DRAFT
DISTRICT OF COLUMBIA
WATER QUALITY ASSESSMENT
2022 INTEGRATED REPORT

TO THE US ENVIRONMENTAL PROTECTION AGENCY AND CONGRESS

PURSUANT TO

SECTIONS 305(b) AND 303(d) CLEAN WATER ACT (P.L. 97-117)

DEPARTMENT OF ENERGY & ENVIRONMENT

Preface

The District of Columbia (District) Department of Energy and Environment (DOEE) prepared this report to satisfy the listing requirements of §303(d) and the reporting requirements of §305(b) of the federal Clean Water Act (CWA) (P.L. 97-117). This report provides water quality information for the District's surface waters and groundwaters that were assessed during 2020 and 2021, and updates the water quality information required by law.

The United States Environmental Protection Agency's (EPA) new Assessment, Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS) database holds the official submittal of the CWA §303(d) list and §305(b) assessed waters information and contains more detailed information on the District's waterbody segments. The ATTAINS database can be viewed on the EPA website at https://ofmpub.epa.gov/waters10/attains_index.home.

The following DOEE divisions contributed to this report: Air Quality, Fisheries and Wildlife, Inspection and Enforcement, Regulatory Review, Toxic Substances, Watershed Protection, and Water Quality.

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Acronyms /Abbreviations

ADB	assessment database
AFF	Alice Ferguson Foundation
AQD	Department of Energy and Environment Air Quality Division
ARRA	American Recovery and Reinvestment Act
ATTAINS	Assessment and Total Maximum Daily Load Tracking and Implementation System
AWS	Anacostia Watershed Society
BID	business improvement district
BMP	best management practice
CEI	compliance evaluation inspections
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CGP	Construction General Permit
CMB	Construction and Maintenance Branch
CMC	Chesapeake Monitoring Cooperative
C&O	Chesapeake and Ohio
CSI	compliance sampling inspection
CSN	Chesapeake Stormwater Network
CSO	combined sewer overflow
CWA	Clean Water Act
CWP	Center for Watershed Protection
DCEEC	District of Columbia Environmental Education Consortium
DCPS	District of Columbia Public Schools
DCOP	District of Columbia Office of Planning
DC Water	District of Columbia Water and Sewer Authority
DDOT	District Department of Transportation
DGS	District of Columbia Department of General Services
District	District of Columbia
DO	dissolved oxygen
DOEE	District of Columbia Department of Energy and Environment
DPR	District of Columbia Department of Parks and Recreation
DPW	District of Columbia Department of Public Works
DSLBD	District of Columbia Department of Small and Local Business Development
EA	Environmental Assessment
EISA	Energy Independence and Security Act
ENF	Earth's Natural Force
EPA	United States Environmental Protection Agency
FWD	Department of Energy and Environment Fisheries and Wildlife Division
FY	fiscal year
GAR	Green Area Ratio
GIS	geographic information system
GSA	General Services Administration
GSI	Green Stormwater Infrastructure
HAP	hazardous air pollutant
HOTD	Heating Operation and Transmission District

ICPRB	Interstate Commission on the Potomac River Basin
IDDEP	Illicit Discharge Detection and Elimination System Program
IED	Department of Energy and Environment Inspection and Enforcement Division
IP	implementation plan
IPM	integrated pest management
IPMT	implementation plan modeling tool
JD	Jurisdictional Determination
JE	joint evaluation
K	kindergarten
LID	low impact development
LMB	largemouth bass
LTCP	Long Term Control Plan
MD	Maryland
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Sector General Permit
MWCOG	Metropolitan Washington Council of Governments
MWEE	meaningful watershed educational experience
NATA	National Air Toxics Assessment
NATTS	National Air Toxics Trends Station
NCR	National Capital Region
NE	northeast
NOI	Notice of Infraction
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NPS	National Parks Service
NRA	Natural Resources Administration
NW	northwest
NWP	Nationwide Permit
OSSE	District of Columbia Office of the State Superintendent of Education
PAH	polycyclic aromatic hydrocarbon
Pepco	Potomac Electric Power Company
ppb	parts per billion
RRD	Department of Energy and Environment Regulatory Review Division
RSC	regenerative stormwater conveyance
SAV	submerged aquatic vegetation
SE	southeast
SGS	Surface Groundwater System
SRC	Stormwater Retention Credit
SSO	sanitary sewer overflow
SW	Southwest
SWAP	Source Water Assessment Program
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plans
SWRv	stormwater retention volume
TMDL	total maximum daily load
TSB	Department of Energy and Environment Technical Services Branch

TSD	Department of Energy and Environment Toxic Substances Division
UDC	University of the District of Columbia
US	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VA	Virginia
VCP	voluntary cleanup program
WMATA	Washington Metropolitan Area Transit Authority
WPD	Department of Energy and Environment Watershed Protection Division
WQC	water quality certification
WQD	Department of Energy and Environment Water Quality Division
WQS	water quality standards
WRRC	Water Resources Research Center
WWTP	wastewater treatment plant

Chapter 1 Executive Summary

1.1 Introduction

The District of Columbia Water Quality Assessment 2022 Integrated Report provides information about the state of District of Columbia (District) waters and efforts by the Department of Energy and Environment (DOEE) to protect and improve water quality. The Integrated Report (IR) combines the comprehensive biennial reporting requirements of federal Clean Water Act (CWA) Section 305(b) on the status of all waters in the District including progress made towards meeting the CWA's goals since the time of the last 305(b) Report, and updates Section 303(d) listings of waters of the District that are impaired or likely to become impaired and do not meet the water quality standards (WQS) for specific uses for which total maximum daily loads (TMDLs) may be required.

This report has been drafted for submission to the United States Environmental Protection Agency (EPA). It includes details from the EPA Assessment and TMDL Tracking and Implementation System (ATTAINS) database and addresses comments received during the comment period.

1.2 District of Columbia Water Quality

To meet the District's CWA goals, DOEE monitored 36 waterbody segments during the period of January 2017–June 2021 (2022 reporting period), evaluated the data, and assessed each waterbody's designated uses based on the numeric and narrative criteria outlined in the District's WQS. The evaluation found that none of the District's monitored waters are supporting all their designated uses. The uses that impact humans and aquatic life are generally not supported

A waterbody that does not support its designated uses is considered impaired. The results of the evaluation indicate that while the District's waterbodies show signs that water quality is improving, they continue to be impaired.

This report focuses on surface water assessment, but the District does also evaluate groundwater through compliance monitoring and ongoing studies. The appendices of this report contain details regarding the conditions of both surface water and groundwater.

1.3 Causes and Sources of Water Quality Impairment

Typical causes of impairment to the District's waterbodies are elevated concentrations of bacteria and pH, low concentrations of dissolved oxygen (DO), and high turbidity.

Bacteria (*E. coli*)

In 2008, the water quality criterion used to evaluate bacteria was updated from Fecal coliform to *E. coli*. DOEE surveyed *E. coli* for the 2022 reporting period and found the Potomac River had fewer percent exceedances than the Anacostia River, but both rivers experienced a slight decrease for the period. For the tributaries, the C&O Canal had the lowest number of exceedances during the study period, while Hickey Run, an Anacostia River tributary, had the highest percentage of exceedances at 96.51 percent. Chronic *E. coli* percent exceedances continue to be a problem for the majority of the District's waterbodies. Fluctuations in these constituents are due to various factors, such as weather and subwatershed activities and conditions, including failing sewer pipes and illicit discharges.

pH

A survey was conducted of the percent exceedances of the criteria for selected constituents for the 2022 reporting period to determine whether the effect of the activities was reflected in the data. No monitored surface waterbodies were measured above a temperature maximum of 32.2°C. In the Anacostia River, measurements for pH did not exceed the 10 percent threshold. For this reason, pH does not appear to be a concern in the Anacostia. In the Potomac River, pH exceedances were observed in as many as 4.17 percent of the measurements in one segment of the main stem. Exceedances for pH are generally low with rare exceptions above the 10 percent threshold. For example, the 2022 report has no tributaries with exceedances above the 10 percent threshold.

Dissolved Oxygen

Exceedances of DO WQS in the Anacostia River decreased for the 2022 reporting period compared with the 2020 reporting period. All measurements in the Potomac River met minimum levels of DO set by WQS. For the 2022 reporting period, all tributaries in the District met the DO WQS.

Turbidity

The upstream segments of the Anacostia and Potomac Rivers were observed to have a higher number of turbidity exceedances than their downstream segments during the 2022 reporting period. Kingman Lake, an Anacostia River watershed waterbody, consistently had the highest number of exceedances, with 50.62 percent of measurements taken during the 2022 review period not meeting the turbidity standard. Rock Creek tributaries are not as impacted by turbidity as the Anacostia River tributaries. The average percent exceedance for all tributaries to Rock Creek was 5.59 percent, while the average percent exceedance for all tributaries to the Anacostia River was 29.75 percent. The average percent exceedance for the entire main stems of Rock Creek, the Potomac River, and the Anacostia River were 15.39 percent, 13.70 percent, and 17.09 percent, respectively.

The sources that have major impacts on District waters are combined sewer overflows (CSOs), urban stormwater runoff and pollutants from upstream jurisdictions.

Programs to Address Impairment

Several DOEE divisions conduct activities to correct water quality impairments:

- Toxic Substances Division (TSD)
- Watershed Protection Division (WPD)
- Water Quality Division (WQD)

- Inspection and Enforcement Division (IED)
- Regulatory Review Division (RRD)

The WQD and IED joint water pollution control programs implement WQS, monitor and inspect permitted facilities in the District, and comprehensively monitor the District's waters to identify and reduce impairments. The water pollution control program seeks solutions and implements activities to provide maximum water quality benefits.

Given the District's urban landscape, both point source and nonpoint source pollution have a large impact on its waters. WPD and RRD manage the sediment and stormwater control programs that regulate land disturbing activities, stormwater management, and floodplain management by providing technical assistance and inspections throughout the District. The District also conducts stream restoration activities to improve habitat and implements a RiverSmart program that provides financial incentives to help property owners install green stormwater infrastructure (GSI) to reduce polluted runoff. Further, the District provides education and outreach to residents and developers on pollution prevention to ensure their actions do not further impair the District's water quality.

Several activities are coordinated for the groundwater protection program in the TSD, including underground storage tank installation and remediation, and groundwater quality standards implementation.

DOEE also coordinates with the District Water and Sewer Authority (DC Water), which began construction of the Northeast Boundary Tunnel segment of the CSO Long Term Control Plan (Clean Rivers Project). The plan involves the construction of large underground tunnels that will serve as collection and retention systems for combined sewage during high flow conditions. A Consent Decree entered on March 23, 2005, in Consolidated Civil Action No. 1:00CV00183TFH by the United States District Court for the District of Columbia required implementation of the Clean Rivers Project. On January 14, 2016, the Court entered the First Amendment to the CD (Amended CD) in Consolidated Civil Action No. 1:00CV00183TFH, which extended the date for completion of the project to 2030.

