing greater than 5,000 square feet or 100 cubic yards must submit a Stormwater Management Plan to MDE for review and approval. Projects disturbing one acre or more of land must develop a stormwater pollution prevention plan (SWPPP) and apply for coverage under the Construction General Permit. MDE 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.

Any planned submittals to MDE must be submitted to the project coordinator for review and approval at least 30 days prior to submission to MDE. All construction projects are subject to inspection by Engineering Division personnel. Access to the construction sites must therefore be granted to Engineering Division personnel whenever inspections are conducted.

(5) Stormwater Best Management Practices for High-Priority Pollutant Sources

High-Priority Sources are considered facilities and locations on both campuses which have the potential to discharge pollutants from the following activities:

- Accidental Spills and Leaks
- Fueling Activities
- Above Ground Storage Tanks (ASTs)
- Loading/Unloading of Materials
- Loading/Unloading of Hazardous Material
- Storage of Hazardous Materials
- Storage of Scrap Metal
- Storage of Paint and Other Construction Materials
- Steam and Electric Generation
- High Volume Production Cooking

Locations at Loch Raven and Perry Point with elevated potential of pollutant discharge are described in each campus's respective Good Housekeeping Plan and ICPs. The Facilities and Engineering Service (FES) Assistant Chiefs, Maintenance and Operations (M&O), Loch Raven VAMC and Perry Point VAMC are responsible for implementing the procedural stormwater best management practices (BMPs) as described in these plans. The FES Assistant Chiefs, M&O are also responsible for maintaining the Good Housekeeping attachment and providing updates to Green Environmental Management System (GEMS) Managers for the respective ICPs, conducting quarterly compliance inspections of industrial areas, and notifying the GEMS Manager of deficiencies in BMP implementation at the high-priority pollutant sources.

(6) General Stormwater Best Management Practices

The following BMPs should be implemented at the VA campuses to prevent the pollution of stormwater:

- Recycle. Do not throw recyclable materials in the regular trash.
- Keep trash cans and dumpsters closed. Report leaking trash cans or dumpsters to VAMHCSGEMSPProgram@va.gov.
- Do not throw trash, including cigarette butts, on the ground.
- Have your vehicle maintained regularly.
- Immediately clean up spilled materials.
- If you see a spill of oil or of a hazardous material, report it by calling 9-911 at Loch Raven and 25930 at Perry Point.
- If you see a condition that is causing or could cause stormwater pollution, notify VAMHCSGEMSPProgram@va.gov.

(7) Contacting the Green Environmental Management System (GEMS) Manager

Report any conditions that could cause stormwater pollution at the Loch Raven or Perry Point VAMCs to VAMHCSGEMSPProgram@va.gov. The Green Environmental Management System (GEMS) Manager is located in Building 101 at the Perry Point Site and in the 6D Engineering suite of the Baltimore VAMC.

2. JUSTIFICATION

The following federal and state regulations create the need for this policy:

- a. Federal:
 - Federal Water Pollution Control Act (The Clean Water Act)
 - Energy Independence and Security Act (EISA), Section 438
 - Executive Order 13508, Chesapeake Bay Protection and Restoration
 - National Pollutant Discharge Elimination System, 40 CFR Part 122
- b. State:

- Maryland General Permit for Discharges from State and Federal Small Municipal Separate Storm Sewer Systems, General Discharge Permit No. 13-SF-5501
- Maryland General Permit for Stormwater Associated with Construction Activity, General Discharge Permit No. 14-GP
 - Code of Maryland Regulations (COMAR) 26.08.01, 26.17.01, and 26.17.02

3. RESPONSIBILITIES

a. VAMHCS Safety Manager is responsible for this MS4 policy and the GEMS/Safety responsibilities presented throughout this policy and attachments.

b. VAMHCS Facilities and Engineering Service (FES) Chief is responsible for overseeing the FES Maintenance and Operations (M&O) and Projects responsibilities presented throughout this policy and attachments.

c. **FES Assistant Chiefs, Maintenance and Operations (M&O), Loch Raven VAMC and Perry Point VAMC.** The FES Assistant Chiefs, M&O at Loch Raven and Perry Point are responsible for:

- 1) Maintaining and updating the Good Housekeeping attachment and advising GEMS Manager on updates to ICPs at Loch Raven VAMC and/or Perry Point VAMC (such as adding or removal, replacement, and/or repairs to oil-containing equipment such as tanks and transformers).
- 2) Implementing procedural good housekeeping BMPs.
- 3) Conducting and assigning responsibility for conducting quarterly inspections of high pollution-potential areas.
- 4) Notifying the GEMS team about failure to implement BMPs in areas at high risk of pollution.
- 5) Requesting updated BMP maps and/or checklists from the FES Associate Chiefs, Projects, Perry Point VAMC and Loch Raven VAMC
- 6) Providing updated BMP maps and/or checklists if applicable to the Perry Point Grounds Supervisor and Perry Point Village Enhanced Use Lease (EUL) Site Manager (Ralston).

d. **FES Associate Chiefs, Projects Sections at Loch Raven VAMC and Perry Point VAMC.** The FES Associate Chiefs of the Projects Sections are responsible for:

- 1) Updating the MS4 BMP maps for the respective sites.

4. OTHER PARAGRAPHS

None.

5. DEFINITIONS

a. **Illicit Discharge** - any discharge to the municipal separate storm sewer system (MS4) that is not composed entirely of stormwater, except for discharges allowed under an MDE permit or discharges resulting from firefighting operations, hydrant and potable water line flushing, landscape watering, and groundwater or spring water.

b. **Good Housekeeping Plan** – A plan required under the MDE Phase II permit minimum control measures requirements. This measure is meant to outline procedures and practices to be used during daily operations to prevent stormwater pollution and maintain a safe working environment.

c. **Spill Prevention, Control, Countermeasure Plan** – A plan required by federal regulation 40 CFR 112, implemented by the Environmental Protection Agency (EPA). This plan describes measures taken to prevent, contain, and clean up spills during daily operations.

e. d. **Integrated Contingency Plan** – A plan that combines the requirements of the *Spill Prevention, Control, Countermeasure Plan* required by 40 CFR 112 and the *Resource Conservation and Recovery Act (RCRA) Contingency Plan* requirement of 40 CFR 260-299. **Best Management Practice (BMP)** – A structural, vegetative, or procedural practice designed to eliminate the negative impacts of stormwater runoff. Stormwater management BMPs control flooding, reduce erosion, and improve water quality. Procedural BMPs are good housekeeping BMPs used during construction, regular operations, and maintenance.

6. REFERENCES

a. Maryland General Permit for Discharges from State and Federal Small Municipal Separate Storm Sewer Systems, General Discharge Permit No. 13-SF-5501

7. RESCISSION

None.

8. REVIEW

This MCP will be reviewed and updated at the time of MS4 permit renewal and when any permit or procedure modifications occur.

9. RECERTIFICATION

This MCP is scheduled for recertification on or before the last working day of October 2023. This MCP will continue to serve as local policy until it is recertified or rescinded. In the event of contradiction with national policy, the national policy supersedes and controls.

10. SIGNATORY AUTHORITY

Jonathan R. Eckman, P.E.
Acting Director, VA Maryland Health Care System

Date Approved: _____

NOTE: *The signature remains valid until rescinded by an appropriate administrative action.*

DISTRIBUTION: This MCP is available on the VAMHCS intranet for all staff. The Chief of Facilities and Engineering and VAMHCS Safety Manager have also been provided with this document and will distribute to any personnel involved in implementation of this policy.

ATTACHMENTS

Attachment A – Illicit Discharge Detection and Elimination (IDDE)

Attachment B – Good Housekeeping

Attachment C – Stormwater Best Management Practices (BMP) Inspections and Maintenance

Attachment D – MS4 Permit Tracking

**ILLICIT DISCHARGE INSPECTIONS
LOCH RAVEN VA MEDICAL CENTER
ATTACHMENT A1**

1. PURPOSE AND AUTHORITY

The purpose of this attachment is to establish procedures for conducting illicit discharge inspections, which is a component of Minimum Control Measure (MCM) 3: Illicit Discharge Detection and Elimination (IDDE), required under the Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4). This process must be followed by any VA employee who works at the Loch Raven Medical Center.

2. PROCEDURES

a. Inspection Requirements

1) There are five (5) outfalls that have been identified for Loch Raven and 50% (2-3) must be inspected annually, such that all outfalls are inspected at least once over a two year cycle. If an illicit discharge is identified for an outfall, that outfall is inspected in the following year as well.

2) Inspections must be performed during a period when no precipitation or snow melt is occurring and at least 72 hours from the previous measurable storm event.

b. Inspection Locations

1) Refer to the latest stormwater outfall map for outfall locations. An electronic version of the stormwater outfall map can be requested from the Loch Raven or Perry Point Raven Projects Section Supervisors within the Facilities and Engineering Service. No outfalls are within priority areas with high potential for pollution due the nature of VA operations. Priority screening locations would be areas where fueling operations, chemical application, etc., occur.

2) A field survey of Loch Raven's 5 outfalls identified in the latest stormwater outfall map has been conducted. A unique identification number has been assigned to each outfall. The basic characteristics and a photograph of each outfall have been collected and collated into the latest Outfall Monitoring Guide, which can be requested from the Loch Raven or Perry Point Projects Section Supervisors within the Facilities and Engineering Service.

c. Inspection Procedures

1) Conduct field screening of outfalls and record observations on a Sample Collection Field Sheet (provided in Appendix 1). The observations should include the following:

- i. *General information* like time, weather, etc. Record this information in Section 1 (*Background Data*) of the form.
- ii. *Physical characteristics* of the outfall like pipe material, dimensions, shape, etc. Also determine if flow is present. Record observations in Section 2 (*Outfall Description*) of the form.
- iii. *Physical indicators for flowing outfalls* such as odor, color, turbidity, and floatables (not including trash). Fill out this information in Section 3 only if flow is present. If flow is not present, record this observation in Section 2. If flow is present, collect a sample using a telescoping dipper with attached plastic sampler cup.
- iv. *Physical indicators for flowing and non-flowing outfalls* such as outfall damage, deposits/stains, abnormal vegetation, poor pool quality, and pipe benthic growth (algae). Record observations in Section 4 of the form.
- v. *Lab Parameters* such as pH, turbidity, and water temperature. Measure these parameters only if flow is present and a sample is taken. Use a field test kit to analyze the sample for the following contaminants:

- Ammonia
- Copper
- Chlorine
- Detergents

Record measurements in Section 5. If any contaminants/parameters are found to exceed the threshold values, re-test the water sample for the contaminant/parameter(s) and record the second test results.

- vi. *Non-illicit discharge concerns* like trash, maintenance repairs, etc. Record this information in Section 6 of the form.

d. Investigating Illicit Discharges

1) If an outfall with discharge containing contaminants/parameters above the threshold levels is identified during the initial inspection, a resample must be taken within 24 hours of the initial inspection.

2) If the second sample contains a contaminant/parameter above the threshold level(s), follow-up investigations should be conducted to identify the discharge source(s). Conduct investigations as follows:

- i. Start either at the most upstream structure and head downstream or begin moving upstream from the structure that tested above threshold levels for a contaminant or parameter. Attempt to trace the source while outfalls are actively flowing, but no later than one week after the initial illicit discharge is observed.
- ii. Inspect structures and record visual and olfactory observations. Note any pipe connections into the structure that appear to be contributing discharges other than stormwater. Document all observations.

iii. If flow is observed, take a sample and test with lab kit for the aforementioned parameters/contaminants and record results.

iv. Document investigations in a spreadsheet tracking document that includes:

- The date(s) that the illicit discharge was observed and reported
- The results of the investigation
- Any follow-up to the investigation
- Resolution of the investigation
- The date that the investigation was closed

5) Once the source of an illicit discharge (if any) is detected, the VA can be notified at VAMHCSGEMSPProgram@va.gov . The appropriate VA personnel with operational control over the source of the discharge will determine corrective actions necessary to fix or eliminate the discharge. The VA will verify through follow-up investigations that illicit discharges have been eliminated.

e. Eliminating Illicit Discharges

Based on the source of the illicit discharge, specific actions can be taken to eliminate the illicit discharge. The following are example illicit discharge sources and their associated removal methods:

- Spill
 - Refer to Loch Raven Integrated Contingency Plan (ICP) for details
 - Place absorbent booms around the storm drain into which the spill is flowing.
 - Place absorbent booms around the source of the spill.
 - Remove or seal the source of the spill.
 - Clean up the surrounding area.
- Incorrect Pipe Connection (ex. Sewage system, gray water connection)
 - Eliminate illicit discharges suspected of being sanitary sewage or significantly contaminated first.
 - Contact appropriate authority to remove the pipe connection.
- Improper Disposal
 - Identify disposer.
 - Educate the disposer and other employees with proper disposal techniques to prevent future illicit discharges.

f. Inspection Supplies

1) Inspection equipment should include:

- Inspection Forms (see Appendix 1)
- Manhole cover lifting tool
- Dipper pole (telescoping and/or swivel)
- Dipper-compatible sampling cups
- Lab test kits
- YSI Probe (pH, turbidity, and temperature)
- Waste disposal container (for chemical testing waste)
- Distilled water
- Camera/photo-capable cell phone

2) Personal Protective Equipment (PPE) should include:

- Nitrile or similar lab-safe gloves
- First aid kit
- Safety vest
- Safety-toed boots
- Safety glasses/lab goggles
- Long sleeves

g. Safety Considerations

- 1) Always wear safety-toed boots to protect feet from possible crushing injuries while handling the manhole covers.
- 2) Use proper lifting techniques when removing manhole covers to prevent back injury.
- 3) Use extreme caution when working over open manhole structure; no part of your body should enter the plane created by the manhole opening as this would constitute confined space entry.
- 4) DO NOT enter manhole or outfall structures under any conditions.
- 5) Remain vigilant when working on banks of open water bodies.
- 6) DO NOT allow any chemicals in the testing kit to contact skin. If contact should occur, rinse skin immediately with water.
- 7) DO NOT mix chemicals unless specified in the test kit instructions.
- 8) Dispose of all chemicals properly and keep disposal vessel tightly sealed when not in use.
- 9) Manholes will have guards installed after the cover has been removed.

h. Notification to Interested Parties

In the event an illicit discharge is discovered, the VAMHCS GEMS Manager will notify public affairs who will notify interested parties through the *VAMHCS Exchange*, which is currently used to notify affected parties of other work being done on site, e.g., water treatment.