1.4 Conclusions

Activities to restore water quality are an integral part of meeting CWA goals for fishable, swimmable water bodies. A stream restoration project at Branch Avenue Park was completed that will reduce erosion and improve stream habitat. Fort Dupont, Oxon Run, Park Drive Gully, Stickfoot Branch, and Pinehurst Branch all have stream restoration projects underway. The negative impacts of stormwater runoff, which result from the 43 percent of the District land area being impervious, are being mitigated by the District's Stormwater Rule, which requires regulated development projects to retain stormwater on-site rather than letting it quickly run off directly to waterbodies. To meet the requirements of the Stormwater Rule, hundreds of stormwater best management practices (BMPs) were installed between 2019 and 2021. Those BMPs installed in 2018 and 2019 continue to be maintained and monitored in 2020. The DOEE 2020 Stormwater Management Guidebook provides a menu of water quality improvement practices that developers and regulated entities can choose from (see http://doee.dc.gov/swguidebook). In addition to the regulations, the RiverSmart programs (RiverSmart Homes, RiverSmart Communities, RiverSmart Schools, and RiverSmart Rooftops) support voluntary retrofits of impervious surfaces and provide valuable educational experiences and opportunities for citizens, students, and businesses to participate in improving water quality in the city. Lastly, significant portions of the DC Water Clean River's Project are operational and currently show a 96 percent reduction in CSO volume system-wide. Continued improvements in bacteria concentrations are expected as more phases of the project are completed.

The improvements noted in previous years to aquatic resources, such as wetlands and fish populations, have been sustained. The concentrations of chemicals in several fish species caught in District waters have decreased, showing progress toward achieving the fishable goal. DOEE and its partners continue to invest a variety of resources to improve District and regional water quality, and are optimistic about the incremental improvements current and planned activities will deliver.

Chapter 2 Background

The Government of the District of Columbia's environmental protection responsibilities are carried out by various divisions within DOEE. The following sections provide detail on the District waters and initiatives to address point and non-point sources of pollution.

2.1 Atlas, Total Waters, and Maps

Table 2.1 provides a general view of the District's resources. Figure 2.1 provides a graph of the District's monthly, yearly, and normal total rainfall. The National Weather Service rain gauge site at Ronald Reagan Washington National Airport is the official source for the District's rainfall totals, which were above average for 2020 and 2021. Figures 2.2 and 2.3 present monthly and yearly average flow data for the Anacostia and Potomac Rivers from 2020 to 2021 (Source: United States Geological Survey). Appendix 2.1 Major District of Columbia Watersheds, provides a map outlining the major watersheds within the District.

Table 2.1 Atlas

State population: 689,545 (2020 Census) / 670,050 (July 2021 Census Estimate)
State surface area: 69 square miles
Number of water basins: 1
Total number of river miles: 39
- Number of perennial river miles: 39
- Number of intermittent stream miles: none
- Number of ditches and canals: none
- Number of border miles: none
Number of lakes, reservoirs, and ponds: 8
Acres of lakes, reservoirs, and ponds: 238
Square miles of estuaries: 6.1
Acres of wetlands: 289
Name of border waterbody: Potomac River estuary
Number of border estuary miles: 12.5

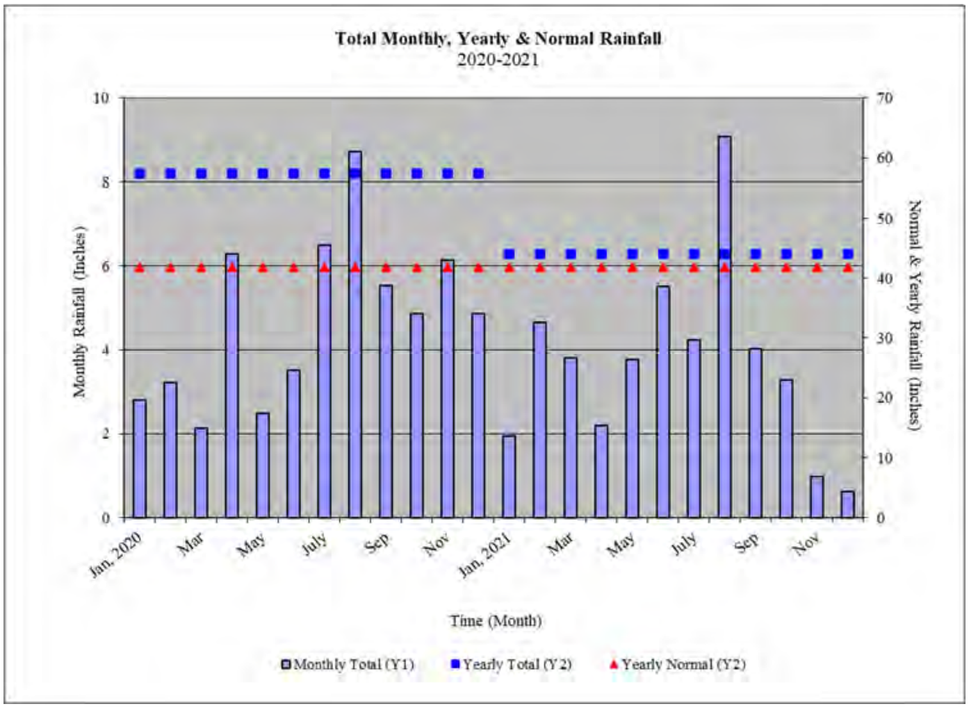


Figure 2.1 Total monthly, yearly, and normal total rainfall (inches), 2020-2021 (Source: National Weather Service, Ronald Reagan Washington National Airport).

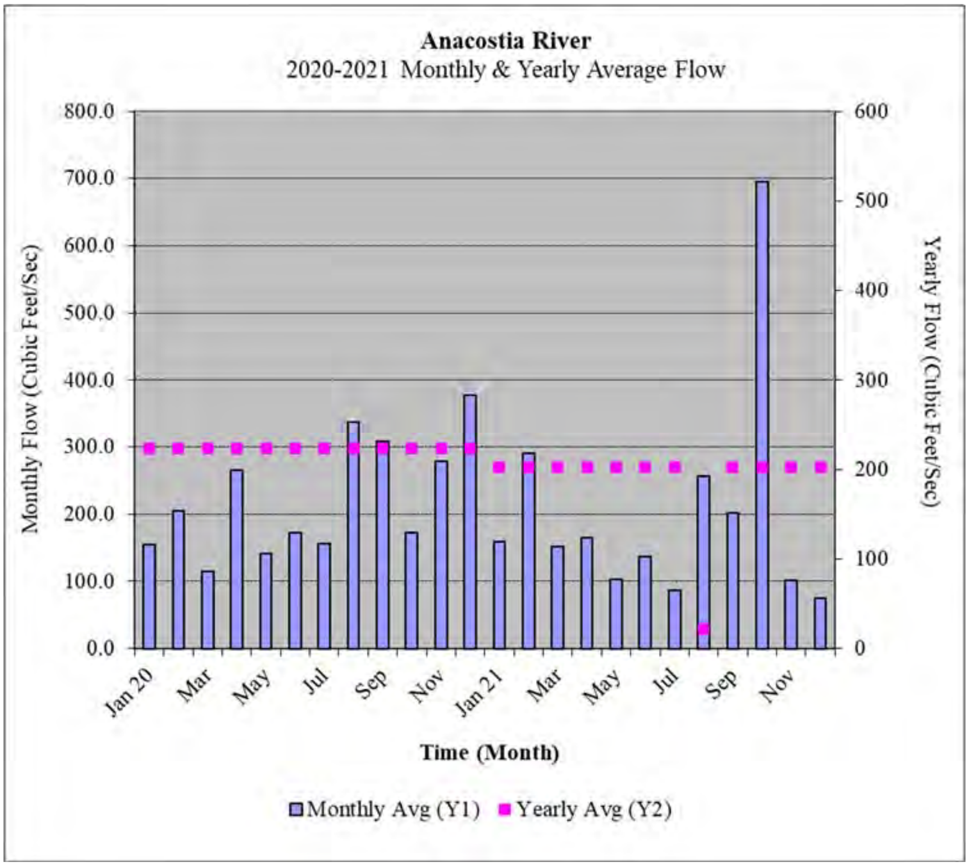


Figure 2.2 Monthly and yearly average flow on the Anacostia River, 2020-2021.

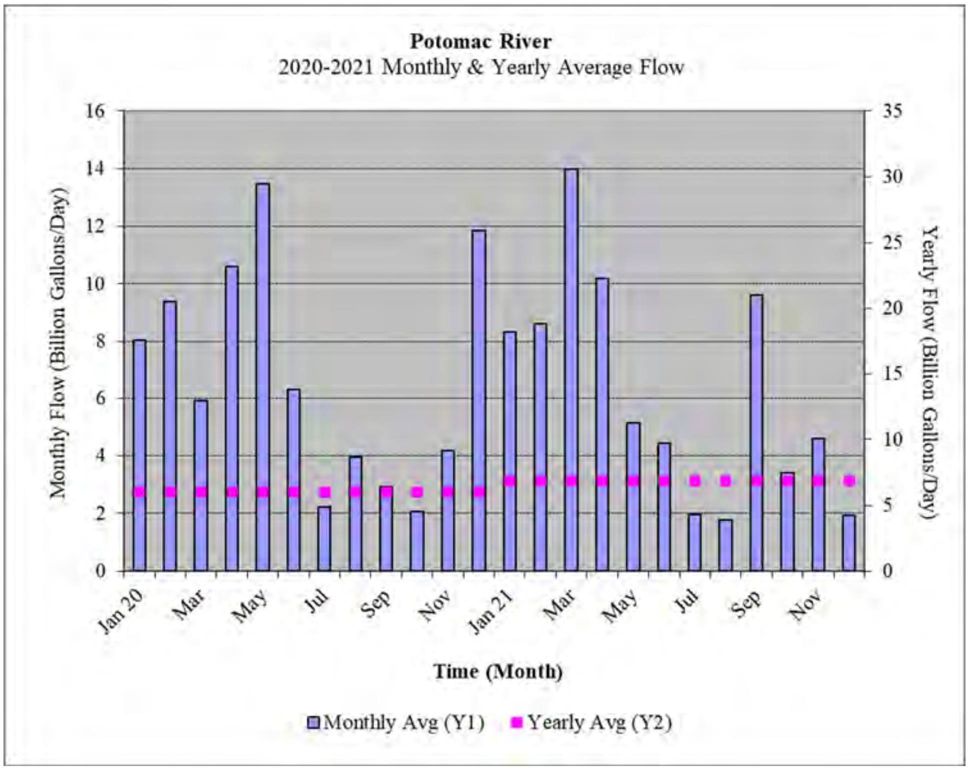


Figure 2.3 Monthly and yearly average flow on the Potomac River, 2020-2021.

2.2 Water Pollution Control Programs

Water Quality Standards Program

The District's WQS regulations are developed and revised under the authority of the federal CWA and the District of Columbia Water Pollution Control Act of 1984, D.C. Official Code § 8-103-01 *et seq*. WQS play a critical role in implementing various essential purposes and functions under the CWA. WQS are used for: reporting in water quality assessments; TMDL development; National Pollutant Discharge Elimination System (NPDES) permits; nonpoint source programs; and, recreational water monitoring and notification. In compliance with the CWA, DOEE reviews the WQS every three years to determine the need for possible changes to District regulations and development of new information on water quality criteria. As part of this process, which is called the Triennial Review, DOEE solicits public participation and holds a public hearing. The review and any updates enable the District to use WQS as a programmatic tool in the water quality management process and as a foundation for water quality-based control programs. Water quality standards ensure the protection of the District's waters.

2021 Triennial Review

DOEE redesignated the 2019 triennial review as the 2021 triennial review because EPA initiates the triennial review period from the date of the previous public hearing. DOEE had expected to hold the public hearing for this triennial review period in 2021; however, due to comments from DOEE and EPA, more time is needed to draft the 2021 WQS.

Initially, DOEE reviewed pH and turbidity updates, researched separating the Class B designed use into two classes (one for secondary recreation and another for aesthetic use), and reviewed updated use class definitions to include examples of activities protected under the designated uses. DOEE also included general language updates to provide consistency and clarity in the 2021 triennial review.

After receiving comments on the proposed updates from DOEE and EPA, DOEE withdrew the proposed pH updates and the proposed separation of Class B into two use classes. Also, more research is needed to verify that the proposed turbidity updates are protective of the aquatic life use, which will delay publishing.

DOEE is reviewing the nationally recommended diazinon criteria (EPA-822-R-05-00) for promulgation in the 2021 triennial review.

DOEE has continued to review the 2012 recreational water quality criteria (*E. coli*) for future adoption. DOEE also continues to collaborate with EPA on all possible options to successfully promulgate the criteria.

DOEE separately drafted wording on the Rivers Section of its WQS. The updated language includes clarifications on the parameters that should be analyzed for swimming events, specifically, pH, turbidity, and *E. coli*, which must be below the single sample value. Updated language also included expanding the Director's discretion on revoking swimming exemptions due to health and safety concerns.

2.3 Point Source Program

National Pollutant Discharge Elimination System Permits

EPA issued site-specific industrial permits to 11 facilities in the District under NPDES individual permits. The Blue Plains Wastewater Treatment Plant (WWTP) operated by DC Water continues to be the primary source of discharges to District waters. The WWTP and other industrial NPDES permitted facilities are inspected to ensure compliance with permit conditions and the District's WQS.

Table 2.2 lists the individual NPDES permitted facilities in the District.

Table 2.2 NPDES Permitted Facilities in the District of Columbia

Permit No	**Permittee/Facility**	**Permit Type**	**Effective Date**	**Expiration Date**
DC0000175	Bardon, Inc (d/b/a Aggregate Industries, aka Super Concrete)	Industrial	10/01/2020	9/30/2025
DC0000337	Washington Metropolitan Area Transit Authority (WMATA) – Mississippi Avenue Pumping Station	Industrial	12/11/2018	12/10/2023

Permit No	**Permittee/Facility**	**Permit Type**	**Effective Date**	**Expiration Date**
DC0000035	Georgetown 29K Acquisition, LLC – Former General Services Administration (GSA) West Heating Plant	Industrial	9/11/2018	9/10/2023
DC0021199	D.C. Water and Sewer Authority (DC Water), Wastewater Treatment Plant at Blue Plains WWTP	Publicly Owned Treatment Works	8/26/2018	8/25/2023
DC0000370	United States National Park Service National Mall and Memorial Parks – Lincoln Memorial Reflecting Pool	Industrial	7/03/2018	7/02/2023
DC0000345	United States National Park Service National Mall and Memorial Parks - National World War II Memorial	Industrial	7/03/2018	7/02/2023
DC0000221	Government of the District of Columbia – Municipal Separate Stormwater Sewer System (MS4)	Stormwater	6/22/2018	6/21/2023
DC0000019	Department of the Army, Baltimore District, Corps of Engineers - Washington Aqueduct Water Treatment Plant	Industrial	6/01/2021	5/31/2023
DC0000094	Potomac Electric Power Company (PEPCO), Benning Road Service Station	Industrial	6/01/2021	5/31/2026
DC0000248	John F. Kennedy Center for the Performing Arts	Industrial	6/06/2013	6/05/2018[1]
DC0000141	CMDT Naval District Washington, DC – Washington Navy Yard	Industrial	1/22/2010	1/22/2015[1]

[1] EPA has administratively extended the permit under 40 CFR 122.6(a)(1).

In addition to facilities that require individual NPDES permits, the EPA also issues general NPDES permits in the District of Columbia. Table 2.3 lists of available general NPDES permits in the District. There are several industrial facilities and construction sites that have been permitted under a Multi-Sector General Permit (MSGP) or a Construction General Permit (CGP), respectively.

Table 2.3 Available General NPDES Permits in the District of Columbia

Available General Permits	Issuance Date	Effective Date	Expiration Date
Construction General Permit (Modified 06/27/2019)	Jan. 2017	02/16/2017	02/16/2022
Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activity	1/15/2021	03/01/2021	02/28/2026
Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels (VGP)	4/12/2013	12/19/2013	12/18/2018[1]
Pesticide General Permit (PGP) For Discharges from the Application of Pesticides	9/08/2021	10/31/2021	10/31/2026

1 *EPA has administratively extended the permit per 40 CFR §122.6(a)(1).*

Review and Certification of Draft NPDES Permits

The District is not a delegated state under the EPA NPDES program and therefore does not issue discharge permits. WQD reviews drafts of individual and general NPDES permits to certify they are complete and comply with federal and District laws and with District WQS as required by Section 401 of the Clean Water Act. WQD may seek revisions to the draft permit to comply with more stringent District laws and standards or establish conditions for certification of the permit. EPA and the District then jointly announce a public comment period, which will be published on EPA's website at https://www.epa.gov/dc/epa-public-notices-district-columbia. Changes to draft permits may incorporate comments received during this period. EPA decides which comments to address. Final permits are issued for a five-year period, but contain reopener clauses in case facility conditions, WQS, or regulations change.

There are two facilities whose individual permits have expired, and EPA is in the process of either reviewing the permit renewal applications or drafting renewal permits. DOEE continues to work cooperatively with EPA on the NPDES permits currently being drafted for reissuance. DOEE stays engaged with EPA on local water quality and permitting matters as EPA continues to implement the NPDES program in the District. The individual permits and general permits that have expired are listed in Tables 2.2 and 2.3 respectively.

During this reporting period, WQD reviewed and certified draft NPDES Permit Number DC0000175 for the Bardon, Inc (d/b/a Aggregate Industries, aka Super Concrete); draft NPDES Permit Number DC0000019 for the Department of the Army, Baltimore District, Corps of Engineers Washington Aqueduct Water Treatment Plant; draft NPDES Permit Number DC0000094 for the Potomac Electric Power Company (PEPCO), Benning Road Service Station; and draft NPDES Permit Number DC0000141 for Commandant, Naval District Washington, DC – Washington Navy Yard.

Approval of Groundwater Discharge into DC MS4

WQD in collaboration with RRD reviews and authorizes the discharge of uncontaminated groundwater into the District's Municipal Separate Storm Sewer System (MS4). Approved discharges include uncontaminated groundwater from a range of sources such as groundwater from construction dewatering, groundwater from sub-grade sumps in completed buildings, stormwater that encounters or mixes with contaminated soil, or potable water from fountains or hydrostatic testing. There are several projects that discharge approved uncontaminated groundwater into DC MS4.

During this period, RRD and WQD reviewed and authorized, renewed, or terminated authorization to discharge uncontaminated groundwater into the District's MS4 for the following construction and post construction project sites:

Table 2.4 Groundwater Discharge Projects that were approved, revised, or terminated for discharge of uncontaminated groundwater into the MS4 during FY 2022

Project Address	Date of Action	Project Description
1000 6th St. SW	2/3/2021	The View/Modern on M Building changed groundwater treatment requirements in the groundwater discharge authorization (GDA).
6900 Georgia Ave. NW	2/10/2021	Walter Reed Building – approved construction GDA.
6800 Georgia Ave. NW	1/6/2021	Walter Reed VU Building – terminated construction GDA; approved building sump GDA.
4873 Benning Rd. SE	2/16/2021	KIPP Benning Building - terminated construction GDA; approved building sump GDA.
1000 4th St. SW	12/1/2020	Waterfront Station II - approved construction GDA.
429 L'Enfant Plaza, SW	9/3/2020	Banneker Fountain - approved GDA.
1650 Kenilworth Ave. NE	4/23/2021	The Residences at Kenilworth – approved construction GDA.
600-800 Kenilworth Terrace NE	3/16/2021	Grove at Parkside – approved construction GDA.
1400 Constitution Ave. NW	6/17/2021	National Museum of African American History and Culture (NMAAHC) building sump; transitioned from NPDES permit to GDA.
3950 37th St. NW	10/04/2021	Hearst Park Pool – terminated construction GDA.
1000 South Capitol St. SE	2/10/2021	Lerner South Capitol – terminated construction GDA.
4001 South Capitol St. SW	9/24/2021	Building sump – terminated construction GDA

Table 2.5 RRD and WQD reviewed and provided comments for the following project applications:

Project Address	Approval Status	Project Description
4414-4430 Benning Rd. NE	Under review	So, Others Might Eat building sump; application for renewal of post construction GDA.
1015 Half St. SE	Under review	Building sump – request to transition from EPA's MSGP to DOEE's post construction GDA.
760 Maine Ave. SW	Under review	Wharf Phase II – application for post construction GDA.
17 Mississippi Ave. SE	Under review	Mississippi Ave Apartments – application for construction GDA.
100 V St. SW Square 611 Lots 19 and 810	Under review	Application for authorization to discharge groundwater from a well pump test on site.
3924 Minnesota Ave. NE	Under review	Senator Square – application for construction GDA.
5211-5229 South Dakota Ave. NE	Under review	Art Place at Fort Totten - application for construction GDA.
113 Potomac Ave. SE	Under review	The Vermeer - application for construction GDA.
1319 South Capitol St. SW	Under review	New Building - application for construction GDA.
Independence Ave. SE	Under review	DCCR Duct Bank trenching work - application for construction GDA.

2.4 Compliance Inspections

Each fiscal year (October 1 to September 30), DOEE develops a Compliance Monitoring Strategy (CMS) to document the compliance monitoring activities for facilities covered under NPDES. The compliance monitoring strategy is a vital part of the District's NPDES Compliance Inspection Program, which assesses permit compliance and develops enforcement documentation. The District NPDES Compliance Inspection Program generally conducts Compliance Evaluation Inspections (CEI) to determine compliance but may perform Compliance Sampling Inspections (CSI) if required. CEI inspections are designed to verify the permittee's compliance with applicable permit effluent limits, self-monitoring requirements, and compliance schedules. CEI involves record reviews, visual observations, and evaluations of a permitted facility's treatment systems, effluent, receiving waters, and waste disposal practices. Appropriate enforcement and corrective actions are recommended to EPA for violations and/or deficiencies noted during the compliance inspections.

During this reporting period, DOEE implemented CMS for Fiscal Years 2020 and 2021. DOEE conducted CEIs for facilities in Table 2.6 and Table 2.7.

Table 2.6 NPDES Core Program Facilities Inspected

NPDES ID	Permit Name	Type of Facility
DC0000019	Washington Aqueduct	Major
DC0000094	PEPCO Environment Management Services	Major
DC0021199	D.C. WASA (Blue Plains)	Major
DC0022004	Mirant Potomac River L.L.C.	Major
DC0000370	Lincoln Memorial Reflecting Pool	Minor
DC0000141	Washington Navy Yard	Minor
DC0000248	JFK Center for Performing Arts	Minor
DC0000345	World War II Memorial	Minor

Table 2.7 NPDES Wet Weather Industrial Stormwater Program Facilities Inspected

NPDES ID	Permit Name	Type of Facility
DCR05J00K	Benning Road Trash Transfer Station	MSGP
DCR05J00G	Fort Reno Leaf Transfer Station	MSGP
DCR05J00F	Fort Reno Salt Dome	MSGP
DCR05J00C	DPW Leaf and Snow Headquarters	MSGP
DCR05J009	OSSE Southwest Bus Terminal	MSGP
DCR053018	Virginia Concrete – Vulcan SWDC	MSGP
DCR05J00P	Capital Asphalt	MSGP
DCR053009	WMATA Western Bus Division	MSGP
DCR05J00A	DPW Street and Alley Cleaning Division	MSGP
N/A	US National Arboretum Maintenance Facility	Unpermitted
N/A	Strittmatter Rock Crushing/Screening	Unpermitted
N/A	Fort Meyers Construction	Unpermitted

DOEE also conducts inspections of point source discharges of groundwater from temporary construction dewatering operations. These operations are typically covered under the NPDES General Construction Permit; however, DOEE reviews and certifies that the groundwater discharge meets District surface WQS. DOEE conducts inspections of these operations to ensure they comply with District regulations and that any required groundwater discharge treatment systems are operating correctly and efficiently.