3. ASSIGNMENT OF RESPONSIBILITIES

VAMHCS GEMS Manager: The GEMS manager will manage and assign or contract with the IDDE inspectors and coordinate with the appropriate VAMHCS supervisors to assign responsible parties for eliminating illicit discharges. The GEMS Manager will also review the response to illicit discharges and determine that illicit discharges have been satisfactorily eliminated.

4. DEFINITIONS

a. **Illicit Discharge** - any discharge to the municipal separate storm sewer system (MS4) that is not composed entirely of stormwater, except for discharges allowed under an MDE permit or discharges resulting from firefighting operations.

b. **Measurable Storm Event** – a precipitation event that results in a total measured precipitation accumulation equal to, or greater than, one-tenth (0.1) inch of rainfall and that produces runoff that discharges to the storm sewer system.

5. REFERENCES

a. Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4), General Discharge Permit No. 13-SF-5501

b. Illicit Discharge Detection and Elimination Guidance Manual for Program Development and Technical Assessments

**ILLICIT DISCHARGE INSPECTIONS
PERRY POINT VA MEDICAL CENTER
ATTACHMENT A2**

1. PURPOSE AND AUTHORITY

The purpose of this attachment is to establish procedures for conducting illicit discharge inspections, which is a component of Minimum Control Measure (MCM)3: Illicit Discharge Detection and Elimination (IDDE), required under the Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4). This process must be followed by any VA employee who works at the Perry Point Medical Center.

2. PROCEDURES

a. Inspection Requirements

1) There are 31 outfalls that have been identified for Perry Point and 50% (15-16) must be inspected annually. If an illicit discharge is identified for an outfall, that outfall is inspected in the following year as well.

2) Inspections must be performed during a period when no precipitation or snow melt is occurring and at least 72 hours from the previous measurable storm event.

b. Inspection Locations

1) Refer to the latest stormwater outfall map for outfall locations. An electronic version of the stormwater outfall map can be requested from the Loch Raven or Perry Point Projects Section Supervisors within the Facilities and Engineering Service. No outfalls are within priority areas with high potential for pollution due the nature of VA operations. Priority screening locations would be areas where fueling operations, chemical application, etc., occur.

2) The information for Perry Point's 31 outfalls identified in the latest stormwater outfall map is displayed as reflected on Perry Point VAMC-Site Wide Utility and Topo Survey (VA Project Number 512A5-19-016) by Nurtec Design issued on February 12, 2018. A unique identification number has been assigned to each outfall. The basic characteristics and a photograph of each outfall have been collected and collated into the latest Outfall Monitoring Guide, which can be requested from the Loch Raven or Perry Point Projects Section Supervisors within the Facilities and Engineering Service.

c. Inspection Procedures

1) Conduct field screening of outfalls and record observations on a Sample Collection Field Sheet (provided in Appendix 1). The observations should include the following:

- i. *General information* like time, weather, etc. Record this information in Section 1 (*Background Data*) of the form.
- ii. *Physical characteristics* of the outfall like pipe material, dimensions, shape, etc. Also determine if flow is present. Record observations in Section 2 (*Outfall Description*) of the form.
- iii. *Physical indicators for flowing outfalls* such as odor, color, turbidity, and floatables (not including trash). Fill out this information in Section 3 only if flow is present. If flow is not present, record this observation in Section 2. If flow is present, collect a sample using a telescoping dipper with attached plastic sampler cup.
- iv. *Physical indicators for flowing and non-flowing outfalls* such as outfall damage, deposits/stains, abnormal vegetation, poor pool quality, and pipe benthic growth (algae). Record observations in Section 4 of the form.
- v. *Lab Parameters* such as pH, turbidity, and water temperature. Measure these parameters only if flow is present and a sample is taken. Use a field test kit to analyze the sample for the following contaminants:

- Ammonia
- Copper
- Chlorine
- Detergents

Record measurements in Section 5. If any contaminants/parameters are found to exceed the threshold values, re-test the water sample for the contaminant/parameter(s) and record the second test results.

- vi. *Non-illicit discharge concerns* like trash, maintenance repairs, etc. Record this information in Section 6 of the form.

d. Investigating Illicit Discharges

1) If an outfall with discharge containing contaminants/parameters above the threshold levels is identified during the initial inspection, a resample must be taken within 24 hours of the initial inspection.

2) If the second sample contains a contaminant/parameter above the threshold level(s), follow-up investigations should be conducted to identify the discharge source(s). Conduct investigations as follows:

- i. Start either at the most upstream structure and head downstream or begin moving upstream from the structure that tested above threshold levels for a contaminant or parameter. Attempt to trace the source while outfalls are actively flowing, but no later than one week after the initial illicit discharge is observed.
- ii. Inspect structures and record visual and olfactory observations. Note any pipe connections into the structure that appear to be contributing discharges other than stormwater. Document all observations.

iii. If flow is observed, take a sample and test with lab kit for the aforementioned parameters/contaminants and record results.

iv. Document investigations in a spreadsheet tracking document that includes:

- The date(s) that the illicit discharge was observed and reported
- The results of the investigation
- Any follow-up to the investigation
- Resolution of the investigation
- The date that the investigation was closed

5) Once the source of an illicit discharge (if any) is detected, the VA can be notified at VAMHCSGEMSPProgram@va.gov . The appropriate VA personnel with operational control over the source of the discharge will determine corrective actions necessary to fix or eliminate the discharge. The VA will verify through follow-up investigations that illicit discharges have been eliminated.

e. Eliminating Illicit Discharges

Based on the source of the illicit discharge, specific actions can be taken to eliminate the illicit discharge. The following are example illicit discharge sources and their associated removal methods:

- Spill
 - Refer to Perry Point Integrated Contingency plan for details
 - Place absorbent booms around the storm drain into which the spill is flowing.
 - Place absorbent booms around the source of the spill.
 - Remove or seal the source of the spill.
 - Clean up the surrounding area.
- Incorrect Pipe Connection (ex. Sewage system, gray water connection)
 - Eliminate illicit discharges suspected of being sanitary sewage or significantly contaminated first.
 - Contact appropriate authority to remove the pipe connection.
- Improper Disposal
 - Identify disposer.
 - Educate the disposer and other employees with proper disposal techniques to prevent future illicit discharges.

f. Inspection Supplies

1) Inspection equipment should include:

- Inspection Forms (see Appendix 1)
- Manhole cover lifting tool
- Dipper pole (telescoping and/or swivel)
- Dipper-compatible sampling cups
- Lab test kits
- YSI Probe (pH, turbidity, and temperature)
- Waste disposal container (for chemical testing waste)
- Distilled water
- Camera/photo-capable cell phone

2) Personal Protective Equipment (PPE) should include:

- Nitrile or similar lab-safe gloves
- First aid kit
- Safety vest
- Safety-toed boots
- Safety glasses/lab goggles
- Long sleeves

g. Safety Considerations

- 1) Always wear safety-toed boots to protect feet from possible crushing injuries while handling the manhole covers.
- 2) Use proper lifting techniques when removing manhole covers to prevent back injury.
- 3) Use extreme caution when working over open manhole structure; no part of your body should enter the plane created by the manhole opening as this would constitute confined space entry.
- 4) DO NOT enter manhole or outfall structures under any conditions.
- 5) Remain vigilant when working on banks of open water bodies.
- 6) DO NOT allow any chemicals in the testing kit to contact skin. If contact should occur, rinse skin immediately with water.
- 7) DO NOT mix chemicals unless specified in the test kit instructions.
- 8) Dispose of all chemicals properly and keep disposal vessel tightly sealed when not in use.
- 9) Manholes will have guards installed after the cover has been removed.

h. Notification to Interested Parties

In the event an illicit discharge is discovered, the VAMHCS GEMS Manager will notify public affairs who will notify interested parties through the *VAMHCS Exchange*, which is currently used to notify affected parties of other work being done on site, e.g., water treatment.

3. ASSIGNMENT OF RESPONSIBILITIES

VAMHCS GEMS Manager: The GEMS manager will manage and assign or contract with the IDDE inspectors and coordinate with the appropriate VAMHCS supervisors to assign responsible parties for eliminating illicit discharges. The GEMS Manager will also review the response to illicit discharges and determine that illicit discharges have been satisfactorily eliminated.

4. DEFINITIONS

a. **Illicit Discharge** - any discharge to the municipal separate storm sewer system (MS4) that is not composed entirely of stormwater, except for discharges allowed under an MDE permit or discharges resulting from firefighting operations.

b. **Measurable Storm Event** – a precipitation event that results in a total measured precipitation accumulation equal to, or greater than, one-tenth (0.1) inch of rainfall and that produces runoff that discharges to the storm sewer system.

5. REFERENCES

a. Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4), General Discharge Permit No. 13-SF-5501

b. Illicit Discharge Detection and Elimination Guidance Manual for Program Development and Technical Assessments

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID:	
Today's date:		Time (Military):	
Investigators:		Form completed by:	
Temperature (°F):	Rainfall (in.): Last 24 hours:		Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No		<i>If No, Skip to Section 5</i>		
Pipe Flow?	<input type="checkbox"/> None <input type="checkbox"/> < ¼ Pipe <input type="checkbox"/> < ½ Pipe <input type="checkbox"/> < ¾ Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle				
Comments:					

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges		
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	
Total/Free Chlorine		mg/l	Test strip	
Copper		mg/l	Test strip	
Detergents		mg/l	Probe	
Comments:				

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

INDICATOR	CHECK if	DESCRIPTION	1	2	3
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

<input type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (presence of two or more indicators)	<input type="checkbox"/> Suspect (one or more indicators with a severity of 3)	<input type="checkbox"/> Obvious
-----------------------------------	---	--	----------------------------------

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM	<input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

Priority 1: Immediate action is required

Priority 2: Needs attention

Priority 3: Regular Maintenance

Comments:

X

OUTFALL IDDE TEST RESULTS VA Medical Center Loch Raven

VA CAMPUS: Loch Raven

TEST PERFORMED BY: GORDON/AECOM

ATTACHMENTS: NONE PHOTOS SKETCHES OTHER: Outfall Test Result Sheets

WEATHER: Cloudy

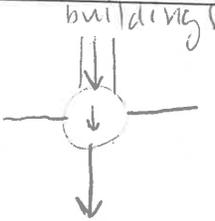
TEST START DATE: 03/09/2020

TEST END DATE: 03/09/2020

TEST RESULTS											
Test	Dry Weather Flow	Ammonia	Total/Free Chlorine	Copper	Detergnets			Temperature	pH	Turbidity	
Acceptable Range	N/A	<0.30 ppm	<0.40 ppm	<0.21 ppm	<1.0 ppm			N/A	6.5 - 8.5	<1,000 NTUs	
Outfall ID	Present (Y/N)	Results NH3-N (ppm)	Results ppm (mg/l)	Results (mg/l)	Present (Y/N)	Range (ppm)			Results (C°)	Result	Results (NTU)
						<1.0	1.0	>1.0			
LR-OUT-002	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	X			14.6	6.81	5.33
LR-OUT-004	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-005	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>LR-OUT-002</u>	
Today's date: <u>3/9/20</u>		Time (Military): <u>10:16 am</u>	
Investigators: <u>MT & AR CW</u>		Form completed by:	
Temperature (°F): <u>54</u>	Rainfall (in.): Last 24 hours:	Last 48 hours: <u>0 in</u>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial <input type="checkbox"/> Ultra-Urban Residential <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Commercial		<input type="checkbox"/> Open Space <input type="checkbox"/> Institutional Other: _____ Known Industries: _____	
			
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: <u>MH brick?</u>	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input checked="" type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature	<u>14.6 °C</u>	°F	Thermometer	
pH	<u>6.81</u>	pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input checked="" type="checkbox"/>	S. 33 See severity	<input checked="" type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input checked="" type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>LR-OUT-004</u>	
Today's date: <u>3/9/10</u>		Time (Military): <u>11:20 AM</u>	
Investigators: <u>CAW & MT</u>		Form completed by: <u>CAW</u>	
Temperature (°F):	Rainfall (in.): Last 24 hours:	Last 48 hours: <u>0</u>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial <input type="checkbox"/> Ultra-Urban Residential <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Commercial		<input type="checkbox"/> Open Space <input type="checkbox"/> Institutional Other: _____ Known Industries: _____	
Notes (e.g., origin of outfall, if known): <div style="text-align: center; margin-top: 10px;">  </div>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____ <u>brick + concrete</u>	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____ <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

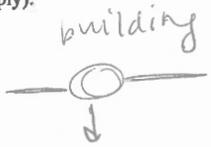
Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

↑ potential → confirmed

Subwatershed:		Outfall ID: LR-OUT-005	
Today's date: 3/9/20		Time (Military): 11:35am	
Investigators: CAW & MT		Form completed by: CAW	
Temperature (°F): 60°	Rainfall (in.): Last 24 hours:		Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial <input type="checkbox"/> Ultra-Urban Residential <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Commercial		<input type="checkbox"/> Open Space <input type="checkbox"/> Institutional Other: _____ Known Industries: _____	
Notes (e.g., origin of outfall, if known):			



Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____ concrete	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
	<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>		standing water	
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	___' ___"	Ft, In	Tape measure
	Measured length	___' ___"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL IDDE TEST RESULTS VA Medical Center Loch Raven

VA CAMPUS: Loch Raven

TEST PERFORMED BY: GORDON/AECOM

ATTACHMENTS: NONE PHOTOS SKETCHES OTHER: Outfall Test Result Sheets

WEATHER: *sunny, 50s*

TEST START DATE: *9/15/20*

TEST END DATE: *9/15/20*

TEST RESULTS											
Test	Dry Weather Flow	Ammonia	Total/Free Chlorine	Copper	Detergnets			Temperature	pH	Turbidity	
Acceptable Range	N/A	<0.30 ppm	<0.40 ppm	<0.21 ppm	<1.0 ppm			N/A	6.5 - 8.5	<1,000 NTUs	
Outfall ID	Present (Y/N)	Results NH3-N (ppm)	Results ppm (mg/l)	Results (mg/l)	Present (Y/N)	Range (ppm)			Results (C°)	Result	Results (NTU)
						<1.0	1.0	>1.0			
LR-OUT-001	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	X			19.89	7.82	710.5
LR-OUT-003	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	X			18.30	7.59	341
LR-OUT- <i>002</i>	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	0	0	0	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	X			20.99	7.43	65
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
LR-OUT-__	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						

mysterious flowing grate →





OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

LR-UNT

Subwatershed:		Outfall ID: <u>Evanna/Grate</u> 001	
Today's date: <u>9/15/2020</u>		Time (Military): <u>11:22 AM</u>	
Investigators: <u>CAW & MT</u>		Form completed by: <u>CAW</u>	
Temperature (°F): <u>61</u>	Rainfall (in.): Last 24 hours: <u>0</u> in Last 48 hours:		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If No, Skip to Section 5			
Pipe Flow?	<input type="checkbox"/> None	<input checked="" type="checkbox"/> $\frac{1}{4}$ Pipe	<input type="checkbox"/> $< \frac{1}{2}$ Pipe	<input type="checkbox"/> $< \frac{3}{4}$ Pipe	<input type="checkbox"/> Full <input checked="" type="checkbox"/> Trickle
Comments: <u>Steady flow, < 1 in</u>					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges		
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature	19.89	°F	Thermometer	
pH	7.82	pH Units	Test strip/Probe	
Ammonia	0	mg/L	Test strip	
Total/Free Chlorine	0	mg/l	Test strip	
Copper	0	mg/l	Test strip	
Detergents	0	mg/l	Probe	
Comments: reagent				



U.S. Department of Veterans Affairs

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input checked="" type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool	
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Priority 1: Immediate action is required
 Priority 2: Needs attention
 Priority 3: Regular Maintenance

Comments:



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <i>Grate</i> <i>Manhole in middle of campus</i>	
Today's date: <i>9/15/20</i>		Time (Military): <i>10:45 am</i>	
Investigators: <i>MLT TCAW</i>		Form completed by: <i>MLT</i>	
Temperature (°F):	Rainfall (in.): Last 24 hours:	Last 48 hours: <i>0 in</i>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space		
<input type="checkbox"/> Ultra-Urban Residential	<input type="checkbox"/> Institutional		
<input type="checkbox"/> Suburban Residential	Other: _____		
<input type="checkbox"/> Commercial	Known Industries: _____		
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <i>~ 18"</i>	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Pipe Flow?	<input type="checkbox"/> None <input checked="" type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle				
Comments: <i>Steady flow year round we are told.</i>					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges		
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	
Total/Free Chlorine		mg/l	Test strip	
Copper		mg/l	Test strip	
Detergents		mg/l	Probe	
Comments:				

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

<input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (presence of two or more indicators)	<input type="checkbox"/> Suspect (one or more indicators with a severity of 3)	<input type="checkbox"/> Obvious
--	---	--	----------------------------------

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

Priority 1: Immediate action is required

Priority 2: Needs attention

Priority 3: Regular Maintenance

Comments:



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: LR0MT-002	
Today's date: 9/15/2020		Time (Military): 11:51 AM	
Investigators: CAW & MT		Form completed by: CAW	
Temperature (°F): 41	Rainfall (in.): Last 24 hours:		Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Pipe Flow?	<input type="checkbox"/> None <input checked="" type="checkbox"/> 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input checked="" type="checkbox"/> Trickle				
Comments:					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
		Flow #1 = Flat and Shallow Flow	Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume	150	Liter mL	Bottle
	Time to fill	14	Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	___' ___"	Ft, In	Tape measure
	Measured length	___' ___"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature	20.99	°F	Thermometer	
pH	7.43	pH Units	Test strip/Probe	
Ammonia	0	mg/L	Test strip	
Total/Free Chlorine	0	mg/l	Test strip	
Copper	0	mg/l	Test strip	
Detergents	0	mg/l	Probe	
Comments:				



U.S. Department of Veterans Affairs

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

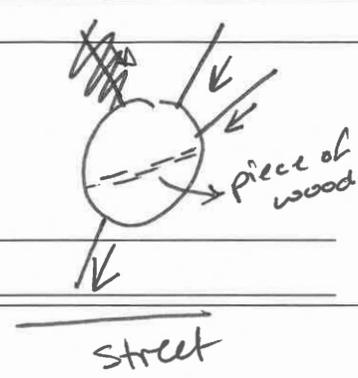
Priority 1: Immediate action is required
 Priority 2: Needs attention
 Priority 3: Regular Maintenance

Comments:



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: LR-OUT003	
Today's date: 9/15/20		Time (Military): 12:15 pm	
Investigators: CAW + MLT		Form completed by: MLT	
Temperature (°F): 61	Rainfall (in.): Last 24 hours:	Last 48 hours: 0 in	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial <input type="checkbox"/> Ultra-Urban Residential <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Commercial		<input type="checkbox"/> Open Space <input type="checkbox"/> Institutional Other: _____ Known Industries: _____	
Comments (e.g., origin of outfall, if known): <div style="text-align: right;">  </div>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____ <i>multiple pipes</i>	Diameter/Dimensions: ~12"	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Pipe Flow?	<input type="checkbox"/> None <input type="checkbox"/> < ¼ Pipe <input type="checkbox"/> < ½ Pipe <input type="checkbox"/> < ¾ Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle				
Comments: Remove 2x4 wood @ the bottom of the manhole.					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges		
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	
Total/Free Chlorine		mg/l	Test strip	
Copper		mg/l	Test strip	
Detergents		mg/l	Probe	
Comments:				

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
Priority 1: Immediate action is required Priority 2: Needs attention Priority 3: Regular Maintenance		

Comments:

Outfall Maintenance List



Department of Veterans Affairs

Loch Raven

March 2020

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: March 2020



OUTFALL ANNUAL REQUIRED MAINTENANCE SUMMARY

VA CAMPUS: Loch Raven

MAINTENANCE DIRECTOR: _____

PHONE NO. : _____

Note: This table has been prepared to provide a summary of required maintenance activities identified during the most recent illicit discharge inspection. Required maintenance activities should be completed before the next illicit discharge inspections at these outfalls. See attached for site pictures

Outfall-ID	Outfall Location	Last Inspection (MM/DD/YY)	Re-inspection (MM/DD/YY)	Required Maintenance Activity	Status
					Complete
LR-OUT-002	Grassy area adjacent to the Alameda and the South Outpatient Building Parking Lot. Next to brick retaining wall.	03/09/20	___ / ___ / ___	No action necessary.	<input type="checkbox"/>
LR-OUT-004	Sidewalk adjacent to Northeast entrance to CLRC parking lot brick wall.	03/09/20	___ / ___ / ___	No action necessary.	<input type="checkbox"/>
LR-OUT-005	Grassy area between The Alameda and Outpatient Clinic. Next to brick retaining wall.	03/09/20	___ / ___ / ___	No action necessary.	<input type="checkbox"/>

LR-OUT-002



Observation: Pipes appear to be in good condition. No debris or sediment accumulation present.
Recommended: No action required.



Prepared by:
GORDON/AECOM – 703-263-1900

Issued: March 2020

LR-OUT-004



Observation: Pipes appear to be in good condition. No debris or sediment accumulation present.
Recommended: No action required.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: March 2020

LR-OUT-005



Observation: Pipes appear to be in good condition. No debris or sediment accumulation present.

Recommended: No action required.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: March 2020

Outfall Maintenance List



Department of Veterans Affairs

Loch Raven

September 2020

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020



OUTFALL ANNUAL REQUIRED MAINTENANCE SUMMARY

VA CAMPUS: Loch Raven

MAINTENANCE DIRECTOR: _____

PHONE NO. : _____

Note: This table has been prepared to provide a summary of required maintenance activities identified during the most recent illicit discharge inspection. Required maintenance activities should be completed before the next illicit discharge inspections at these outfalls. See attached for site pictures

Outfall-ID	Outfall Location	Last Inspection (MM/DD/YY)	Re-inspection (MM/DD/YY)	Required Maintenance Activity	Status
					Complete
LR-OUT-001	Grassy area adjacent to the Alameda and the North Entrance Parking Lot. Next to brick retaining wall.	09/15/20	___ / ___ / ___	No action necessary.	<input type="checkbox"/>
LR-OUT-002	Grassy area adjacent to the Alameda and the South Outpatient Building Parking Lot. Next to brick retaining wall.	09/15/20	___ / ___ / ___	No action necessary.	<input type="checkbox"/>
LR-OUT-003	Ivy-covered hillslope below Community Living Center entrance adjacent to Loch Raven Boulevard. Next to brick retaining wall.	09/15/20	___ / ___ / ___	Remove wood board from manhole.	<input type="checkbox"/>

LR-OUT-001



Observation: Pipes and manhole appear to be in good condition. No debris or sediment accumulation present.
Recommended: No action required.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

LR-OUT-002



Observation: Pipes and manhole appear to be in good condition. No debris or sediment accumulation present.
Recommended: No action required.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

LR-OUT-003



Observation: Pipes appear to be in good condition.
No debris or sediment accumulation present. Wood
board stuck in manhole.
Recommended: Remove wood board.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

X

OUTFALL IDDE TEST RESULTS VA Medical Center Perry Point

VA CAMPUS: Perry Point

TEST PERFORMED BY: GORDON/AECOM

ATTACHMENTS: NONE PHOTOS SKETCHES OTHER: Outfall Test Result Sheets

WEATHER: Cloudy/ Partly Cloudy

TEST START DATE: 03/09/2020

TEST END DATE: 03/10/2020

TEST RESULTS											
Test	Dry Weather Flow	Ammonia	Total/Free Chlorine	Copper	Detergents			Temperature	pH	Turbidity	
Acceptable Range	N/A	<0.30 ppm	<0.40 ppm	<0.21 ppm	<1.0 ppm			N/A	6.5 - 8.5	<1,000 NTUs	
Outfall ID	Present (Y/N)	Results NH3-N (ppm)	Results ppm (mg/l)	Results (mg/l)	Present (Y/N)	Range (ppm)			Results (C°)	Result	Results (NTU)
						<1.0	1.0	>1.0			
PP-OUT-002	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	X			12.9	7.63	5.07
PP-OUT-004	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	X			10.9	7.98	57.28
PP-OUT-006	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
PP-OUT-007	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
PP-OUT-008	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
PP-OUT-010	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	X			10.9	7.5	-0.02
PP-OUT-011	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	X			13.8	7.32	2.52
PP-OUT-014	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
PP-OUT-016	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
PP-OUT-019	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	X			13.9	7.36	0.78
PP-OUT-021	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
PP-OUT-024	<input type="checkbox"/> Y <input type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
PP-OUT-025	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				10.5	7.76	4.56
PP-OUT-027	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
PP-OUT-029	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/> Y <input type="checkbox"/> N						
PP-OUT-030	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	X			11.1	7.32	12.19

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-002</u>	
Today's date: <u>3/9/20</u>		Time (Military): <u>1:28</u>	
Investigators: <u>CAW + MT</u>		Form completed by: <u>CAW</u>	
Temperature (°F): <u>62</u>	Rainfall (in.):	Last 24 hours:	Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space		
<input type="checkbox"/> Ultra-Urban Residential	<input type="checkbox"/> Institutional		
<input type="checkbox"/> Suburban Residential	Other: _____		
<input type="checkbox"/> Commercial	Known Industries: _____		
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input checked="" type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>24"</u> Depth: _____ Top Width: _____ Bottom Width: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Flow Description (If present)	<input checked="" type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth	<u>0.5"</u>	In	Tape measure
	Flow width	____, ____"	Ft, In	Tape measure
	Measured length	____, ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature	<u>12.9 C</u>	°F	Thermometer	
pH	<u>7.63</u>	pH Units	Test strip/Probe	
Ammonia	<u>0</u>	mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input checked="" type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input checked="" type="checkbox"/> Corrosion	
Deposits/Stains	<input checked="" type="checkbox"/>	<input type="checkbox"/> Oily <input checked="" type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input checked="" type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	seaweed, could have washed into the water
Poor pool quality	<input checked="" type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input checked="" type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	blocked by logs, debris, trash
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input checked="" type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