Critical Source Inspection and Enforcement Program

DOEE maintains a database of critical sources of stormwater pollution; this includes industrial, commercial, institutional, municipal, and federal facilities within the MS4 area. In FY 2020 and FY 2021, DOEE identified and inspected a total of 92 facilities deemed critical sources of stormwater pollution. These inspections were documented with facility-specific inspection forms and recorded in the MS4 Inspection Tracking Database. DOEE takes appropriate actions to ensure these facilities are in compliance with the District's MS4 Permit, and that structural controls and BMPs are in place and effectively protecting water quality.

Illicit Discharge Detection and Elimination Program

DOEE manages an Illicit Discharge Detection and Elimination Program (IDDEP) designed to detect and eliminate illicit and unpermitted discharges, spills, and releases of pollutants to the District's MS4 and waterbodies. The IDDEP responds to reported illicit discharges, spills, or releases, and conducts targeted facility inspections and dry weather outfall inspections. In FY 2020 and FY 2021, DOEE responded to and investigated a total of 138 incidents of illicit discharges, spills, or releases. In the event of an incident, DOEE applies varying strategies to enforce clean up or compliance, including follow up inspections, site directives, notice of violations, administrative or compliance orders, and notice of infractions.

Additionally, DOEE maintains a watershed-based inventory of all MS4 outfalls and conducts dry weather inspections of these outfalls. In FY 2020 and 2021, DOEE conducted a total of 346 dry weather outfall inspections. In the event of a suspected illicit discharge from the outfall, DOEE initiates an investigation and implements various techniques to identify and eliminate the discharge or suspected dry weather flow.

2.5 Watershed Protection Division Enforcement Programs

The Anacostia River Clean Up and Protection Fund

The Anacostia River Clean Up and Protection Act (Bag Law) requires all District businesses selling food or alcohol to charge $.05 for each disposable paper and plastic carryout bag. The law allows businesses to keep $.01 (or $.02 if it offers a rebate when customers bring their own bag), and the remaining $.03 or $.04 is deposited into the Anacostia River Clean Up and Protection Fund. This fund generates approximately $2,000,000 per year, which is used to implement watershed education programs, stream restoration, trash capture projects, and to purchase and distribute reusable bags to District residents. Many of these activities also support the District's compliance with the MS4 Permit.

DOEE inspects at least 550 businesses per year for compliance with the Bag Law. Routine inspections were suspended in March 2020 in response to COVID-19 safety measures enacted by the Mayor. Of the 411 inspections completed between July 2019 and June 2021, 307 businesses were compliant (75 percent compliance).

Food Service Ware Requirements

The Sustainable DC Omnibus Amendment Act of 2014 bans the use of food service products made of expanded polystyrene, commonly known as Styrofoam™. The foam ban began on

January 1, 2016, and applies to all District businesses and organizations that serve food. The law also required these regulated food entities to switch to recyclable and compostable food service ware products beginning January 1, 2017. Beginning October 2018, single-use plastic straws and stirrers were banned under the 2017 recyclable and compostable requirements. Effective January 1, 2021, the ban was expanded to include the retail sale of foam food service ware and coolers, and packing materials like foam peanuts.

DOEE inspects at least 300 businesses per year for compliance with the District's food service ware requirements. Routine inspections were suspended in March 2020 in response to COVID-19 safety measures enacted by the Mayor. Of the 400 inspections completed between July 2019 and June 2021, 363 businesses were compliant with the foam food service ware and retail sale ban, and 369 were compliant with the food service ware material requirements.

Coal Tar Ban and High PAH Sealant Ban

As required by Section 4.7.5 of the MS4 Permit, the District continues to enforce its prohibition on the sale, use, and permitting of coal tar-based pavement products. The coal tar ban protects human health and the environment by reducing the amount of toxic polycyclic aromatic hydrocarbons (PAHs) in our communities and environment. Rainwater washes PAH-containing sealant particles and dust into storm drains and our local streams and rivers, threatening aquatic life in the Anacostia and Potomac Rivers and the Chesapeake Bay. In March 2019, the law was amended to ban products containing Ethylene Cracker Residue, known to contain high concentrations of PAHs, and any other products with PAH concentrations above 0.1 percent by weight.

DOEE inspects at least 60 properties per year for compliance with the District's pavement sealant ban. DOEE completed a total of 108 inspections during this reporting period.

2.6 Municipal Separate Storm Sewer System Permit

The Government of the District of Columbia is responsible for Municipal Separate Storm Sewer System (MS4) discharges into District waterways. The District's current MS4 permit was issued on May 23, 2018, became effective on June 22, 2018, and will expire on June 22, 2023.

MS4 Permit Compliance

The District continues to implement and enforce its stormwater management program in accordance with the MS4 Permit and the Revised Stormwater Management Plan (SWMP). The program uses retention practices to reduce stormwater runoff by mimicking natural landscapes through green roofs, bioretention, pervious pavers, and other green stormwater infrastructure (GSI). Table 2.8 shows the District's compliance with quantifiable performance standards required by the MS4 Permit.

The District's MS4 Annual Reports and accompanying ArcGIS Storymaps, which serve as a review of program implementation and compliance with the MS4 Permit, can be found at https://doee.dc.gov/publication/ms4-discharge-monitoring-and-annual-reports.

Table 2.8 Numeric Performance Standards and MS4 Permit Compliance

Numeric Requirement	Achievement During Reporting Year	Percent Complete	Achievement During Permit Term
Managed 1,038 Acres with green stormwater infrastructure in the MS4 Permit Area	176 acres	85.0%	882 acres
Achieve a minimum net increase of 33,525 trees in the MS4 Permit Area	8,218 trees	79.6%	26,686 trees
Install 350,000 square feet of green roofs within the MS4 Permit area	412,354 square feet	236.1%	826,411 square feet
Remove 108,347 pounds of trash from the Anacostia River annually	163,847 lbs	Requirement has been met each year of the permit term	
Sweep 8,000 street miles within the MS4 annually	6,119.05 miles	Requirement has been met each year of the permit term	

MS4 Monitoring

The District's MS4 permit requires DOEE to conduct wet weather discharge monitoring for Total suspended solids, total nitrogen, total phosphorus, copper, lead, zinc, cadmium, and *E. coli*. In addition, in situ samples are collected for water temperature, dissolved oxygen, conductivity, pH and hardness. This monitoring occurs three times per year at 9 outfalls (3 each in the Anacostia River, Rock Creek, and Potomac River watersheds). Results of the wet weather discharge monitoring are provided on an annual basis to EPA in the MS4 report as well as the Net DMR website (https://npdes-ereporting.epa.gov/net-netdmr). Table 2.9 below provides the locations of the monitoring outfalls.

Table 2.9 MS4 wet weather discharge monitoring locations

Site	Outfall	Watershed
SW1	Outfall 999 – Gallatin	Anacostia
SW2	Outfall 124* - Oxon Run	Potomac
SW3	Outfall 851 - Soapstone Creek	Rock Creek
SW4	Outfall 1035 - Kenilworth and Douglas	Anacostia
SW5	Outfall 260 - 53rd and Dix Street	Anacostia

Site	Outfall	Watershed
SW6	Outfall 950 - Potomac Tributary	Potomac
SW7	Outfall 103 - Oxon Run	Potomac
SW8	Outfall 825 - Tilden and Reno	Rock Creek
SW9	Outfall 901 - Tributary to Pinehurst Br.	Rock Creek

2.7 Wetlands Protection

The District has a policy of no net loss of wetlands or streams within its jurisdictional boundaries. To achieve this goal, RRD reviews all regulated activities and construction projects that may have the potential to impact wetlands and streams in the District for either a water quality certification pursuant to 33 U.S.C § 1341, or a District wetland and stream permit pursuant to Chapters 25 (Critical Areas – General Rules) and 26 (Critical Areas – Wetlands and Streams) to Title 21 of the District of Columbia Municipal Regulations (DCMR). The District relies on jurisdictional determinations by the United States Army Corps of Engineers (USACE) to determine whether a proposed activity requires a water quality certification (WQC) for regulated activities in wetlands determined to be Waters of the United States (WOTUS) or requires a wetland and stream permit (WSP) for regulated activities in wetlands that are not consider WOTUS.

For dredge and fill projects within WOTUS, RRD reviews permits issued by USACE under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA) to ensure wetland and stream impacts are avoided, minimized, and/or mitigated. RRD issues Section 401 CWA water quality certifications (WQC) to certify these permits with conditions to ensure compliance with Section 401 of the CWA and that District water quality standards (WQS) are not exceeded.

For regulated activities proposed in wetlands and streams that are non-WOTUS, a District WSP is required in accordance with 21 DCMR Chapters 25 and 26. RRD reviews regulated activities to ensure impacts to wetlands and streams are avoided, minimized, and/or mitigated. WSPs are issued with conditions to ensure no net loss of wetlands and streams and that water quality standards are not exceeded. Table 2.10 lists permits reviewed and certified this reporting period.

Table 2.10 Dredge and Fill Permits Reviewed and Certified

Certification Number	Permittee	Project Description
Modified WQC-DC-18-012B	National Park Service (NPS)	To clean storm drains that discharge into the Potomac River from the Arlington Memorial Bridge.

Certification Number	Permittee	Project Description
N/A (Non-jurisdictional wetland impacts)	D.C. Department of General Services and the Deputy Mayor for Planning and Economic Development	To construct a parking garage in a wetland for the St. Elizabeth's development.
N/A (WQC Denial)	U.S. Army Corps	Reissuance of Nationwide Permits
WQC-DC-014-018A	District Department of Transportation (DDOT)	Modification to include power washing a bridge over Potomac River.
WQC-DC-019-006	District of Columbia Water and Sewer Authority (DC Water)	To perform geotechnical soil borings in the Potomac River.
WQC-DC-019-006A	DC Water	Modification to include additional soil borings in the Potomac River.
WQC-DC-019-007	Schnabel Engineering	To perform sediment and water sampling in the Anacostia River.
WQC-DC-019-008	DDOT	To perform emergency streambank stabilization.
WQC-DC-019-009	District Department of Energy and Environment (DOEE)	To perform stream restoration.
WQC-DC-019-010	DDOT	To perform culvert maintenance.
WQC-DC-019-011	Partrac Geomarine, Inc. / NAVFAC	To perform sediment sampling and surveys in the Anacostia River.
WQC-DC-020-001	AECOM	Modification of WQC-DC-16-018 to perform additional sediment sampling in the Anacostia River.
WQC-DC-020-002	DOEE	To perform sediment sampling in Watts Branch and Nash Run.
WQC-DC-020-003	DC Water	To perform geotechnical soil borings in the Potomac River.
WQC-DC-020-004	DDOT	To create a regenerative stormwater conveyance system within an ephemeral stream.
WQC-DC-020-005	Joint Base Anacostia-Bolling	To replace an existing pier within the Potomac River.
WQC-DC-020-006	Department of the Army	Chesapeake Bay Total Maximum Daily Load Regional General Permit.

Certification Number	Permittee	Project Description
WQC-DC-2020-7	Navy/EA Engineering, Science, and Technology, Inc.	To repair an existing seawall along the Potomac River.
WQC-DC-2020-8	DMY Engineering Consultants, Inc.	To perform geotechnical soil borings in tidal wetlands adjacent to the Anacostia River.
WQC-DC-2020-8B	DMY Engineering Consultants, Inc.	Modification of WQC-DC-2020-8 to relocate two geotechnical borings.
WQC-020-009	NPS	To perform geotechnical soil borings in the Anacostia River.
WQC-DC-2020-9A	DC Water	To repair a sewer that runs parallel to Soapstone creek.
WQC-DC-020-010	Marbury Point Solar	To construct a solar canopy over an existing concrete pier within the Potomac River.
WQC-DC-020-011	National Park Service (NPS)	To repair the Chesapeake and Ohio (C&O) Canal walls.
WQC-DC-020-11A	NPS	Modification of turbidity curtain condition in original WQC-DC-020-11.
WQC-DC-2021-4	DOEE	To conduct sediment sampling in Nash Run and Watts Branch
WQC-DC-2021-47	Federal Highway Administration (FHA)	To repair a section of the tidal basin seawall.

2.8 Nonpoint Source Control Program

Environmental pollution from nonpoint sources occurs when water moving over land picks up pollutants, such as sediment, bacteria, nutrients, and toxics, and carries them to nearby waterbodies. Sediment and pollutant-laden water can pose a threat to public health. The pollutants may result from both natural sources and human activity. Stormwater runoff and associated soil erosion are significant causes of lost natural habitat and poor water quality in the District. Nonpoint source pollutants of concern in the District are nutrients, sediment, toxics, pathogens, oil, and grease. The origins of nonpoint pollutants in the District are diverse and include:

- Stormwater runoff due to the large amount of impervious surfaces in urban areas;

- Development and redevelopment activities;
- Urbanization of surrounding jurisdictions; and
- Agricultural activities upstream of the watershed.

The District's Nonpoint Source Plan is based on the following goals, which provide the framework for the District government to continue to develop and enhance its program.

- Support activities that reduce pollutant loads from urban runoff, construction activity, combined sewer overflows, and trash disposal for the purpose of attaining designated uses.
- Support and implement activities that restore degraded systems and maintain healthy habitats, species diversity, and water flows in all Anacostia River tributaries.
- Coordinate efforts with outside programs and adjoining jurisdictions to prevent and control nonpoint source pollution in the District to the maximum extent with the resources available.
- Support information and education campaigns that aim to prevent nonpoint source pollution from individual actions. These campaigns should reach at least 5,000 individuals each year and should target audiences who either visit, live, work, or teach in the District and its watersheds.
- Implement programs that aim to increase nonpoint source pollution runoff prevention practices on private property, reaching at least 1,000 properties per year.

2.9 Best Management Practices (BMP) Implementation

BMP Implementation by Sister Agencies

DOEE works closely with sister agencies by funding the design and installation of stormwater BMPs and GSI on municipal properties under the Clean Water Construction (CWC) grant program. For many of these projects, DOEE also provides technical expertise and project management assistance. During the current reporting period, 11 projects completed construction (Table 2.11).

Table 2.11 Clean Water Construction funded stormwater projects with sister agencies

Sister Agency	Project Title	Project Summary
DDOT	Alger Park Upland Low Impact Development (LID)	Install roadway retrofits including bioretention and pervious pavement
DDOT	Dix Street Impervious Surface Removal	Install right-of-way LID including bioretention, pervious pavement, and tree plantings

Sister Agency	Project Title	Project Summary
DDOT	Oregon Avenue Green Street	Install roadway retrofits including bioretention and pervious pavement
DDOT	Bunker Hill Impervious Surface Removal	Slip lane converted to compacted green surface
DDOT	7th St NW Alley	Alley retrofitted with pervious pavers
DPW/DGS	Ft. Totten Trash Transfer Station Improvements	Install retrofits that treat stormwater and leachate discharges
DPR	Palisades Community Center Stormwater Retrofits	Retrofit impervious surfaces with stormwater LID
DPR	Ft. Greble Recreation Center Stormwater Retrofits	Retrofit impervious surfaces with stormwater LID
DPR	Douglass Community Center Stormwater Retrofits	Retrofit impervious surfaces with stormwater LID
DPR	Congress Heights Recreation Center Stormwater Retrofits	Retrofit impervious surfaces with stormwater LID
DPR	Benning Park Recreation Center Stormwater Retrofits	Retrofit impervious surfaces with stormwater LID

Retrofits on Parkland Sites in the District

DOEE is in the third phase of a new program to retrofit parkland sites in the District. These "Parkland LID Retrofits" aim to improve water quality in the Anacostia and Potomac Rivers for the benefit of District residents, visitors, wildlife, and the environment, while providing high-quality outdoor recreational space and facilities for children and adults to learn, play, and connect with nature. To date, seven parkland sites have been environmentally restored or retrofitted with stormwater management controls (Amidon Park, Congress Heights Recreation Center, Woody Ward Recreation Center, Douglass Community Center, Fort Greble, Palisades Recreation Center, and Fort Stevens Recreation Center). Upcoming projects will include four new parkland sites in the District (Dwight A. Mosely Sports Complex/Taft Field, North Michigan Park Recreation Center, Benning Stoddert Recreation Center, and Dakota Park).

Inspection and Enforcement Updates

DOEE's Inspection and Enforcement Division Construction and Maintenance Branch (IED CMB) inspects construction sites in the District and assures compliance with District regulations and approved erosion and sediment control plans. DOEE also inspects existing stormwater management practices for compliance with approved stormwater management plans and to ensure the practices are effective and properly maintained.

In FY 2020 and FY 2021, CMB accomplished the following:

- Conducted a total of 8,974 erosion and sediment control inspections, 6,030 stormwater best management practice construction inspections, and 1,724 stormwater best management practice maintenance inspections;
- Issued a total of 229 notice of violations, 8 administrative orders, 103 notice of infractions, 97 maintenance notices and;
- Reviewed inspection and maintenance service completion reports for a total of 176 SWMPs through DOEE's self-inspection self-reporting program.

2.10 Stream Restoration Updates

Stream restoration and wetland restoration is the act of modifying a waterway or marsh to improve its environmental health and habitat. All District streams face similar threats from impervious surface runoff due to urbanization. Runoff increases stormwater flows, which in turn change the geomorphological flow of the stream, ultimately eroding its banks and bed. Stream restoration alleviates the stress of increased flow by creating a new channel to redirect stormwater away from the stream.

In FY 2020 and FY 2021, DOEE continued the construction of several projects, performed pre- and post-restoration monitoring at completed and future restoration sites, and completed one stream restoration project. WPD currently has 24,956 linear feet of restored stream for which it is conducting post-restoration monitoring, and is preparing designs for the restoration of over 35,000 linear feet of stream reaches over the coming years.

Branch Ave. Park

In FY 2021, DOEE completed a design-build contract for the restoration of a 550-foot stretch of stream which is tributary to Oxon Run. Designs for the Branch Avenue Park Stream Restoration project were completed in FY 2019, and the project was completed at the beginning of FY 2021. In addition to 550 feet of stream restoration, two degraded outfalls were stabilized and a trail was installed through the parkland, so residents have access to a recreational trail to the restoration site.

Fort Dupont Watershed Restoration

In FY 2020, DOEE awarded a design contract for 17,000 feet of stream and five (5) acres of wetland restoration at Fort Dupont Park. Throughout FY 2020 and FY 2021, the design contractor advanced designs for the restoration project.

The Fort Dupont Stream and Wetland Restoration Project will cover 10 project areas utilizing a mix of stream restoration methods, focusing on minimizing adverse impacts to the natural resources within the park. Nine of the project areas that cover approximately 17,000 feet of perennial stream are exclusively stream restoration combined with outfall stabilization. The tenth project area will be a wetland and stream day lighting project area for which 425 feet of piped stream between the bike trail and the Anacostia River is day lighted and land around it is designed to create a tidal wetland complex behind the seawall. DOEE anticipates 5-10 acres of wetlands being restored in this area. Design work should be completed by the end of FY 2022 or early FY 2023.

Oxon Run Stream Restoration

In FY 2020, DOEE issued a Request for Proposals to execute an Environmental Assessment (EA) and Preliminary Design Project for Oxon Run. The EA and Preliminary Design project is a collaborative effort among DOEE, the District of Columbia Department of Parks and Recreation, the National Park Service (NPS), DC Water, and community groups. The project will produce 30 percent (30%) stream designs with the option for 100 percent (100%) designs, produce a master park plan, assess sewer line work needed, and study the impacts to natural resources and the floodplain along Oxon Run.

Park Drive Gully Restoration

In FY 2021, DOEE issued a design-build contract for the Park Drive Gully Restoration, which will restore 1,300 feet of eroded stream gullies and stabilize four (4) collapsing stormwater outfalls. The project is located on Park Drive SE, Washington, D.C., with two different restoration sites: Fort Davis and Texas Avenue. Site One is part of the Fort Davis watershed. Site Two is part of the Texas Avenue watershed. Both sites ultimately drain into the Anacostia River and are in the same federal park area managed by NPS, known as Fort Davis Park.

Stickfoot Branch

In FY 2020 and FY 2021, DOEE advanced designs to the 90 percent (90%) phase for the Stickfoot Branch Stream Restoration project and completed the Environmental Assessment (EA) for the project. Stickfoot Branch, located in Southeast DC, drains into the Anacostia River. Restoration work will involve restoring 950 feet of highly eroded stream channel, protection of a sanitary sewer line, and the improvement of three storm sewer outfalls in the restoration area.

Pinehurst Branch Environmental Assessment

In 2017, DOEE began the EA process for Pinehurst Branch, which originates at the District/Maryland border and flows approximately 1.3 miles east–southeast on National Park Service (NPS) property to its confluence with Rock Creek. Land use in the 619-acre Pinehurst Branch watershed is approximately 70 percent residential and commercial development and 30 percent parkland. Approximately 70 percent of the watershed lies within the District, with the remaining 30 percent in Montgomery County, Maryland. The large amount of impervious surface in the watershed has caused significant erosion in Pinehurst Branch, resulting in sediment transport to Rock Creek and exposing sanitary sewer lines in the stream. DC Water has abandoned or removed existing sanitary sewer lines in Pinehurst Branch and DOEE will coordinate with them to restore the stream within the next few years.

The Pinehurst Branch Stream Restoration project will be a comprehensive restoration project that addresses current degraded conditions in the stream, including eroding banks, exposed sewer lines, and invasive vegetation. The first step in restoration is to conduct an EA. The scope of work in this EA will explore options to implement the proposed actions of the Pinehurst Branch Stream Restoration project that would take place on NPS property. The EA will consider the potential to implement restoration activities that could meet the following objectives: restoring approximately 7,900 feet of degraded stream reaches; creating conditions suitable for wildlife habitat; and improving the condition of existing wetlands.

The scope of work for a contractor to conduct the EA will include preliminary designs to respond to anticipated NPS and community comments. The scope of work is in development and solicitation is expected to begin in mid-FY22.

Stream Mapping Project

In FY20, DOEE awarded a grant to map underground and piped streams throughout the District. The project produced a District of Columbia Geographic Information System (DCGIS) database of historic stream in the District, an interactive StoryMap (available here) that tells the history of streams in the District, an inventory of the 100 most likely streams to daylight, and conceptual renderings for four potential stream daylighting opportunities.

2.11 Stormwater Pollution and Runoff Reduction

Private property, including commercial, residential, and nonprofit lands (religious and academic institutions), is the single largest land use in the District. These lands are one of the primary sources of pollution to District waterways, contributing pollutants through combined sewer overflow events and urban stormwater runoff.