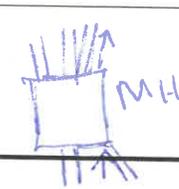
Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PROUT-004</u>	
Today's date: <u>3/10/20</u>		Time (Military): <u>8:45</u>	
Investigators: <u>MT+CW</u>		Form completed by: <u>MT</u>	
Temperature (°F):	Rainfall (in.): Last 24 hours:	Last 48 hours: <u>0.1</u>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	Diameter/Dimensions: 	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____', ____"	Ft, In	Tape measure
	Measured length	____', ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature	<u>10.9 C</u>	°F	Thermometer	
pH	<u>7.98</u>	pH Units	Test strip/Probe	
Ammonia	<u>0</u>	mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input checked="" type="checkbox"/>	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	Sediment
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-006</u>	
Today's date: <u>3/9/20</u>		Time (Military): <u>2:25</u>	
Investigators: <u>MT + CV</u>		Form completed by: <u>MT</u>	
Temperature (°F): <u>62</u>	Rainfall (in.): Last 24 hours:	Last 48 hours: <u>0 in</u>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space		
<input type="checkbox"/> Ultra-Urban Residential	<input type="checkbox"/> Institutional		
<input type="checkbox"/> Suburban Residential	Other: _____		
<input type="checkbox"/> Commercial	Known Industries: _____		
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input checked="" type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>18"</u>	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <i>debris</i> <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS:				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	_____ " _____ "	Ft, In	Tape measure
	Measured length	_____ ' _____ "	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	Could not see bottom of pipe
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-007</u>	
Today's date: <u>3/9/20</u>		Time (Military): <u>2:28</u>	
Investigators: <u>MT + CW</u>		Form completed by: <u>MT</u>	
Temperature (°F): <u>62</u>	Rainfall (in.):	Last 24 hours:	Last 48 hours: <u>0 in</u>
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space		
<input type="checkbox"/> Ultra-Urban Residential	<input type="checkbox"/> Institutional		
<input type="checkbox"/> Suburban Residential	Other: _____		
<input type="checkbox"/> Commercial	Known Industries: _____		
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input checked="" type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>24"</u>	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input checked="" type="checkbox"/>	<input type="checkbox"/> Oily <input checked="" type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	light brown color at bottom
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-207-008</u>	
Today's date: <u>3/9/20</u>		Time (Military): <u>2:41</u>	
Investigators: <u>MT + CW</u>		Form completed by: <u>MT</u>	
Temperature (°F): <u>63</u>	Rainfall (in.):	Last 24 hours:	Last 48 hours: <u>2.1h</u>
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Other: <u>Iron</u>	<input checked="" type="checkbox"/> Circular <input checked="" type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>10"</u>	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK If Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input checked="" type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input checked="" type="checkbox"/> Corrosion	Bottom of pipe missing/worn away
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow <input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-010	
Today's date: 3/9/20		Time (Military): 3:26	
Investigators: CAW + MT		Form completed by: CAW	
Temperature (°F): 63°	Rainfall (in.): Last 24 hours:		Last 48 hours: 0 in
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 30" Depth: _____ Top Width: _____ Bottom Width: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If No, Skip to Section 5			
Flow Description (If present)	<input type="checkbox"/> Trickle <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth	1 in	In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature	10.9 C		°F	Thermometer
pH	7.98		pH Units	Test strip/Probe
Ammonia	0		mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input checked="" type="checkbox"/>	<input type="checkbox"/> Oily <input checked="" type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	Bottom of pipe
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OWT-011</u>	
Today's date: <u>3/9/20</u>		Time (Military): <u>3:08</u>	
Investigators: <u>CAW MT</u>		Form completed by: <u>CAW</u>	
Temperature (°F): <u>49 F</u>	Rainfall (in.): Last 24 hours:		Last 48 hours: <u>0 in</u>
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>36"</u> Depth: _____ Top Width: _____ Bottom Width: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth	<u>1 in</u>	In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel	<u>13.8 C</u>	S	Stop watch
Temperature	<u>7.32</u>	°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia	<u>0</u>	mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input checked="" type="checkbox"/>	<input type="checkbox"/> Oily <input checked="" type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	on bottom
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-014</u>	
Today's date: <u>3/19/20</u>		Time (Military): <u>3:38</u>	
Investigators: <u>CAW+MT</u>		Form completed by: <u>CAW</u>	
Temperature (°F): <u>60 F</u>	Rainfall (in.): Last 24 hours:	Last 48 hours: <u>0 in</u>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Other: <u>Iron</u>	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>30"</u>	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
	<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input checked="" type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	concrete headwall shifted
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	large nr rap & debris blocking outfall
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam	

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-D16</u>	
Today's date: <u>3/9/20</u>		Time (Military): <u>3:57</u>	
Investigators: <u>MT & CAW</u>		Form completed by: <u>CAW</u>	
Temperature (°F): <u>60.7</u>	Rainfall (in.): Last 24 hours:		Last 48 hours: <u>0 in</u>
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: <u>Concrete headwall & reinforcement</u>	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <u>inv</u> <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>24"</u> <u>sediment in front of pipe inlet</u> In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	<i>debris blockage & sediment in front</i>
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-019</u>	
Today's date: <u>3/9/20</u>		Time (Military): <u>4:20</u>	
Investigators: <u>CAW + MT</u>		Form completed by: <u>CAW</u>	
Temperature (°F): <u>66°</u>	Rainfall (in.): Last 24 hours:	Last 48 hours: <u>0 in</u>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>30" x 30"</u>	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Flow Description (If present)	<input type="checkbox"/> Trickle <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature	15.9 C	°F	Thermometer	
pH	7.36	pH Units	Test strip/Probe	
Ammonia	0	mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	rebar showing on bottom right corner
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-021	
Today's date: 3/9/20		Time (Military): 4:43	
Investigators: CAW+MT		Form completed by: CAW	
Temperature (°F): 66	Rainfall (in.):	Last 24 hours:	Last 48 hours: 0 in
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input checked="" type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 18"	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	half filled w/ sediment, some debris
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-024</u>	
Today's date: <u>3/10/20</u>		Time (Military): <u>10:28</u>	
Investigators: <u>MT+CU</u>		Form completed by: <u>MT</u>	
Temperature (°F): <u>54</u>	Rainfall (in.): Last 24 hours: _____ Last 48 hours: <u>drizzle that morning</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:	Photo #s:		
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>18"</u> Depth: _____ Top Width: _____ Bottom Width: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____			
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	Debris piled up at outfall
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-025	
Today's date: 3/10/20		Time (Military): 10:19	
Investigators: CAW & MT		Form completed by: CAW	
Temperature (°F): 59	Rainfall (in.):	Last 24 hours:	Last 48 hours: slight drizzle pre-testing
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: est. 18" ↳ could not measure Depth: _____ Top Width: _____ Bottom Width: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		If No, Skip to Section 5		
Flow Description (If present)	<input checked="" type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature	10.5 C	°F	Thermometer	
pH	7.76	pH Units	Test strip/Probe	
Ammonia	0	mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	could not see, sample taken using extendable dipper from behind
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-027</u>	
Today's date: <u>3/10/20</u>		Time (Military): <u>10:12</u>	
Investigators: <u>B MITCW</u>		Form completed by: <u>MT</u>	
Temperature (°F): <u>54</u>	Rainfall (in.):	Last 24 hours:	Last 48 hours: <u>drizzle that morning</u>
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input checked="" type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input checked="" type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>2' x 3'</u> In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	Debris / sediment
Deposits/Stains	<input checked="" type="checkbox"/>	<input type="checkbox"/> Oily <input checked="" type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	↓
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-029</u>	
Today's date: <u>3/10/20</u>		Time (Military): <u>10:19 am</u>	
Investigators: <u>MT + CW</u>		Form completed by: <u>MT</u>	
Temperature (°F): <u>54</u>	Rainfall (in.): Last 24 hours: _____ Last 48 hours: <u>sprinkle</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input checked="" type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ Half full with leaves. In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
<input type="checkbox"/> Flow #2	Flow depth	In	Tape measure	
	Flow width	____', ____"	Tape measure	
	Measured length	____', ____"	Tape measure	
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

INDICATOR	CHECK If Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK If Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>PP-OUT-030</u>	
Today's date: <u>3/10/20</u>		Time (Military): <u>9:52</u>	
Investigators: <u>MT+CW</u>		Form completed by: <u>MT</u>	
Temperature (°F): <u>54</u>	Rainfall (in.): Last 24 hours:	Last 48 hours: <u>drizzle that morning</u>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe <u>MH</u>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____', ____"	Ft, In	Tape measure
	Measured length	____', ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature	<u>11.1°C</u>	°F	Thermometer	
pH	<u>7.32</u>	pH Units	Test strip/Probe	
Ammonia	<u>0</u>	mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input checked="" type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input checked="" type="checkbox"/> Yellow <i>1 clear</i> <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL IDDE TEST RESULTS

VA Medical Center Perry Point

VA CAMPUS: Perry Point

TEST PERFORMED BY: GORDON/AECOM

ATTACHMENTS: NONE PHOTOS SKETCHES OTHER: Outfall Test Result Sheets

WEATHER:

TEST START DATE:

TEST END DATE:

TEST RESULTS											
Test	Dry Weather Flow	Ammonia	Total/Free Chlorine	Copper	Detergents			Temperature	pH	Turbidity	
Acceptable Range	N/A	<0.30 ppm	<0.40 ppm	<0.21 ppm	<1.0 ppm			N/A	6.5 - 8.5	<1,000 NTUs	
Outfall ID	Present (Y/N)	Results NH3-N (ppm)	Results ppm (mg/l)	Results (mg/l)	Present (Y/N)	Range (ppm)			Results (°C)	Result	Results (NTU)
						<1.0	1.0	>1.0			
PP-OUT-001	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	N	✓			19.54	7.71	301.8
PP-OUT-003	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	N	✓			21.43	8.01	350
PP-OUT-005	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N								18.19	8.53	4.8
PP-OUT-009	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
PP-OUT-012	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
PP-OUT-013	<input type="checkbox"/> Y <input type="checkbox"/> N										
PP-OUT-015	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
PP-OUT-017	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
PP-OUT-018	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
PP-OUT-020	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
PP-OUT-022	<input type="checkbox"/> Y <input type="checkbox"/> N	0	0	0	N	✓			18.78	8.49	4.8
PP-OUT-023	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
PP-OUT-026	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										
PP-OUT-028	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N										

10

2nd
6.87
for after
calibration

Prepared by:
GORDON/AECOM - 703-263-1900

(Ver. 05/2020)





OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: pp-OUT-001	
Today's date: 9/15/2020		Time (Military): 2:13	
Investigators: CAW & MT		Form completed by: CAW	
Temperature (°F): 67	Rainfall (in.): Last 24 hours: Last 48 hours: 0 in		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space		
<input type="checkbox"/> Ultra-Urban Residential	<input type="checkbox"/> Institutional		
<input type="checkbox"/> Suburban Residential	Other: _____		
<input type="checkbox"/> Commercial	Known Industries: _____		
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input checked="" type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> HDPE <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input checked="" type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 2' In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Pipe Flow?	<input type="checkbox"/> None <input type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input checked="" type="checkbox"/> Trickle			
Comments:				



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
		Flow #1 = Flat and Shallow Flow	Flow #2 = Flow of Larger Discharges	
PARAMETER		RESULT	UNIT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume	125	Liter mL	Bottle
	Time to fill	12	Sec	
	Discharge Rate (volume x time)	10.41	cf $\frac{mL}{s}$	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	___' ___"	Ft, In	Tape measure
	Measured length	___' ___"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature		19.54	°F	Thermometer
pH		7.71	pH Units	Test strip/Probe
Ammonia		0	mg/L	Test strip
Total/Free Chlorine		0	mg/l	Test strip
Copper		0	mg/l	Test strip
Detergents		0	mg/l	Probe
Comments:				



U.S. Department of Veterans Affairs

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input checked="" type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input checked="" type="checkbox"/>	See severity	<input checked="" type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight; origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input checked="" type="checkbox"/> Corrosion	bottom of pipes totally corroded
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input checked="" type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input checked="" type="checkbox"/> Other: rainbow sheen	→ stick test showed it may be bacteria, also saw some bubbles
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input checked="" type="checkbox"/>	<input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Full	

★ completely blocked by debris
 ↳ sample came from stream^{trickle} adjacent, but could be from pipe upstream if broken. Pipes in very poor condition.

Section 6: Overall Outfall IDDE Characterization

<input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (presence of two or more indicators)	<input type="checkbox"/> Suspect (one or more indicators with a severity of 3)	<input type="checkbox"/> Obvious
--	---	--	----------------------------------

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool	
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Priority 1: Immediate action is required Priority 2: Needs attention Priority 3: Regular Maintenance

Comments:



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-003	
Today's date: 9/15/2020		Time (Military): 3:07	
Investigators: CAW & MT		Form completed by: CAW	
Temperature (°F):	Rainfall (in.): Last 24 hours:	Last 48 hours: 0 in	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: ~ 12" In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Pipe Flow?	<input type="checkbox"/> None <input checked="" type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input checked="" type="checkbox"/> Trickle			
Comments:				



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
PARAMETER		RESULT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Liter
	Time to fill		Sec
	Discharge Rate (volume x time)		cfs
<input type="checkbox"/> Flow #2	Flow depth		In
	Flow width	____' ____"	Ft, In
	Measured length	____' ____"	Ft, In
	Time of travel		S
	Flow Velocity (length x time)		Ft/s
Temperature	21.43	°F	Thermometer
pH	8.01	pH Units	Test strip/Probe
Ammonia	0	mg/L	Test strip
Total/Free Chlorine	0	mg/l	Test strip
Copper	0	mg/l	Test strip
Detergents	0	mg/l	Probe
Comments:			

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input checked="" type="checkbox"/>	See severity	<input checked="" type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Difficult to access. Not visible from shore. Entrance at road is very steep and overgrown w/ vegetation.

VA



U.S. Department of Veterans Affairs

Section 6: Overall Outfall IDDE Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM	<input type="checkbox"/> Caulk dam

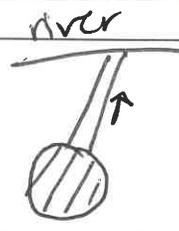
Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
		Priority 1: Immediate action is required	Priority 2: Needs attention	Priority 3: Regular Maintenance
Comments:				



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-005	
Today's date: 9/15/2020		Time (Military): 3:30 PM	
Investigators: MLT & CAW		Form completed by: CAW	
Temperature (°F): 67	Rainfall (in.): Last 24 hours: Last 48 hours:		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial <input type="checkbox"/> Ultra-Urban Residential <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Commercial		<input type="checkbox"/> Open Space <input type="checkbox"/> Institutional Other: _____ Known Industries: _____	
Comments (e.g., origin of outfall, if known): <div style="text-align: right; margin-right: 50px;"> upstream manhole  </div>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Pipe Flow?	<input type="checkbox"/> None <input type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle				
Comments: Could not locate. GPS makes it seem like it would be a manhole under the tree canopy.					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Liter
	Time to fill		Sec
	Discharge Rate (volume x time)		cfs
<input type="checkbox"/> Flow #2	Flow depth		In
	Flow width	_____ ' _____"	Ft, In
	Measured length	_____ ' _____"	Ft, In
	Time of travel		S
	Flow Velocity (length x time)		Ft/s
Temperature		°F	Thermometer
pH		pH Units	Test strip/Probe
Ammonia		mg/L	Test strip
Total/Free Chlorine		mg/l	Test strip
Copper		mg/l	Test strip
Detergents		mg/l	Probe
Comments:			

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
		Priority 1: Immediate action is required Priority 2: Needs attention Priority 3: Regular Maintenance

Comments:



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-MT-007	
Today's date: 9/15/2020		Time (Military): 3:45	
Investigators: CAW & MT		Form completed by: CAW	
Temperature (°F): 67	Rainfall (in.): Last 24 hours: Last 48 hours: 0 in		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Other: clay	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 12" In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Pipe Flow?	<input checked="" type="checkbox"/> None <input type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle			
Comments:				



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
PARAMETER		RESULT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Bottle
	Time to fill		Sec
	Discharge Rate (volume x time)		cfs
<input type="checkbox"/> Flow #2	Flow depth		Tape measure
	Flow width	____' ____"	Ft, In
	Measured length	____' ____"	Ft, In
	Time of travel		S
	Flow Velocity (length x time)		Ft/s
Temperature			°F
pH			pH Units
Ammonia			mg/L
Total/Free Chlorine			mg/l
Copper			mg/l
Detergents			mg/l
Comments:			

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM	<input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
		Priority 1: Immediate action is required	Priority 2: Needs attention	Priority 3: Regular Maintenance
Comments:				



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-009	
Today's date: 9/15/20		Time (Military): 4:05 pm / 16:45	
Investigators: MCT + CAW		Form completed by: MCT	
Temperature (°F): 67	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0 in		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space		
<input type="checkbox"/> Ultra-Urban Residential	<input type="checkbox"/> Institutional		
<input type="checkbox"/> Suburban Residential	Other: _____		
<input type="checkbox"/> Commercial	Known Industries: _____		
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Other: clay	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow: _____
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If No, Skip to Section 5		
Pipe Flow?	<input type="checkbox"/> None	<input type="checkbox"/> < 1/4 Pipe	<input type="checkbox"/> < 1/2 Pipe	<input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle

Comments: could not find pipe. within brush and large boulders. Didn't see any water present.