One of the District's greatest needs and challenges is to reduce water pollution by incentivizing retrofits on individual properties. The District recognizes that it will be difficult to achieve its water pollution reduction goals unless it can convince property owners to adopt pollution prevention techniques on their lands. As such, the District has developed a variety of programs to encourage property owners to adopt nonpoint source pollution reduction techniques. These efforts include a Low Impact Development (LID) retrofit grant program and the following RiverSmart programs:

- RiverSmart Rooftops (Green Roof Rebate/Retrofit Program)
- RiverSmart Communities
- RiverSmart Homes
- RiverSmart Rewards for cisterns, impervious surface reduction, rain gardens and trees

RiverSmart Rooftops (Green Roof Rebate/Retrofit Program)

The DOEE program offers rebates for properties willing to install green roofs. Only properties within the Municipal Separate Storm Sewer System (MS4) area are eligible to participate. Residential, commercial, and institutional properties of all sizes are encouraged to apply. Participating property owners receive up to 15 dollars ($15) per vegetated square foot. A current inventory of green roofs in the District can be found at http://doee.dc.gov/publication/inventory-green-roofs.

Since 2006, the RiverSmart Rooftops rebate program has supported the installation of 104 projects. This amounts to a total of 544,000 square feet of vegetation installed, averaging 6,000 square feet per individual project.

In FY 2019, FY 2020, and FY 2021, the District added a total of 827 projects, encompassing over 2,053,873 square feet of green roof, to its portfolio.

RiverSmart Communities Program

RiverSmart Communities is a program aimed solely at installing LID retrofits on nonprofit and religious institutional properties. The program provides full funding for design and construction costs to participants on the condition that the nonprofit partner will perform outreach and education on watershed protection and relevant DOEE programs. Participants install LID practices such as rain gardens, BayScaping, permeable pavement, and rain cisterns to control stormwater pollution.

In FY 2019, FY 2020, and FY 2021, the RiverSmart Communities program implemented stormwater management practices at a total of 13 sites across the District at religious and/or nonprofit institutions. These 13 completed projects are treating 65,851 square feet of impervious surface within the District. Typical LID practices include permeable paving systems, bioretention, cisterns, rain gardens, BayScaping, and tree planting. Since it started in 2013, the RiverSmart Communities program has completed a total of 49 project installations. These projects have provided treatment for over 4.4 acres of nonpermeable land in the District.

RiverSmart Homes Program

The District has recognized the importance of targeting residents for pollution reduction measures because private property is the largest single land use in the city and, due to relatively small lot sizes, is the least likely to be required by regulation to install stormwater management practices. In 2008, DOEE developed RiverSmart Homes, a (GSI) retrofit program aimed at District single-family homes. The program started with eight (8) demonstration sites, one in each of the District's wards. It then expanded to a pilot program in the Pope Branch watershed and has been open to all District residents since the summer of 2009.

Through this program, DOEE performs audits of residential properties and provides feedback to residents on which GSI features can be safely installed on the property. DOEE also offers residents subsidized installations of any GSI recommended at the audit, which can include shade trees, native landscaping to reduce erosion or replace turf grass, rain gardens, rain barrels, and permeable pavers.

DOEE made some substantial changes to RiverSmart Homes in FY 2016 to increase participation. The program increased total incentives from $1,600 per property to $3,000 per property, began offering a new rain barrel for installation, and provided a rebate of $5-$10 per square foot for the removal impervious surfaces and the replacement of vegetation and/or installation of permeable pavers. Also, in 2019, the $50 copay for shade tree installations was eliminated. In fall of 2020, the program restricted permeable paver rebates to only those properties located in the MS4 and in Wards 7 and 8. Each permeable paver project has a maximum rebate of $4,000 per property. The program is popular with District residents, with an average of 1,500 residents registering per year.

For the reporting period covering July 1, 2019-June 30, 2021, the RiverSmart Homes program:

- Installed 773 rain barrels;

- Installed 205 rain gardens;
- Implemented BayScaping at 813 properties;
- Replaced impervious surfaces with green space or pervious pavers at 151 properties (over 80,000 square feet of treatment area); and
- Conducted 2,294 audits.

In FY20 and FY21, a total of 3,241 shade trees were planted.

RiverSmart Schools

DOEE partners with District schools to install LID practices to reduce runoff and nonpoint sources of pollution while providing stormwater-related educational resources. The program offers District schools technical support, professional development, field trips, community planting events, and assistance with installing GSI practices. These practices are specially designed to be functional as well as educational to fit the school environment. During this reporting period, DOEE retrofitted eight (8) schoolyard greening sites that include: John Burroughs Education Campus (2019), EW Stokes Public Charter School (2019), Cleveland Elementary (2020), Turner Elementary (2020), Friendship Tech Prep High School (2020), Friendship-Armstrong Public Charter School (2021), St. Thomas More Academy (2021), and Stanton Elementary (2021). More details below:

- The Friendship Public Charter School Technology Prep Campus project included an outdoor classroom, raised infiltration planter beds, rainwater cisterns, a large bioretention basin, removal of existing impervious surface, and conservation landscaping.
- The Turner Elementary project included an outdoor classroom, infiltration beds, permeable walkways, and conservation landscaping;
- The Cleveland Elementary project included improvement to an on-site gravel pad, and outdoor classroom, and the installation of 1,500 square feet of stormwater management BMPs.
- The John Burroughs Education Campus project included an outdoor classroom, a fruit tree grove (including persimmons, serviceberry, and eastern red bud trees), a small rain garden, rain barrels, and a pollinator meadow.
- The Elsie Whitlow Stokes Public Charter School project included a large conservation landscaping area with repurposed tree stumps for seating, fruit trees, and cherry blossom trees.
- The Friendship – Armstrong Public Charter School is a voluntary improvement project to remove asphalt parking lot on-site and install 2,182 square feet of BMP and outdoor classroom areas. The BMPs are located at a natural low point in the schoolyard and will capture and filter runoff from an area of 41,610 square feet surrounding the rain gardens swales.
    - Onsite retention achieved = 19,227 gallons
    - Onsite treatment achieved = 12,818 gallons
    - Total contributing drainage area (CDA) = 45,550 square feet
    - Eligible stormwater retention credit = 5,520 gallons

- The St. Thomas More Academy School has an enhancement project to remove concrete area on-site and install 1,471 square feet of BMP and adjacent outdoor classroom space. The schoolyard will capture and filter runoff from an area of 4,025 square feet surrounding the rain gardens.
  - Onsite retention achieved = 10,058 gallons
  - Onsite treatment achieved = 6,705 gallons
  - Total contributing drainage area (CDA) = 29,785 square feet
  - Eligible stormwater retention credit = 1,615 gallons
- The Stanton Elementary schoolyard improvement project removed asphalt and install 800 sf of BMP and outdoor education area. Project total disturbance is 5,000 SF with 2,000 gallons of onsite retention achieved.
  - Onsite retention achieved = 2,200 gallons
  - Onsite treatment achieved = 500 gallons
  - Total CDA = 4,000 sq. ft.

RiverSmart Rewards Incentive Program

Through participation in the RiverSmart Rewards program, property owners can apply for and receive discounts on their DC Water bill. District residents, businesses, and other property owners can earn a discount of up to 55 percent off the District Government Stormwater Fee (Stormwater Fee) when they reduce stormwater runoff by installing GSI or BMPs such as green roofs, bioretention, permeable pavement, shade trees and rainwater harvesting systems. GSI helps protect the Anacostia and Potomac Rivers and Rock Creek. GSI installed through the RiverSmart programs are automatically enrolled to receive the discount on a property's DC Water bill. A RiverSmart Rewards application periods last three (3) years and can be renewed upon their expiration, provided the GSI practices have been maintained.

The District charges the Stormwater Fee to support the implementation of the District's MS4 permit. DOEE uses these funds to keep trash and other pollutants out of the rivers, install GSI throughout the District, ensure that new construction and redevelopment projects incorporate GSI, and provide incentives for voluntary retrofits. This fee is based on the total area of impervious surface—including roofs, driveways, and patios—on a property. Impervious surfaces prevent rainwater from soaking into the ground. The Stormwater Fee is calculated using Equivalent Residential Units (ERUs). One ERU is equal to 1,000 square feet of impervious surface. Currently, the Stormwater Fee is $2.67 per month per ERU.

From 2015-2020, the RiverSmart Rewards program processed 2,515 total applications with participants saving a combined total of $239,676.27 off their monthly Stormwater Fees. The Contributing Drainage Area for the 5,709 BMPs earning RiverSmart Rewards discounts totaled 9,759,212 square feet and had a storage volume of 2,812,959 gallons.

In 2021, the RiverSmart Rewards program processed 847 applications with 105 applications being renewed. Program participants saved a combined total of $31,552.08 off their monthly Stormwater fees. The contributing drainage area for the 1,437 BMPs earning RiverSmart Rewards discounts totaled 377,045 square feet and had storage volume of 349,871 gallons.

Stormwater Retention Credit Trading Program

The Stormwater Retention Credit (SRC) Trading Program is an innovative market-based program to manage stormwater in the District of Columbia. Stormwater management regulations require large development projects to install stormwater BMPs to reduce runoff. Depending on their location in the District's sewersheds, properties can meet up to 100 percent of their regulatory requirement through off-site retention by purchasing SRCs from other properties that install runoff-reducing GSI voluntarily.

This flexibility allows regulated properties to pursue more cost-effective compliance methods and incentives properties to voluntarily install and maintain GSI that has the capacity to retain stormwater and thereby reduce the runoff that harms District streams and rivers.

The SRC market grew substantially in FY 2020 and FY 2021. In FY 2020, DOEE approved 45 trades for a total of 743,057 SRCs selling at an average price of $1.74 per credit. In FY 2021, DOEE approved 46 trades for a total of 308,774 SRCs at an average price of $1.63 per credit.

Through the SRC Price Lock Program, participants have the option to sell their SRCs to DOEE as a buyer-of-last-resort at fixed prices, effectively creating a price floor in the SRC market. This purchase guarantee provides investors with the confidence necessary to commit funding to SRC-generating projects. DOEE made an initial $11.5 million available through the SRC Price Lock Program. In FY 2021, DOEE continued to use the SRC Price Lock Program to encourage private investment in High-Impact SRCs. High-Impact SRCs are generated when new GSI practices are built as voluntary retrofits in areas draining to the MS4. Voluntary GSI in the MS4 area does the most to protect the District's rivers because, in these areas, stormwater runoff would otherwise drain untreated into our rivers and streams, typically without any treatment.

Through the SRC Price Lock Program, projects that have completed construction retrofitted a total of 24.6 acres within the MS4; once all eleven projects are complete, they will achieve a combined retrofit of over 29 acres. Of the $11.5 million DOEE committed to the SRC Price Lock Program, the projects that enrolled through FY21 accounted for $3.97 million to purchase nearly 3 million SRCs over 12 years of credit certification prior to selling any of their SRCs on the market.

In FY 2020, DOEE launched a program offering a new incentive for projects to achieve retention requirements using High-Impact SRCs. When development projects meet a portion of their regulatory requirements by using High-Impact SRCs, the highest levels of water quality restoration in the District are realized. DOEE subsidizes the sale of High-Impact SRCs when SRC Price Lock Program participants reduce the price they charge SRC buyers. DOEE will offer increased payments to sellers who further decrease the sale price in large or multi-year transactions. DOEE expects the program will make it cheaper for buyers to purchase High-Impact SRCs, thereby increasing the incentive to build more green stormwater infrastructure in the MS4.

Through the end of FY 2021, DOEE purchased or subsidized over $800,000 in SRCs. SRC Price Lock Program participants also sold a total of 327,523 SRCs on the market through the end of

FY 2021. If not sold on the market, these SRCs would have used $536,007.07 of DOEE's SRC Price Lock Program funds, which can now be used for other SRC Price Lock Program projects in the future.