Found pipe w/ maintenance staff help. Clay pipe. Left side of fire hydrant deep in brush.



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
		Flow #1 = Flat and Shallow Flow	Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	_____ ' _____"	Ft, In	Tape measure
	Measured length	_____ ' _____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	
Total/Free Chlorine		mg/l	Test strip	
Copper		mg/l	Test strip	
Detergents		mg/l	Probe	
Comments:				

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool			
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM	<input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
		Priority 1: Immediate action is required	Priority 2: Needs attention	Priority 3: Regular Maintenance
Comments:				



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-012	
Today's date: 9/15/2020		Time (Military): 4:41 PM	
Investigators: CAW & MLT		Form completed by: CAW	
Temperature (°F): 67	Rainfall (in.): Last 24 hours: Last 48 hours: 0 in		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space		
<input type="checkbox"/> Ultra-Urban Residential	<input type="checkbox"/> Institutional		
<input type="checkbox"/> Suburban Residential	Other: _____		
<input type="checkbox"/> Commercial	Known Industries: _____		
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 12" In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Pipe Flow?	<input checked="" type="checkbox"/> None <input type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle			
Comments:				



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
		Flow #1 = Flat and Shallow Flow	Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	
Total/Free Chlorine		mg/l	Test strip	
Copper		mg/l	Test strip	
Detergents		mg/l	Probe	
Comments:				

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

<input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (presence of two or more indicators)	<input type="checkbox"/> Suspect (one or more indicators with a severity of 3)	<input type="checkbox"/> Obvious
--	---	--	----------------------------------

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM	<input type="checkbox"/> Caulk dam

Section 8: Recommendations

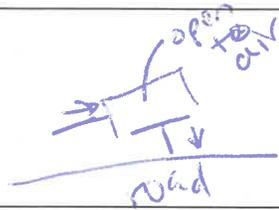
1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
	Priority 1: Immediate action is required	Priority 2: Needs attention	Priority 3: Regular Maintenance	
Comments: 				



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-013	
Today's date: 9/15/2020		Time (Military): 4:50 PM	
Investigators: CAW, MLT		Form completed by: CAW	
Temperature (°F): 67	Rainfall (in.): Last 24 hours:		Last 48 hours: 0 in
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			



Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED		
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 12" In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully		
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)					
Flow Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If No, Skip to Section 5			
Pipe Flow?	<input type="checkbox"/> None	<input type="checkbox"/> < 1/4 Pipe	<input type="checkbox"/> < 1/2 Pipe	<input type="checkbox"/> < 3/4 Pipe	<input type="checkbox"/> Full	<input type="checkbox"/> Trickle
Comments: Could not locate. potentially located upstream connection. no flow						

↳ across road

Pipe could be covered by stone revetment.



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Liter
	Time to fill		Sec
	Discharge Rate (volume x time)		cfs
<input type="checkbox"/> Flow #2	Flow depth		In
	Flow width	____' ____"	Ft, In
	Measured length	____' ____"	Ft, In
	Time of travel		S
	Flow Velocity (length x time)		Ft/s
Temperature		°F	Thermometer
pH		pH Units	Test strip/Probe
Ammonia		mg/L	Test strip
Total/Free Chlorine		mg/l	Test strip
Copper		mg/l	Test strip
Detergents		mg/l	Probe
Comments:			



Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input checked="" type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input checked="" type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

some debris leaf.

Section 6: Overall Outfall IDDE Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
	Priority 1: Immediate action is required	Priority 2: Needs attention Priority 3: Regular Maintenance

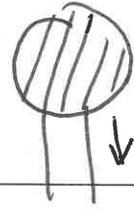
Comments:



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT -0104	
Today's date: 9/10/20		Time (Military): 7:45 am	
Investigators: MLT + CW		Form completed by: MLT	
Temperature (°F): 51	Rainfall (in.): Last 24 hours: Last 48 hours: 0 in		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial <input type="checkbox"/> Ultra-Urban Residential <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Commercial		<input type="checkbox"/> Open Space <input type="checkbox"/> Institutional Other: _____ Known Industries: _____	
Comments (e.g., origin of outfall, if known): 			



Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Pipe Flow?	<input type="checkbox"/> None <input type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle				
Comments: Outfall not found. Found ^{grate} manhole. no flow. Crushed pipe in grate manhole. Severly corroded on bottom of pipe. Pipe outfall probably under stone revetment.					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
		Flow #1 = Flat and Shallow Flow	Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	_____ ' _____ "	Ft, In	Tape measure
	Measured length	_____ ' _____ "	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	
Total/Free Chlorine		mg/l	Test strip	
Copper		mg/l	Test strip	
Detergents		mg/l	Probe	
Comments:				

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input checked="" type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input checked="" type="checkbox"/> Corrosion	<i>Bottom missing.</i>
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

No damage

Section 6: Overall Outfall IDDE Characterization

<input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (presence of two or more indicators)	<input type="checkbox"/> Suspect (one or more indicators with a severity of 3)	<input type="checkbox"/> Obvious
--	---	--	----------------------------------

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool	
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

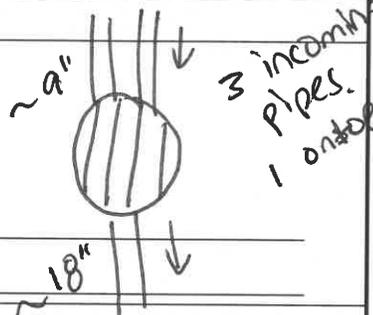
Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
	Priority 1: Immediate action is required	Priority 2: Needs attention	Priority 3: Regular Maintenance

Comments:

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-017	
Today's date: 9/10/20		Time (Military): 8:15	
Investigators: CAW + MCT		Form completed by: MCT	
Temperature (°F): 51	Rainfall (in.): Last 24 hours:		Last 48 hours: 0 in
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial <input type="checkbox"/> Ultra-Urban Residential <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Commercial		<input type="checkbox"/> Open Space <input type="checkbox"/> Institutional Other: _____ Known Industries: _____	
			
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input checked="" type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: ~12" ~18"	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<i>If No, Skip to Section 5</i>			
Pipe Flow?	<input type="checkbox"/> None	<input type="checkbox"/> < 1/4 Pipe	<input type="checkbox"/> < 1/2 Pipe	<input type="checkbox"/> < 3/4 Pipe	<input type="checkbox"/> Full <input type="checkbox"/> Trickle
Comments: Found grate manhole upstream, no flow. Standing at bottom of manhole. Some plant debris Pipe outfall probably under stone retentment.					

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
		Flow #1 = Flat and Shallow Flow	Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	
Total/Free Chlorine		mg/l	Test strip	
Copper		mg/l	Test strip	
Detergents		mg/l	Probe	
Comments:				

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	A little plant debris.
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Others couldn't see from grate.

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool	
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
Priority 1: Immediate action is required Priority 2: Needs attention Priority 3: Regular Maintenance		
Comments: 		



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-018	
Today's date: 9/16/20		Time (Military): 8:00 am	
Investigators: MLT + CAW		Form completed by: MLT	
Temperature (°F): 51	Rainfall (in.): Last 24 hours:		Last 48 hours: 0 in
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 12"	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input checked="" type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If No, Skip to Section 5		
Pipe Flow?	<input type="checkbox"/> None <input type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle				
Comments: Fully blocked by debris and sediment. Driftwood at outlet in front of					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Liter
	Time to fill		Sec
	Discharge Rate (volume x time)		cfs
<input type="checkbox"/> Flow #2	Flow depth		In
	Flow width	____' ____"	Ft, In
	Measured length	____' ____"	Ft, In
	Time of travel		S
	Flow Velocity (length x time)		Ft/s
Temperature		°F	Thermometer
pH		pH Units	Test strip/Probe
Ammonia		mg/L	Test strip
Total/Free Chlorine		mg/l	Test strip
Copper		mg/l	Test strip
Detergents		mg/l	Probe
Comments:			

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

No damage seen.

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
Priority 1: Immediate action is required Priority 2: Needs attention Priority 3: Regular Maintenance		

Comments:



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-020	
Today's date: 9/16/20		Time (Military): 8:39 am	
Investigators: MLT + CAW		Form completed by: MLT	
Temperature (°F): 51	Rainfall (in.): Last 24 hours: Last 48 hours: 0 in		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____ white PVC	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 12"	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Pipe Flow?	<input type="checkbox"/> None	<input type="checkbox"/> < 1/4 Pipe	<input type="checkbox"/> < 1/2 Pipe	<input type="checkbox"/> < 3/4 Pipe	<input type="checkbox"/> Full <input type="checkbox"/> Trickle
Comments: Looking through pipe, you could see light and it crests. water like flow would flow back					

~~water~~ → outfall

water river



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Liter
	Time to fill		Sec
	Discharge Rate (volume x time)		cfs
<input type="checkbox"/> Flow #2	Flow depth		In
	Flow width	_____ ' _____"	Ft, In
	Measured length	_____ ' _____"	Ft, In
	Time of travel		S
	Flow Velocity (length x time)		Ft/s
Temperature		°F	Thermometer
pH		pH Units	Test strip/Probe
Ammonia		mg/L	Test strip
Total/Free Chlorine		mg/l	Test strip
Copper		mg/l	Test strip
Detergents		mg/l	Probe
Comments:			

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Priority 1: Immediate action is required

Priority 2: Needs attention

Priority 3: Regular Maintenance

Comments:



U.S. Department of Veterans Affairs



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-022	
Today's date: 9/16/20		Time (Military): 11:18	
Investigators: MLT + CAW		Form completed by: MLT	
Temperature (°F): 66	Rainfall (in.): Last 24 hours:		Last 48 hours: 0 in
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<i>If No, Skip to Section 5</i>		
Pipe Flow?	<input type="checkbox"/> None <input type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input checked="" type="checkbox"/> Trickle				
Comments: Very difficult to get to outfall. Slow trickle of water. Pipe along rock wall in line w/ bldg 82H sign.					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
		Flow #1 = Flat and Shallow Flow	Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature	18.78	°F	Thermometer	
pH	6.87-8.49	pH Units	Test strip/Probe	
Ammonia	0	mg/L	Test strip	
Total/Free Chlorine	0	mg/l	Test strip	
Copper	0	mg/l	Test strip	
Detergents	0	mg/l	Probe	
Comments:				



U.S. Department of Veterans Affairs

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input checked="" type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input checked="" type="checkbox"/> Corrosion	<i>Top of pipe not existent.</i>
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
Priority 1: Immediate action is required Priority 2: Needs attention Priority 3: Regular Maintenance		
Comments:		



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-023	
Today's date: 9/10/20		Time (Military): 8:51 am	
Investigators: MLT + CAW		Form completed by: MLT	
Temperature (°F): 55	Rainfall (in.):	Last 24 hours:	Last 48 hours: 0 in
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:			
Photo #s:			
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 9"	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Pipe Flow?	<input type="checkbox"/> None	<input type="checkbox"/> < 1/4 Pipe	<input type="checkbox"/> < 1/2 Pipe	<input type="checkbox"/> < 3/4 Pipe	<input type="checkbox"/> Full <input type="checkbox"/> Trickle
Comments: Some corrosion on bottom of pipe. Pipe within a concrete headwall visible from top of bank.					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Liter
	Time to fill		Sec
	Discharge Rate (volume x time)		cfs
<input type="checkbox"/> Flow #2	Flow depth		In
	Flow width	____' ____"	Ft, In
	Measured length	____' ____"	Ft, In
	Time of travel		S
	Flow Velocity (length x time)		Ft/s
Temperature		°F	Thermometer
pH		pH Units	Test strip/Probe
Ammonia		mg/L	Test strip
Total/Free Chlorine		mg/l	Test strip
Copper		mg/l	Test strip
Detergents		mg/l	Probe
Comments:			



Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input checked="" type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input checked="" type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

Section 6: Overall Outfall IDDE Characterization

<input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (presence of two or more indicators)	<input type="checkbox"/> Suspect (one or more indicators with a severity of 3)	<input type="checkbox"/> Obvious
--	---	--	----------------------------------

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool	
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
	Priority 1: Immediate action is required	Priority 2: Needs attention	Priority 3: Regular Maintenance

Comments:

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-026	
Today's date: 9/15/20		Time (Military): 17:24	
Investigators: MLT + CAW		Form completed by: MLT	
Temperature (°F): 66	Rainfall (in.): Last 24 hours: 0.1 Last 48 hours:		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 2'	In Water: low tide <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Pipe Flow?	<input type="checkbox"/> None <input type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle				
Comments: Pipe is affected by tidal water. Plant debris stuck to the metal grate covering pipe opening.					

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges		
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
	Discharge Rate (volume x time)		cfs	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Flow Velocity (length x time)		Ft/s	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	
Total/Free Chlorine		mg/l	Test strip	
Copper		mg/l	Test strip	
Detergents		mg/l	Probe	
Comments:				

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	Metal grate across pipe opening has excessive suds seaweed.
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	

VA



U.S. Department of Veterans Affairs

Section 6: Overall Outfall IDDE Characterization

<input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (presence of two or more indicators)	<input type="checkbox"/> Suspect (one or more indicators with a severity of 3)	<input type="checkbox"/> Obvious
--	---	--	----------------------------------

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool		
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type:	<input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

Priority 1: Immediate action is required

Priority 2: Needs attention

Priority 3: Regular Maintenance

Comments:



OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: PP-OUT-028	
Today's date: 9/16/20		Time (Military): 9:29 am	
Investigators: MCT +CAW		Form completed by: MCT	
Temperature (°F): 57	Rainfall (in.): Last 24 hours: Last 48 hours: 0 in		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space		
<input type="checkbox"/> Ultra-Urban Residential	<input type="checkbox"/> Institutional		
<input type="checkbox"/> Suburban Residential	Other: _____		
<input type="checkbox"/> Commercial	Known Industries: _____		
Comments (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input checked="" type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: ~18"	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> V-shaped <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	Water Depth: Height of Invert to Steam Flow:
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Pipe Flow?	<input type="checkbox"/> None <input type="checkbox"/> < 1/4 Pipe <input type="checkbox"/> < 1/2 Pipe <input type="checkbox"/> < 3/4 Pipe <input type="checkbox"/> Full <input type="checkbox"/> Trickle				
Comments: Didn't find outfall. Thick/heavy vegetation. Found grate upstream. No flow. Some standing water at the bottom.					



Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
Flow #1 = Flat and Shallow Flow		Flow #2 = Flow of Larger Discharges	
PARAMETER	RESULT	UNIT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Liter
	Time to fill		Sec
	Discharge Rate (volume x time)		cfs
<input type="checkbox"/> Flow #2	Flow depth		In
	Flow width	____' ____"	Ft, In
	Measured length	____' ____"	Ft, In
	Time of travel		S
	Flow Velocity (length x time)		Ft/s
Temperature		°F	Thermometer
pH		pH Units	Test strip/Probe
Ammonia		mg/L	Test strip
Total/Free Chlorine		mg/l	Test strip
Copper		mg/l	Test strip
Detergents		mg/l	Probe
Comments:			

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Comments:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Sediment	<input type="checkbox"/>	<input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Full	



U.S. Department of Veterans Affairs

Section 6: Overall Outfall IDDE Characterization

Unlikely
 Potential (presence of two or more indicators)
 Suspect (one or more indicators with a severity of 3)
 Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool	
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Recommendations

1. Investigate Illicit Discharge	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Infrastructure Repairs Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Debris Removal Needed	Corrective Action _____	Priority: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
		Priority 1: Immediate action is required Priority 2: Needs attention Priority 3: Regular Maintenance

Comments:

Outfall Maintenance List



Department of Veterans Affairs

Perry Point

March 2020

Prepared by:
GORDON/AECOM – 703-263-1900

(Ver. 02/2020)



OUTFALL ANNUAL REQUIRED MAINTENANCE SUMMARY

VA CAMPUS: Perry Point

MAINTENANCE DIRECTOR: _____

PHONE NO. : _____

Narrative: The schedule has been prepared to provide a summary of required maintenance activities identified at the last inspection. Required maintenance activities should be completed within a reasonable time frame before the next inspection anticipated Spring 2021. See attached for site pictures.

Outfall-ID	Outfall Location	IDDE Test (MM/DD/YY)	Required Maintenance Activity	Status
				Complete
PP-OUT-002	Near Bldg. 97	03/09/20	Remove debris from inside outfall pipe.	<input type="checkbox"/>
PP-OUT-004	Manhole near Bldg. 20	03/10/20	Remove sediment build up and manmade objects within manhole.	<input type="checkbox"/>
PP-OUT-006	Near Bldg. 20	03/09/20	Remove vegetation and plant debris from outfall.	<input type="checkbox"/>
PP-OUT-008	Near Village, Along Ave A	03/09/20	No maintenance required.	<input type="checkbox"/>
PP-OUT-010	Near Bldg. 504	03/09/20	Move driftwood away from the outfall.	<input type="checkbox"/>
PP-OUT-011	Near Bldg. 504	03/09/20	Move driftwood away from the outfall.	<input type="checkbox"/>
PP-OUT-014	Along Ave A	03/09/20	Remove debris and logs from the outfall.	<input type="checkbox"/>
PP-OUT-015	Near Bldg. 311	03/09/20	Remove sediment and debris from the outfall.	<input type="checkbox"/>
PP-OUT-021	Near Bldg. 82H	03/09/20	Remove plant debris from the outfall.	<input type="checkbox"/>
PP-OUT-024	Near Park at the Boat Ramp	03/10/20	Remove debris and logs from the outfall.	<input type="checkbox"/>
PP-OUT-027	Near Boat Ramp	03/10/20	Remove plant debris and concrete block from the outfall.	<input type="checkbox"/>
PP-OUT-029	Near Truck Entrance (Outside of the Property)	03/10/20	Remove plant debris from the outfall.	<input type="checkbox"/>

PP-OUT-002



Observation: Debris inside outfall pipe.
Required: Remove debris from inside outfall pipe.



Observation: Debris inside outfall pipe.
Required: Remove debris from inside outfall pipe.

PP-OUT-004



Observation: There is accumulated sediment in the manhole structure.
Required: Remove sediment build up within the manhole structure.



Observation: There is accumulated sediment and manmade objects in the manhole structure.
Required: Remove sediment and manmade objects from the manhole structure.



Observation: Requires assistance from the VA to open the manhole.

PP-OUT-006



Observation: Outfall has a buildup of leaves which makes it difficult to test if there is water flow.

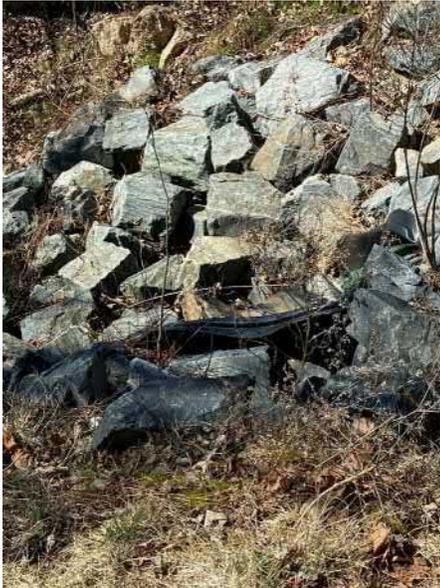
Required: Remove vegetation and plant debris from the outfall.



Observation: Outfall has a buildup of leaves which makes it difficult to test if there is water flow.

Required: Remove vegetation and plant debris from the outfall.

PP-OUT-006A



Observation: No maintenance recommended.



Observation: No maintenance recommended.

Prepared by:
GORDON/AECOM – 703-263-1900

(Ver. 02/2020)

PP-OUT-008



Observation: Corrosion visible inside pipe. Bottom is missing.
Recommended: Replace pipe.



Observation: Bottom of pipe missing due to corrosion.
Recommended: Replace pipe.



Observation: Side view of pipe. Bottom of pipe missing due to corrosion.
Recommended: Replace pipe.



Observation: Bottom of pipe missing due to corrosion.
Recommended: Replace pipe.

PP-OUT-010



Observation: View of the top of the outfall pipe. A large piece of driftwood is in front of the outfall.

Recommended: Move driftwood away from the outfall.



Observation: A large piece of driftwood is in front of the outfall.

Recommended: Move driftwood away from the outfall.



Observation: A large piece of driftwood is in front of the outfall.

Recommended: Move driftwood away from the outfall.

PP-OUT-011



Observation: A large piece of driftwood is in front of the outfall.

Recommended: Move driftwood away from the outfall.

Prepared by:
GORDON/AECOM – 703-263-1900

(Ver. 02/2020)

PP-OUT-014



Observation: Outfall has debris buildup and logs blocking access for testing.
Required: Remove debris and logs from the outfall.



Observation: Outfall has debris buildup and logs blocking access for testing.
Required: Remove debris and logs from the outfall.

PP-OUT-015



Observation: Outfall has accumulated sediment and debris buildup. The outfall is affected by tides where high tide is within the outfall pipe.
Required: Remove sediment and debris from the outfall.

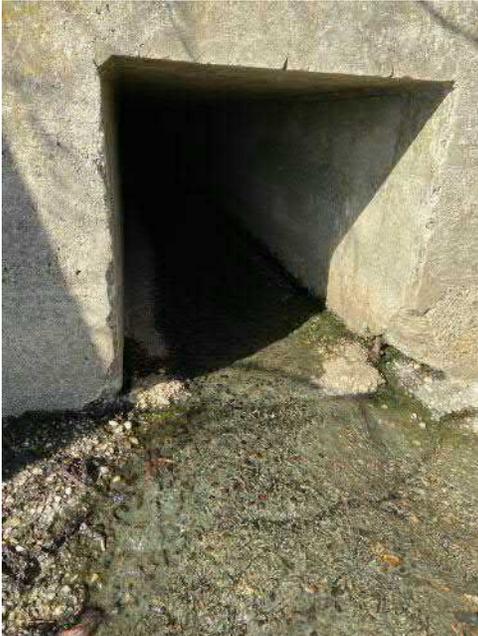


Observation: Outfall has accumulated sediment and debris buildup. The outfall is affected by tides where high tide is within the outfall pipe.
Required: Remove sediment and debris from the outfall.



Observation: Outfall has accumulated sediment and debris buildup. The outfall is affected by tides where high tide is within the outfall pipe.
Required: Remove sediment and debris from the outfall.

PP-OUT-019



Observation: No maintenance recommended.

Prepared by:
GORDON/AECOM – 703-263-1900

(Ver. 02/2020)

PP-OUT-021



Observation: There is plant debris accumulation within the outfall pipe.

Recommended: Remove plant debris from the outfall.



Observation: There is plant debris accumulation within the outfall pipe.

Recommended: Remove plant debris from the outfall.

PP-OUT-024



Observation: Plant debris and logs are blocking access to the outfall. Unable to get closer to the outfall.

Required: Remove debris and logs from the outfall.

Prepared by:
GORDON/AECOM – 703-263-1900

(Ver. 02/2020)

PP-OUT-025



Observation: No maintenance recommended.

Prepared by:
GORDON/AECOM – 703-263-1900

(Ver. 02/2020)

PP-OUT-027



Observation: Plant debris and a manmade concrete block are in the outfall pipe.
Recommended: Remove plant debris and concrete block from the outfall.



Observation: Plant debris and a manmade concrete block are in the outfall pipe.
Recommended: Remove plant debris and concrete block from the outfall.

PP-OUT-029



Observation: Plant debris build up is blocking access for testing.

Required: Remove plant debris from the outfall.

Prepared by:
GORDON/AECOM – 703-263-1900

(Ver. 02/2020)

PP-OUT-030



Observation: Difficult to access due to plant debris and steep slopes.

Recommended: Remove plant debris.

Prepared by:
GORDON/AECOM – 703-263-1900

(Ver. 02/2020)

Outfall Maintenance List



Department of Veterans Affairs

Perry Point

September 2020

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020



OUTFALL ANNUAL REQUIRED MAINTENANCE SUMMARY

VA CAMPUS: Perry Point

MAINTENANCE DIRECTOR: _____

PHONE NO. : _____

Narrative: The schedule has been prepared to provide a summary of required maintenance activities identified at the last inspection. Required maintenance activities should be completed within a reasonable time frame before the next inspection anticipated Spring 2022. See attached for site pictures

Outfall-ID	Outfall Location	IDDE Test (MM/DD/YY)	Required Maintenance Activity	Status
				Complete
PP-OUT-001	Near Electric Substation Driveway	09/15/20	Remove debris from outfall and investigate seepage along pipes.	<input type="checkbox"/>
PP-OUT-005	Manhole near Bldg. 20 along Ave A	09/15/20	No evidence that this standing water is causing harm to the outfall. No maintenance recommended.	<input type="checkbox"/>
PP-OUT-009	Along Ave A near the mansion	09/15/20	Trim brush to allow access to the outfall.	<input type="checkbox"/>
PP-OUT-016	Near Bldg. 311	09/16/20	Stabilize pipe.	<input type="checkbox"/>
PP-OUT-018	Along Ave A	09/16/20	Clear debris and sediment from outfall to allow access for testing.	<input type="checkbox"/>
PP-OUT-026	Near Boat Ramp	09/16/20	Remove plant debris from the wire screen.	<input type="checkbox"/>
				<input type="checkbox"/>

PP-OUT-001

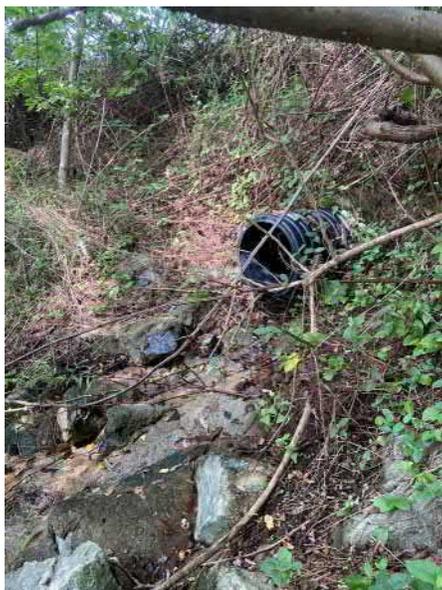


Observation: Pipes appear crushed/eroded slightly upstream of outfall. Water was flowing alongside of double pipes on the left side of the double pipes. Pipes appear to be full of debris.
Recommended: Remove debris from outfall and investigate seepage along pipes.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

PP-OUT-003



Observation: Outfall was difficult to get close to due to plant debris.