Surface and Groundwater System (*formerly known* as Stormwater Database)

In FY 2015, DOEE launched the Stormwater Database to track projects that reduce pollution from stormwater runoff by managing submission, review, and inspection of Stormwater Management, Erosion and Sediment Control, and Green Area Ratio permit applications. In FY 2021, DOEE expanded the Stormwater Database to manage the submission and review of Floodplain Management, Wetlands and Streams, and Wells and Soil Boring permit applications, and changed its name to the Surface and Groundwater System (SGS) to reflect this expansion.

The SGS tracks each site's regulatory obligations and compliance, including off-site retention achieved with SRCs or payment of the in-lieu fee (ILF).

The public uses the Stormwater Database to:

- Submit compliance calculations and other information to support an application for DOEE approval of a Stormwater Management Plan, Erosion and Sediment Control Plan, or Green Area Ratio Plan, Floodplain Management Plan, Wells and Soil Boring Permit Application, and Wetlands and Streams Permit Application;
- Comply with an off-site retention obligation by applying to use SRCs or notifying DOEE of an ILF fee payment;
- Apply to certify, transfer, or retire SRCs;
- View the SRC registry; and
- Participate in voluntary programs that incentivize installation and maintenance of green stormwater infrastructure, including RiverSmart Homes and RiverSmart Rewards, which provides modest discounts on the District's impervious surface-based fees.

In FY 2020-2021, DOEE developed or implemented several new features and business processes to improve the breadth and accuracy of data in the SGS, including:

- Developing and implementing systems for the submission and review of Wetlands and Streams, and Wells and Soil Boring, permit applications;
- Developing and implementing a Self-Inspection, Self-Reporting system that allows property managers to voluntarily report green stormwater infrastructure maintenance;
- Developing new spatial analysis tools to better identify site and green stormwater infrastructure locations that lie within specific geographies (i.e., watersheds, sewersheds, etc.);
- Developing and implementing new business processes for federal agencies to report green stormwater infrastructure installation and maintenance with increased accuracy; and
- Developing and implementing improved systems for internal DOEE users to report data quality issues and other requests.

In FY 2020-2021, DOEE also improved public users' experience in the database by:

- Launching online fee payment and covenant approval systems, completing the transition to an entirely online permitting process and enabling DOEE permitting to continue with minimal disruption during COVID-related closures.
- Developing and implementing a new interface to improve useability and navigability.
- Updating public-facing trainings and user manuals; and
- Publishing new public-facing FAQ documents.

More information about the SGS can be found at: http://doee.dc.gov/SGS.

Tree Planting

The District of Columbia has been called "The City of Trees." It has a tree canopy cover of 38 percent, which is high for a dense, urban environment, but lower than what the canopy cover has been historically, even when the city had a higher population density. To improve air and water quality, reduce the urban heat island effect, and offset greenhouse gas emissions, the District adopted a 40-percent tree canopy goal. Mayor Bowser adopted a Sustainability Plan that calls for achieving the canopy goal by 2032. To achieve that goal, the District will need to plant an average of 10,800 trees annually.

In both FY 2020 and FY 2021, the annual planting goal was exceeded, with 12,974 and 13,470 trees planted respectively across the District.

The DDOT Urban Forestry Division (UFD), which maintains the District's street trees, increased its annual planting rate from 4,000-6,000 to an average of 8,400 over the past two fiscal years. In 2016, The District's Urban Forest Preservation Act of 2002 was amended and revised with several changes impacting management, protection, and coordination of, as well as jurisdiction over, tree canopy activities. Specifically, the Act expanded the UFD jurisdiction to manage all tree activities on District-owned lands. All public tree-related activities, including inspection, pruning, removal, and planting trees on District land, are now integrated into the District's 311 service request program and are directed to the UFD. The UFD also manages the tree permit removal process.

DOEE, through grants and contracts to various for-profit and non-profit partners such as Casey Trees, Washington Parks and People, BioHabitats, Natural Resource Design, and Anacostia Watershed Society, plants trees on private, federal, and other District lands.

The following are FY 2020 and FY 2021 tree planting accomplishments:

- Planted a total of 3,259 trees as part of the RiverSmart suite of programs (Homes, Communities, Schools and Tree Rebate Program);
- Planted a total of 174 trees in stream restoration projects;
- Planted a total of 3,251 trees across large public and private parcels including parks and school as a part of a new effort to increase tree canopy in these areas; and

- An additional total of 2,783 trees were planted District-wide by other partners' efforts, including Casey Trees, Trees for Georgetown, Pepco, the National Park Service, GSA, the National Cherry Blossom Festival, and through various regulated development.

Pollution Prevention Plans

District Municipal Critical Source Facilities

Since July 1, 2017, DOEE has been working with District municipal critical source facilities to develop, implement, and update stormwater pollution prevention plans. DOEE has met with all agencies that operate and manage municipal critical source facilities to begin developing, updating, and finalizing stormwater pollution prevention plans (SWPPPs). Of the 33 critical source facilities requiring SWPPPs in the District, all have up-to-date, certified SWPPPs.

DOEE developed a template SWPPP and SWPPP review checklist for municipal facilities on the official inventory, and provided training on how to develop SWPPPs on July 9, 2019, December 10, 2019, December 15, 2020, and May 21, 2021. The template SWPPP was updated in the Spring of 2021 to comply with the newly released 2021 EPA Multi-Sector General Permit (MSGP) for industrial stormwater runoff. DOEE also provided site maps for any municipal critical source facility that requested one. All SWPPPs were reviewed by DOEE to ensure they met MS4 Permit and, when appropriate, MSGP requirements. Twenty-five (25) facilities updated their SWPPPs in the winter and spring of 2021 to make the necessary changes to comply with the 2021 MSGP.

In total, DOEE provided assistance and feedback on 48 SWPPPs. To streamline and standardize feedback on SWPPPs, DOEE developed a SWPPP checklist in July 2019. DOEE provided comments on all SWPPPs using the checklist to clarify expectations for what a SWPPP should include, to correct errors, and to ensure all SWPPPs met MS4 Permit and MSGP requirements.

Businesses and other entities

DOEE launched the GreenWrench Technical Assistance program in the spring of 2018 with EPA funding to provide compliance assistance and encourage pollution reductions at automotive repair and body shops in the District of Columbia. Since then, DOEE has secured four (4) more years of funding for the program. These operations are critical sources of stormwater pollution in the MS4 and direct drainage areas of the District. As part of these efforts DOEE developed a template pollution prevention plan (P2 Plan) that includes the elements of a SWPPPs, but also includes sections on air quality, toxic substances, and energy use. The template P2 Plan and an accompanying GreenWrench Guidebook are being updated during this period to better incorporate electric and hybrid vehicle considerations. The Template P2 Plan and Guidebook can be found on DOEE's website (https://doee.dc.gov/service/greenwrench).

2.12 Environmental Education and Outreach

DOEE's mission includes providing environmental education and outreach to raise environmental stewardship, increase awareness of environmental challenges and initiatives, and inform stakeholders of opportunities to contribute to the restoration of the District's waters and natural habitats. The support programs aim to prevent NPS pollution from individual actions by carrying out effective information and education campaigns.

Meaningful Watershed Educational Experiences

As part of DOEE's sub-grant program, several initiatives were funded for nonprofit partners to create Meaningful Watershed Education Programs (MWEEs) for hundreds of District youth. In FY 2020 and FY 2021, the Alice Ferguson Foundation partnered with Living Classrooms of the National Capital Region and Nature Bridge to conduct both in-person and virtual MWEE programs with activity boxes. In the period January - March 2020, 1,701 fifth-grade District Public School and Charter School students participated in a three-day, two-night educational program. The COVID pandemic necessitated a move to virtual lessons and for the remainder of FY 2020 and FY 2021, 2,199 students participated in the educational program.

In addition to the overnight MWEE program, DOEE funds a Middle School MWEE through a grant awarded to a nonprofit partner, Living Classrooms, to offer day programs to students in Wards 7 and 8. This program reached 120 students in FY 2020 and 176 students in FY 2021.

Project Learning Tree

Project Learning Tree (PLT) is an internationally recognized program that trains Grade K through12 educators in innovative techniques for exploring a wide range of environmental concepts with students and teaches critical thinking skills that lead to environmental stewardship. DOEE offers PLT training workshops free to those that request them. During this reporting period, DOEE incorporated the PLT curriculum into the RiverSmart Schools' virtual professional learning sessions. An abbreviated PLT curriculum was introduced in the training sessions during the COVID-19 pandemic, which resulted in a reduced number of teachers attending the PLT session.

RiverSmart Schools

RiverSmart Schools is a program that works with applicant schools within the District to install LID practices to reduce runoff and nonpoint source pollution while providing stormwater-related educational resources. These practices are specially designed to be functional as well as educational to fit with the school environment. Additionally, schools that participate in the RiverSmart Schools program receive teacher training on how to use the sites to teach to curriculum standards and how to properly maintain the sites.

Due to COVID-19 pandemic during school years of 2019-2020 and 2020-2021, the professional learning sessions were pivoted to virtual trainings for teachers and staff. This also gave opportunities for parents and school volunteers to virtually join. In 2020 and 2021, the program provided a total of 40 teachers and school community staff with eight (8) professional learning sessions on the RiverSmart schools site usage and program.

District of Columbia Environmental Education Consortium

DOEE helps to organize a network of environmental educators throughout the District so that ideas and resources can be shared among them. The D.C. Environmental Education Consortium (DCEEC) provides opportunities for networking, event coordination, and program partnering. The program also provides environmental expertise, professional development opportunities, curricula and resources, and hands-on classroom and field studies to District schools.

During this reporting period, DCEEC, along with the United States Botanical Garden and DOEE, hosted the annual DC Teacher's Night virtually, called DC Teacher's Night: An ONLINE Environmental Education Resource Event. The event featured 24 exhibitors with K-12 resources to use for the virtual school year. There were 139 teachers registered and 81 attended the virtual evening event.

The online resource evenings connected District teachers with area environmental educators to learn about resources to engage students with the outdoors and about ways to bring the environment into the classrooms. During the online DC Teacher's Night event, teachers had the opportunity to join in two different virtual platform breakout groups and then enter another virtual platform, Topia, which is an interactive virtual meeting space, to continue conversations and share ideas with their peers.

District Environmental Literacy Plan

During this reporting period, DOEE collaborated with stakeholders to implement the Environmental Literacy Plan (ELP) and draft an updated plan, which was released in 2020. The ELP creates the groundwork to develop academic standards and measure student environmental literacy. During this reporting period: 38 percent of students in the District learned about environmental and sustainability concepts; at least 40 elementary schools taught about the environment at every grade level; and the Community Stormwater Solutions Grant was revamped for adult education in historically marginalized communities and those that are challenged with disproportionate impact from pollution. Furthermore, updated in 2019, Sustainable DC 2.0 now includes education as a stand-alone topic area for implementation and continues to recognize that the ELP is the appropriate platform on which to build environmental and sustainability education into District schools. The updated ELP framework will help identify the best places in school curriculum where DOEE programming will fit. This project will also coordinate Green Career Expos for high school students to learn about green jobs and summer internships. DOEE continues to work with OSSE to implement the ELP, which will bring environmental education, including meaningful outdoor experiences at-home and beyond, to District youth.