Recommended: Trim brush to allow access to the outfall.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

PP-OUT-005



Observation: Standing water in manhole below outfall pipe.
Recommended: No maintenance recommended.

PP-OUT-007



Observation: Difficult to access due to steep slopes.
Recommended: No maintenance recommended.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

PP-OUT-009



Observation: Outfall very difficult to find.
Upstream manhole used for testing.



Observation: Outfall pipe under brambles.
Barely can see it.
Required: Trim brush to allow access to the outfall.



Observation: Outfall is through the clearing
down the bank covered in brambles on the left
side of the hydrant.

PP-OUT-010



Observation: No maintenance required.



Observation: No maintenance required.

PP-OUT-013



Observation: Could not locate outfall. Outfall is potentially underneath the shoreline revetment. Upstream invert was used for testing.
Recommended: No maintenance recommended.



Observation: Could not locate outfall. Outfall is potentially underneath the shoreline revetment. Upstream invert was used for testing.
Recommended: No maintenance recommended.

PP-OUT-016



Observation: Could not locate outfall. Outfall is potentially underneath the shoreline revetment. Upstream manhole was used for testing. Pipe partially collapsed. Flow can pass through. Road appears to be sunk down over top of the pipe.
Recommended: Stabilize pipe.

PP-OUT-017



Observation: Could not locate outfall. Outfall is potentially underneath shoreline revetment. Upstream manhole was used for testing. Recommended: No maintenance recommended.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

PP-OUT-018



Observation: Outfall completely blocked by sediment, debris, and driftwood. Outfall is the semi-circle in the concrete block on the right side.

Required: Clear debris and sediment from outfall to allow for testing.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

PP-OUT-020



Observation: Difficult to access due to thick vegetation.
Recommended: Trim brush to allow access to the outfall.



Observation: Difficult to access due to thick vegetation.
Recommended: Trim brush to allow access to the outfall.



Observation: Clear inside of pipe.
Recommended: No maintenance recommended to the pipe itself.



Observation: Upstream inlet covered in grass.
Recommended: No maintenance recommended to the upstream inlet.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

PP-OUT-023



Observation: Difficult to access due to steep slopes.
Recommended: No maintenance recommended.



Observation: Corrosion on bottom of the pipe.
Recommended: No maintenance recommended.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

PP-OUT-024



Observation: Difficult to access due to steep slopes and thick vegetation. Outfall is the corroded pipe above the rock stack under the brush.
Recommended: Trim brush to allow access to the outfall.



Observation: Difficult to access due to steep slopes and thick vegetation. Outfall is the corroded pipe above the rock stack under the brush.
Recommended: Trim brush to allow access to the outfall.

PP-OUT-026



Observation: Outfall affected by tides where high tide is within the outfall pipe itself. Wire screen is covered in plant material.

Required: Remove plant debris from the wire screen.

Prepared by:
GORDON/AECOM – 703-263-1900

Issued: September 2020

PP-OUT-028



Observation: Could not locate outfall. Outfall located in thick vegetation. Upstream grate manhole used for testing.
Recommended: No maintenance recommended for grate manhole. Trim brush to allow access outfall.



Observation: Could not locate outfall. Outfall located in thick vegetation. Upstream grate manhole used for testing.
Recommended: No maintenance recommended for grate manhole. Trim brush to allow access outfall.



J – MCM #4 – CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

- Construction complaint tracker
- Erosion and sediment control (grading) permit and NOV tracker



K – MCM #5 – POST CONSTRUCTION STORMWATER MANAGEMENT

- BMP inspection and maintenance guidance document

**BEST MANAGEMENT PRACTICE (BMP) MAINTENANCE AND TRIENNIAL
INSPECTIONS
LOCH RAVEN AND PERRY POINT VA MEDICAL CENTERS
ATTACHMENT C**

1. PURPOSE AND AUTHORITY

The purpose of this document is to establish the process for conducting regular maintenance and triennial inspections of the stormwater management best management practices (BMPs) at both the Loch Raven and Perry Point Veterans Affairs Maryland Health Care System (VAMHCS) facilities, which is a component of the Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4). This process must be followed by any VA employee who is responsible for maintenance and inspection of the BMPs at the Loch Raven and Perry Point VA Medical Centers.

2. PROCEDURES

a. Maintenance and Inspection Frequency

1) For each BMP type, there are two (2) sets of checklists: one (1) for maintenance activities and one (1) for triennial inspection activities. The required inspection and maintenance items for each BMP type are outlined in the latest version of the BMP Maintenance and Inspection Records for Department of Veteran Affairs Maryland Health Care System (“the Checklists”). These checklists can be requested from the Loch Raven or Perry Point Projects Section Supervisors within the Facilities and Engineering Service.

2) Maintenance must be performed during time intervals specified for each BMP type in the latest version of “the Checklists”. These time intervals are variable for each BMP type and range from monthly to annually, and after a large storm event.

3) All BMPs must be inspected every three (3) years to ensure that BMPs are functional as designed.

b. Maintenance and Inspection Locations

1) Refer to the latest version of BMP Location Map for BMP locations.

2) An electronic version of the BMP map can be requested from the Loch Raven or Perry Point Projects Section Supervisors, within the Facilities and Engineering Service.

3) A unique identification number has been assigned to each BMP.

c. Maintenance Procedures

1) For each individual BMP, review the itemized maintenance activities and record any observations or maintenance activity on the appropriate BMP maintenance checklist. The maintenance should proceed as following steps:

- i. *Fill out Record general information such as BMP ID, maintenance personnel, date, time, and weather on top of the maintenance checklist.*
- ii. *Follow through with the maintenance checklist instructions by going through each component and addressing the maintenance requirements.*
- iii. *If a maintenance requirement is not performed, provide a brief reason as to why the maintenance activity was not performed in the comments section of the checklist. Use the blank "BMP Maintenance Additional Comments Attachment Form" provided in "the Checklists" if additional room is needed for the comments. Maintenance activities should be performed for deficient items as soon as possible to maintain operation of the facility.*
- iv. *Upon completion of the maintenance activities for each BMP, record the performed maintenance on the "BMP maintenance schedule" for each BMP type provided in "the Checklists".*

d. Inspection Procedures

1) For each individual BMP, review the itemized triennial inspection activities and record observations on the appropriate BMP triennial inspection checklist. The latest versions of the BMP triennial inspection checklists are provided in "the Checklists". The inspection should proceed as following steps:

- i. *Fill out Records general information such as BMP ID, inspector name, date, time, and weather on top of the maintenance checklist. Additionally, check the maintenance record.*
- ii. *Follow through with each inspection item. Assess the condition of the item and check "acceptable" or "deficient" under the status column for the inspection item. If an item is "deficient," check the applicable remedial actions required for the inspection item. If not listed, describe a remedial action in the provided space on the checklist. Use the blank "BMP Triennial Inspection Additional Comments Attachment Form" if additional room is needed for suggested remedial actions or comments and observations.*
- iii. *After completion of the checklist for each BMP, mark the overall inspection results on the first page of the checklist. If any of the inspection items are deficient, the overall BMP should be assessed as failed.*
- iv. *A remedial action due date must be set for any facility that has failed an inspection. A follow up reinspection after the due date must be performed to confirm the deficiencies have been resolved.*
- v. *The same inspection form should be used during the reinspection. During reinspection, if condition is corrected, check "resolved" under the status column.*
- vi. *Upon completion of the inspection and subsequent reinspection for each BMP, record the results and the dates on the "BMP triennial inspection schedule" for each BMP type provided in "the Checklists".*

e. Addressing Maintenance Items

Based on each BMP type and maintenance interval, specific maintenance activities are provided in each checklist. The maintenance personnel should have general understanding of the BMP components. The maintenance personnel should obtain a copy of the approved BMP plans for each BMP from the VA office of engineering, and be familiar with general design components such as planting, drainage structures, manufacturer information, etc.

f. Maintenance and Inspection Supplies

1) Maintenance equipment could include, as appropriate:

- Maintenance Forms (see “the Checklists”)
- Camera or camera-capable cell phone
- Measuring tape
- Manhole cover hook
- Trash bag
- Ground tools, i.e. shovel, pickaxe, rake, tiller
- Mulch (See specifications on approved plans)
- Plants (See plantings on approved plans)
- Grass seed (See seed mix on approved plans)
- Media, riprap, gravel (See specifications on approved plans)

2) Inspection equipment could include, as appropriate:

- Triennial Inspection Forms (see “the Checklists”)
- Previous maintenance records
- Camera or camera-capable cell phone
- Measuring tape
- Manhole cover hook
- Approved design drawings

3) Personal Protective Equipment (PPE) should include:

- Gloves
- First aid kit
- Safety vest
- Safety-toed boots
- Long sleeves
- Hard hat

g. Safety Considerations

1) Always wear safety-toed boots to protect feet from possible crushing injuries while handling the manhole covers.

2) Use proper lifting techniques when removing manhole covers and moving heavy equipment and supplies to prevent back injury.

- 3) Use extreme caution when working over open manhole structure; no part of your body should enter the plane created by the manhole opening as this would constitute confined space entry.
- 4) DO NOT enter manhole or outfall structures under any conditions.
- 5) Remain vigilant when working on banks of open water bodies.
- 6) DO NOT allow any suspected contaminants in the BMPs to contact skin. If contact should occur, rinse skin immediately with water and seek medical attention.
- 7) Dispose of all trash, earth cuttings, and debris properly.
- 8) Close all fences and access points to BMPs including opened manholes covers/inlet grates after inspection and maintenance.

3. ASSIGNMENT OF RESPONSIBILITIES

a. **FES Assistant Chiefs, Maintenance and Operations (M&O), Loch Raven VAMC and Perry Point VAMC.** The FES Assistant Chiefs, M&O at Loch Raven and Perry Point will:

- 1) Manage and assign the maintenance personnel and inspectors and responsible parties for performing maintenance and inspection.
- 2) Review the maintenance and inspections and determine that the BMPs have been satisfactorily maintained and are fully functional as intended.
- 3) Request updated BMP maps and/or checklists from the FES Associate Chiefs, Projects, Perry Point VAMC and Loch Raven VAMCs.
- 4) Provide updated BMP maps and/or checklists if applicable to the Perry Point Grounds Supervisor and Perry Point Village Enhanced Use Lease (EUL) Site Manager (Ralston).

b. **FES Associate Chiefs, Projects Sections at Loch Raven VAMC and Perry Point VAMC.** The FES Associate Chiefs of the Projects Sections are responsible for:

- 1) Updating the MS4 BMP maps for the respective sites.

c. **VAMHCS GEMS Manager:** The GEMS manager will review the maintenance and inspections and determine that the BMP have been satisfactorily maintained and are fully functional as designed.

4. DEFINITIONS

a. **Best Management Practice (BMP)** - A structural, vegetative, or procedural practice designed to eliminate the negative impacts of stormwater runoff. Stormwater management BMPs control flooding, reduce erosion, and improve water quality and quantity and reduce downstream erosion impacts.

b. Large Storm Event - any rainfall event of 10-year storm, or greater, which correlates to approximately 5.1 inches of rain in 24 hours.

4. REFERENCES

Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4), General Discharge Permit No. 13-SF-5501

**L – MCM #6 – POLLUTION PREVENTION AND GOOD HOUSEKEEPING**

- Good housekeeping guidance document

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING
LOCH RAVEN VA MEDICAL CENTER
ATTACHMENT B1**

PURPOSE AND AUTHORITY

The purpose of this attachment is to establish written procedures to minimize or prevent pollutant discharge via stormwater runoff. These Pollution Prevention and Good Housekeeping procedures are required under Part IV.F of the Maryland General Permit for Discharges from State and Federal Municipal Separate Storm Sewer Systems (MS4s) (herein referred to as the MS4 permit). The procedures included in this document must be followed by any VA employee or contractor who works at the Loch Raven Veterans Administration Medical Center (VAMC).

1. JUSTIFICATION

The Loch Raven VA Medical Center offers inpatient, outpatient, and primary care services, and specializes in providing rehabilitation and post-acute care for patients in the VA Maryland Health Care System. Loch Raven also provides hospice and nursing home care to Maryland's Veterans.

Loch Raven is comprised primarily of a large, centrally located inpatient residence and rehabilitation building, a community-based outpatient clinic, a research building, the FMS/Police Department building, and two ancillary buildings. Loch Raven operations use diesel fuel for heating and running emergency generators and hydraulic fluid associated with the elevators. The facility is not involved in any oil production, drilling, or work over operations.

Loch Raven is currently a small quantity generator but is in the process of switching to large quantity generator operations with the opening of the Pharmacy.

A list of potential pollutant sources can be found below.

Table 1: Loch Raven Potential Pollutant Sources	
Location	Pollutant Sources
Building 2	<ul style="list-style-type: none">• Diesel
Site-wide parking lots and roads	<ul style="list-style-type: none">• Gasoline, motor oil, sediment
CLC Basement Room G12	<ul style="list-style-type: none">• Hazardous Waste
Emergency Generator	<ul style="list-style-type: none">• Diesel

Building 4 Warehouse	<ul style="list-style-type: none"> • Pesticides
CBOC Soiled Terminal Room 1B-35	<ul style="list-style-type: none"> • Hazardous Waste

2. PROCEDURES

The following sections offer an overview of good housekeeping procedures for each potential pollutant source.

a. Road, Street, and Parking Lot Maintenance.

(1) Protect storm drain inlets near work areas using covers, filters, absorbent booms, etc. Do not remove inlet protection until all work has been completed, including final waste removal or sweeping.

(2) Remove leaves, trash, excess sand/salt, or other debris from storm drain inlets and paved surfaces when observed during maintenance work on roads and parking lots.

(3) Where dumpsters are present, ensure that doors are closed and there is no evidence of leaks. Report leaking dumpsters to the disposal company identified on the dumpster.

(4) Schedule paving, painting, and other outdoor maintenance projects for dry weather days only.

(5) When maintenance requires earth-disturbing activities, use appropriate erosion and sediment controls to prevent pollutants from entering storm drains.

(6) Sweep or vacuum sediment and debris from work areas before each rain event and the conclusion of maintenance activities

(7) Never hose down streets, parking lots, or work areas.

(8) Do not dump materials into storm drains.

b. Landscaping and Pesticide/Herbicide Application.

(1) Follow label directions to apply, store, handle, mix, recycle, and dispose of chemicals and empty containers.

(2) Never perform transfer, mixing, or disposal of materials near storm drains.

(3) Always keep spill kits nearby when transferring, mixing, or disposing of materials.

(4) Do not apply landscape chemicals to frozen ground.

(5) Keep application equipment clean and free of chemical buildup.

c. **Winter Road Maintenance.**

(1) Minimize spills by not overloading salt and sand spreading trucks and equipment.

(2) Use the least amount of sand and salt necessary to achieve safe walking/driving conditions.

(3) Establish snow storage areas that are not located near storm drains. Ideal snow storage areas are located on pervious areas where snow melt can infiltrate.

(4) Sweep excess salt from paved areas after the last snow.

d. **Equipment and Vehicle Storage**

(1) Store leaking vehicles or equipment indoors or under cover. If leaking vehicles or equipment cannot be moved under cover, use drip pans to contain the leak, and check fluid levels regularly.

(2) Always clean up leaks and spills when they are observed. Immediately remove absorbent materials used for spill cleanup. Report large spills to the Baltimore City Fire Department and Green Environmental Management System (GEMS).

(3) Never hose down equipment and vehicles near storm drains.

e. **Materials Storage**

(1) Store materials indoors or under cover. Use secondary containment for liquids, and check for leaks regularly.

(2) Material storage containers should be compatible with contents and clearly labeled.

(3) Limit quantities of stored materials to the extent possible to meet usage needs.

(4) Salt and sand piles should be fully under cover. Properly push back piles and use berms to prevent contact with stormwater.

(5) Place spill kits near liquid materials storage areas. Ensure spill kits are adequately stocked, especially after contents are used during spill response activities.

(6) Always clean up leaks and spills when they are observed. Report large spills to the Baltimore City Fire Department and the GEMS per the VAMHCS Emergency Operations Plan and the Loch Raven Integrated Contingency Plan (ICP).

(7) Never hose down spilled material near storm drains.

f. **Waste Storage**

(1) Pick up loose trash and dispose in dumpster.

(2) Always keep dumpster doors closed.

(3) Regularly check area around dumpsters for indication of leaks. Report leaking dumpsters to the disposal company identified on the dumpster. Report overfilled dumpsters.

(4) Submit LEAF request to GEMS to dispose of hazardous wastes including aerosols, pesticides, lab wastes, used rags, broken mercury lamps, spray paint, and pharmaceuticals. Hazardous wastes must be stored neatly and properly labeled.

(5) Submit LEAF request to GEMS to dispose of universal wastes including fluorescent light tubes batteries, and light ballasts.

g. **Inspections**

(1) Conduct routine visual inspections to detect pollutant discharges, particularly around the areas listed in Table 1 that store potential pollutant sources.

(2) The inspector should observe and evaluate the pollution prevention and good housekeeping procedures in place at each location. If any procedures are found to be deficient in preventing potential discharges, they will be adjusted.

h. **Spill and Leak Response**

(1) Detailed protocols for spill response are described in the Loch Raven Spill Prevention, Control, and Countermeasures (SPCC) Plan, which is incorporated into the ICP.

(2) Immediately place absorbent booms around storm drains near the spill and the source of the spill. Then, remove or seal the source of the spill and clean up the surrounding area.

(3) Notify appropriate personnel of any accidental releases for recordkeeping purposes. For major spills that VA personnel are not equipped to handle, GEMS and the Baltimore City fire department should be alerted.

(4) A record of historic spills and releases is available with the GEMS Managers.

i. **Miscellaneous**

(1) Implement best management practices (BMPs) when discharging water pumped from utility construction and maintenance activities. Do not pump water that may be contaminated with sediment, chemicals, or other pollutants to the storm drain system.

(2) Ensure that contractors also observe the good housekeeping procedures outlined in this document.

3. ASSIGNMENT OF RESPONSIBILITIES

None.

4. DEFINITIONS

Stormwater Management Best Management Practice (BMP) – A structural, vegetative, or procedural practice designed to eliminate the negative impacts of stormwater runoff. Stormwater management BMPs control flooding, reduce erosion, and improve water quality.

5. REFERENCES

a. Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4), General Discharge Permit No. 13-SF-5501

b. Loch Raven Veterans Affairs Medical Center Integrated Contingency Plan dated September 2020

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING
PERRY POINT VA MEDICAL CENTER
ATTACHMENT B2**

1. PURPOSE AND AUTHORITY

The purpose of this attachment is to establish written procedures to minimize or prevent pollutant discharge via stormwater runoff. These Pollution Prevention and Good Housekeeping procedures are required under Part IV.F of the Maryland General Permit for Discharges from State and Federal Municipal Separate Storm Sewer Systems (MS4s) (herein referred to as the MS4 permit). The procedures included in this document must be followed by any VA employee or contractor who works at the Perry Point Veterans Administration Medical Center (VAMC).

2. JUSTIFICATION

The Perry Point VA Medical Center specializes in inpatient, outpatient, and primary care services for patients at the VA Maryland Health Care System (VAMHCS). Perry Point also provides mental health care, including specialized treatment programs. Perry Point also provides hospice and nursing home care to Maryland’s veterans.

Perry Point is comprised of a main hospital facility and dozens of ancillary buildings, including a drinking water plant, heating plant, and chiller plant. Perry Point operations involve the storage and use of diesel fuel for boiler operation, running emergency generators, storage and use of diesel fuel, cafeteria operations, oil-filled operational equipment comprised of hydraulic elevator reservoirs and electrical transformers, and new and used oil generated during automotive maintenance activities. The facility is not involved in any oil production, drilling, or work over operations.

Perry Point is a large quantity generator of hazardous wastes including unusable or expired facility maintenance and laboratory chemicals, expired hygiene chemicals, waste building materials, waste pharmaceuticals, and clinical hazardous wastes.

Hazardous waste is stored in the hazardous waste storage shed north/northwest of the automobile repair garage (REMRO), prior to shipment for off-site disposal. The VAMHCS is registered with the Maryland Department of the Environment (MDE) as a hazardous waste generator under EPA ID Number MD8360007308. The VA does not self-transport or package for transport any hazardous waste.

A list of potential pollutant sources can be found below in Table 1.

Table 1: Perry Point Potential Pollutant Sources	
Location	Pollutant Sources
Kitchen Building, Building 17H	<ul style="list-style-type: none">• Diesel• Used grease

Medical Ward Building, Building 19H	<ul style="list-style-type: none"> • Diesel
Water Pumping Station	<ul style="list-style-type: none"> • Diesel
Emergency Generator Building	<ul style="list-style-type: none"> • Diesel
Hospital Clinic, Building 23	<ul style="list-style-type: none"> • Diesel
Wastewater Pump Station, Building 311	<ul style="list-style-type: none"> • Diesel
Boiler Plant	<ul style="list-style-type: none"> • Diesel
Building 321	<ul style="list-style-type: none"> • Diesel
Generator Building 324	<ul style="list-style-type: none"> • Diesel
Generator Building 325	<ul style="list-style-type: none"> • Diesel
Generator Building 326	<ul style="list-style-type: none"> • Diesel
Generator Building 327	<ul style="list-style-type: none"> • Diesel
Generator Building 329	<ul style="list-style-type: none"> • Diesel
Filter Plant	<ul style="list-style-type: none"> • Diesel
Emergency Generator Building 365	<ul style="list-style-type: none"> • Diesel
REMRO	<ul style="list-style-type: none"> • Heating oil • Hazardous Waste
Emergency Generator Building 344	<ul style="list-style-type: none"> • Diesel
Salt Shed	<ul style="list-style-type: none"> • Diesel • Salt
Site-wide parking lots and roads	<ul style="list-style-type: none"> • Diesel (mobile tank) • Gasoline, motor oil, sediment
Paint Shop, Building 11	<ul style="list-style-type: none"> • Hazardous Materials
Maintenance Shop, Building 18H	<ul style="list-style-type: none"> • Universal Waste
Grounds Garage Building 25H	<ul style="list-style-type: none"> • Pesticides
Building 8A	<ul style="list-style-type: none"> • Pesticides

3. PROCEDURES

The following sections offer an overview of good housekeeping procedures for each potential pollutant source.

a. Road, Street, and Parking Lot Maintenance.

(1) Protect storm drain inlets near work areas using covers, filters, absorbent booms, etc. Do not remove inlet protection until all work has been completed, including final waste removal or sweeping.

(2) Remove leaves, trash, excess sand/salt, or other debris from storm drain inlets and paved surfaces when observed during maintenance work on roads and parking lots.

(3) Where dumpsters are present, ensure that doors are closed and there is no evidence of leaks. Report leaking dumpsters to the disposal company identified on the dumpster.

(4) Schedule paving, painting, and other outdoor maintenance projects for dry weather days only.

(5) When maintenance requires earth-disturbing activities, use appropriate erosion and sediment controls to prevent pollutants from entering storm drains.

(6) Sweep or vacuum sediment and debris from work areas before each rain event and the conclusion of maintenance activities

(7) Never hose down streets, parking lots, or work areas.

(8) Do not dump materials into storm drains.

b. Landscaping and Pesticide/Herbicide Application.

(1) Follow label directions to apply, store, handle, mix, recycle, and dispose of chemicals and empty containers.

(2) Never perform transfer, mixing, or disposal of materials near storm drains.

(3) Always keep spill kits nearby when transferring, mixing, or disposing of materials.

(4) Do not apply landscape chemicals to frozen ground.

(5) Keep application equipment clean and free of chemical buildup.

c. Street Sweeping.

(1) Conduct sweeping of grounds, streets, and parking lots as needed to prevent debris from entering the storm drain system.

(2) Dispose of collected material properly. Collected material may not be emptied, stockpiled, or disposed in a manner that will allow it to discharge to the storm drain system or otherwise come in contact with stormwater runoff.

d. Winter Road Maintenance.

(1) Minimize spills by not overloading salt and sand spreading trucks and equipment.

(2) Use the least amount of sand and salt necessary to achieve safe walking/driving conditions.

(3) Establish snow storage areas that are not located near storm drains. Ideal snow storage areas are located on pervious areas where snow melt can infiltrate.

(4) Sweep excess salt from paved areas after the last snow.

e. **Equipment and Vehicle Storage**

(1) Store leaking vehicles or equipment indoors or under cover. If leaking vehicles or equipment cannot be moved under cover, use drip pans to contain the leak, and check fluid levels regularly.

(2) Always clean up leaks and spills when they are observed. Immediately remove absorbent materials used for spill cleanup. Report large spills to the VA's Fire Department (Perry Point) and Green Environmental Management System (GEMS).

(3) Never hose down equipment and vehicles near storm drains.

f. **Materials Storage**

(1) Store materials indoors or under cover. Use secondary containment for liquids, and check for leaks regularly.

(2) Material storage containers should be compatible with contents and clearly labeled.

(3) Limit quantities of stored materials to the extent possible to meet usage needs.

(4) Salt and sand piles should be fully under cover. Properly push back piles and use berms to prevent contact with stormwater.

(5) Place spill kits near liquid materials storage areas. Ensure spill kits are adequately stocked, especially after contents are used during spill response activities.

(6) Always clean up leaks and spills when they are observed. Report large spills to the VA's Perry Point Fire Department and the GEMS per the VAMHCS Emergency Operations Plan and the Perry Point ICP.

(7) Never hose down spilled material near storm drains.

g. **Waste Storage**

(1) Pick up loose trash and dispose in dumpster.

(2) Always keep dumpster doors closed.

(3) Regularly check area around dumpsters for indication of leaks. Report leaking dumpsters to the disposal company identified on the dumpster. Report overfilled dumpsters.

(4) Submit LEAF request to GEMS to dispose of hazardous wastes including aerosols, pesticides, lab wastes, used rags, broken mercury lamps, spray paint, and pharmaceuticals. Hazardous wastes must be stored neatly and properly labeled.

(5) Submit LEAF request to GEMS to dispose of universal wastes including fluorescent light tubes batteries, and light ballasts.

h. Equipment Washing

(1) Wash equipment over grassed areas without potential for washoff onto impervious surfaces and into storm drains.

i. Inspections

(1) Conduct routine visual inspections to detect pollutant discharges, particularly around the areas listed in Table 1 that store potential pollutant sources.

(2) The inspector should observe and evaluate the pollution prevention and good housekeeping procedures in place at each location. If any procedures are found to be deficient in preventing potential discharges, they will be adjusted.

j. Spill and Leak Response

(1) Detailed protocols for spill response are described in the Perry Point Spill Prevention, Control, and Countermeasures (SPCC) Plan, which is incorporated into the ICP.

(2) Immediately place absorbent booms around storm drains near the spill and the source of the spill. Then, remove or seal the source of the spill and clean up the surrounding area.

(3) Notify appropriate personnel of any accidental releases for recordkeeping purposes. For major spills that VA personnel are not equipped to handle, GEMS and the Perry Point fire department should be alerted.

(4) A record of historic spills and releases is available with the GEMS Managers.

k. Miscellaneous

(1) Implement best management practices (BMPs) when discharging water pumped from utility construction and maintenance activities. Do not pump water that may be contaminated with sediment, chemicals, or other pollutants to the storm drain system.

(2) Ensure that contractors also observe the good housekeeping procedures outlined in this document.

4. ASSIGNMENT OF RESPONSIBILITIES

None.

5. DEFINITIONS

Stormwater Management Best Management Practice (BMP) – A structural, vegetative, or procedural practice designed to eliminate the negative impacts of stormwater runoff. Stormwater management BMPs control flooding, reduce erosion, and improve water quality.

6. REFERENCES

a. Maryland General Permit for Discharges of Stormwater from State and Federal Municipal Separate Storm Sewer Systems (MS4), General Discharge Permit No. 13-SF-5501

b. Perry Point Veterans Affairs Medical Center Integrated Contingency Plan, Revision 5.0, October 2019