The Anacostia Environmental Youth Summit

The Anacostia Environmental Youth Summit (AEYS) is a District-wide showcase that spotlights youth voice, demonstrates environmental literacy, and encourages stewardship for the Anacostia and Potomac Rivers and the Chesapeake Bay. By exemplifying an ethic of stewardship and responsible action, the Youth Summit emphasizes youth leadership and innovation. The annual AEYS occurs every May of the year. Due to the COVID-19 pandemic, the Anacostia

Environmental Youth Summit in May 2020 and May 2021 were suspended. The AEYS initiative was pivoted to virtual STEM Fairs, resulting in lower student participation numbers. DOEE staff continues to support student projects at individual school's virtual STEM Fairs. In 2020, the virtual Fairs hosted 6 student projects focusing on environmental and sustainable categories. In 2021, the virtual Fairs hosted 12 student projects from 3 schools focusing on environmental engineering and sustainable categories.

Anacostia River Explorers

Anacostia River Explorers are boat tours that educate the public about the Anacostia River through one and two-hour motorized and canoe tours. Participants learn about the Anacostia River's human and natural history, the threats it faces, and what solutions are being undertaken to help the River realize its full potential as an invaluable asset for the District and its residents. There are two grantees implementing this program for the District. From July 2019-June 2021, the grantees hosted 349 motorized or paddle tours of the Anacostia River that engaged 4,239 participants. Tours were greatly impacted by the COVID-19 pandemic, including a postponement of most tours from March 2020 to April 2021. During the interim period, the grantees pivoted to develop virtual materials including video tours of the River and educational content aimed at engaging students. During the reporting period the virtual materials were viewed over 1,500 times and were shared at conferences and virtual event

Adopt-Your-District Program

Adopt-Your-District is a program that allows volunteers to adopt parks, blocks, or segments of streams throughout the District. This program is a collaboration effort between DOEE, District Department of Parks and Recreation, National Park Service, and Office of the Clean City.

Adopt-A-Stream

In FY 2018, AFF launched a pilot Adopt-A-Stream program with funding from DOEE's Trash Free Communities grant. With training provided by the AFF and Rock Creek Conservancy, this program allows Adopt-A-Stream volunteers to adopt a segment of District stream, collect data on the types of trash found in the area, and organize cleanups to help protect the stream and beautify the area. Over 30 volunteers were trained for the Adopt-A-Stream program between September 2020 and April 2021.

Adopt-A-Park

In FY 2021, DOEE assisted in identifying parks of interest and establishing correct government contacts for 17 District residents and organizations interested in adopting a park through the Adopt-A-Park program.

Green Zone Environmental Programs

Every summer, DOEE partners with the Marion Barry Summer Youth Employment Program to provide youth and young adults, ages 14-24, with an opportunity to learn about energy and environmental issues, complete community-based environmental projects, and prepare for careers through the Green Zone Environmental Program (GZEP).

DOEE's Watershed Protection Division (WPD) releases the GZEP Watershed Protection Grants to fund organizations to provide education, training, and activities to GZEP participants. In FY20, the GZEP Watershed Protection Grants funded 3 organizations to provide virtual training to 75 youth. Over the course of 6 weeks, youth were educated on various activities and topics related to green jobs, pollution in our watershed, environmental activism, and more.

Watershed Stewards Academy

The Watershed Stewards Academy is an eight-week certification course taught by DOEE and Anacostia Watershed Society (AWS) staff for District residents who want to address local pollution problems in their local watersheds. The program is funded by a DOEE grant to AWS and is part of the National Capital Region Watershed Stewards Academy, which is a coalition of watershed protection groups in the Potomac, Rock Creek, Anacostia, and East Patuxent watersheds. Once they've completed the course, these residents are considered to be Master Watershed Stewards in their local watershed. These alumni serve as resource people and community leaders in the effort to clean up local waterways, to coordinate efforts to infiltrate stormwater, and to reduce. In FY 2020 and FY 2021, through a hybrid class model (part virtual and part in-person) 56 District residents became Watershed Stewards.

Storm Drain Marking Program

DOEE installed 357 storm drain markers, during this period. DOEE has maintained its geolocated database of marked storm drains and worked with five different volunteer groups that supported this work, including the National Park Service, sister agencies such as Department of General Services, schools, and citizen volunteers.

2.13 Job Training Programs

River Corps

Since 2017, DOEE has led a green stormwater infrastructure and job training program, the River Corps, run by the Latin American Youth Center. Each year, two cohorts comprised of 7-10 youth, participate in a five-month-long green stormwater infrastructure job training program where young people learn how to maintain LID sites, inspect RiverSmart Homes installations, perform trash cleanups, remove invasive plant species, and photo monitor upcoming and existing stream restoration projects. From July 1, 2019, to June 30, 2021, the River Corps monitored the following streams: Alger Park, Bingham Run, Broad Branch, Fort Dupont, Linnean Park, Milkhouse Run, Nash Run, Pope Branch, Spring Valley, Springhouse Run, Stickfoot Branch, and Watts Branch.

2.14 Cost/Benefit Assessment

The District is investing significant resources to address the sources of impairment to local waters. This includes efforts to manage and upgrade the Blue Plains Wastewater Treatment Plant, reduce combined sewer overflows and manage stormwater runoff in the MS4 areas of the District as described in the following sections.

Cost for Managing Blue Plains Wastewater Treatment Plant and Combined Sewer Overflows

The District of Columbia has and continues to commit significant amounts of resources to improve the quality of its waters. Effective wastewater treatment, sanitary sewer system maintenance, combined sewer overflow control, and stormwater management are the principal elements in water pollution control. The Blue Plains Wastewater Treatment Plant (WWTP) operated by DC Water provides wastewater services to over two million customers in the District and the surrounding jurisdictions of Maryland and Virginia. Figure 2.4 shows the areas/jurisdictions served by the WWTP.

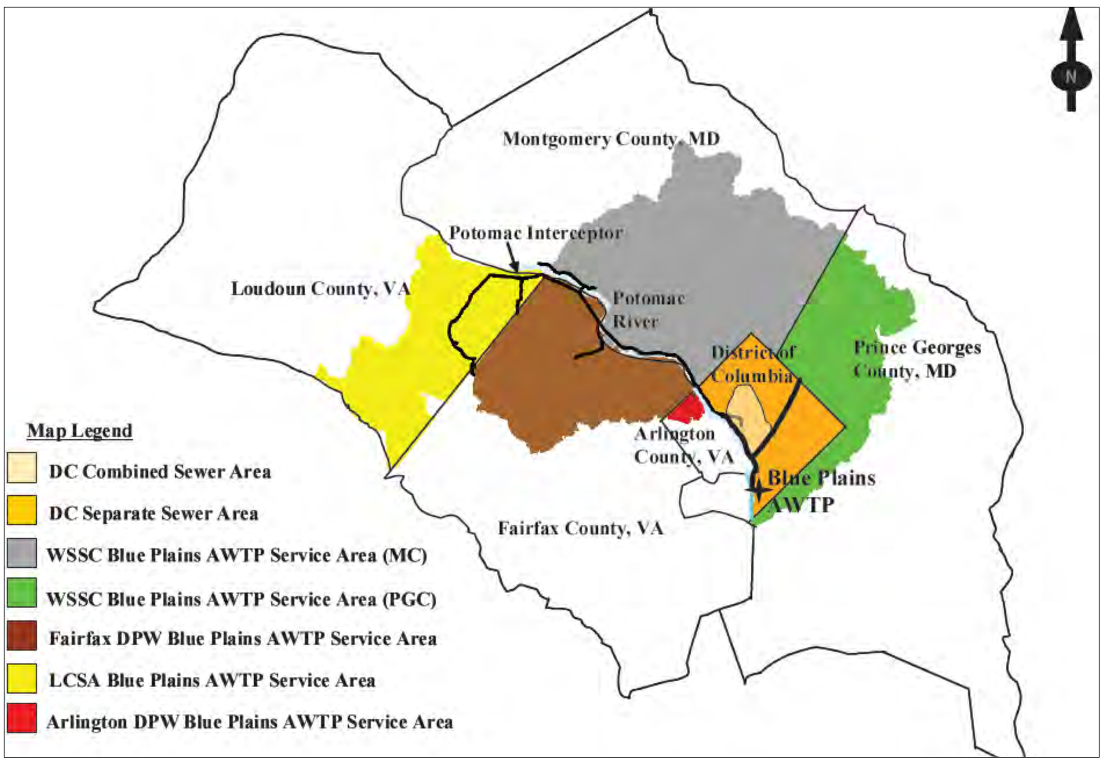


Figure 2.4 Map of stormwater and wastewater treatment service areas.

The wastewater treatment costs are apportioned between the jurisdictions served by WWTP. The financial responsibilities of each jurisdiction were updated under the new Blue Plains Intermunicipal Agreement of 2012, effective April 3, 2013 (IMA at http://www.mwcog.org/uploads/pub-documents/u15dVlc20130506094101.pdf). The District's portion of the capital and operations & maintenance costs for wastewater treatment, sanitary sewer maintenance and engineering and technical services constitute 45.8 percent of the total cost incurred by DC Water. As the only jurisdiction with combined sewer systems, the District is also responsible for combined sewer overflow control costs. Description of the various elements and associated costs are presented below.

Engineering and Technical Services

DC Water Engineering and Technical Services programs provide support to the planning, design, and construction of new and rehabilitation projects across all functions of the collection and treatment of wastewater. The functions include system planning, technical engineering expertise, and oversight of construction Water and technical.

Sanitary Sewer System Maintenance

The bulk of the cost of the wastewater collection system is associated with the assessment, rehabilitation, and replacement of the aging infrastructure in the District. High bacteria counts in various waterways have been attributed to leaking sanitary sewers. Under a multi-year Sewer Assessment Program, DC Water completed the 10-year Sewer System Facilities Plan in 2009 (Executive Summary at https://www.dcwater.com/sites/default/files/documents/Water%20System%20Facilities%20Plan-Executive%20Summary%20June%202009.pdf). The plan addresses the evaluation of the physical condition and capacity of the sewer system, identification and prioritization of rehabilitation needs, record keeping and data management, as well as ongoing inspection and rehabilitation programs. In accordance with key findings and recommendations of the plan, priority projects to rehabilitate sewer collection systems as well as pumping facilities are currently ongoing. In particular, the rehabilitation of sewers in stream valleys is critical to the significant water quality improvement in DC streams.

Subsequent programs under the DC Clean Rivers Projects are ongoing to further reduce sewers inflows in the District's waterways. Among the programs, is a massive infrastructure and support program designed to capture and clean wastewater during rainfalls before it ever reaches the waterways (more information at https://www.dcwater.com/cleanrivers).

Wastewater Treatment

Under the Chesapeake Bay Agreement, the Blue Plains WWTP was the first facility to meet the nutrient reduction goals of 40 percent from the 1985 levels. The WWTP operates under stringent NPDES permit conditions. Significant plant-wide upgrades, and rehabilitation and installation of support systems are ongoing. Among the major projects is the Nutrient Removal project to meet regulatory requirements and the goals of the Chesapeake Bay Agreement. In 2007, DC Water proposed to interface the overall Blue Plains Nutrient Removal project with the Combined Sewer Overflow Long Term Control Plan (LTCP) finalized in 2002. In 2015, DC Water finalized the LCTP Modification for Total Nitrogen Removal/Wet Weather Plan (TN/WW Plan). The TN/WW Plan is detailed in the report "Long Term Control Plan Modification for Total Nitrogen Removal/Wet Weather Plan, District of Columbia Water and Sewer Authority, Washington, DC, May 2015." (http://www.dcwater.com/sites/default/files/green-infrastructure-ltcp-modificaitons.pdf)

The major components of the project include construction of the Blue Plains Tunnel (extending from the Anacostia Tunnel System to Blue Plains), construction of a tunnel dewatering pumping station, and enhanced clarification facilities at Blue Plains. These projects will remove nitrogen at levels sufficient to meet the Blue Plains federal NPDES discharge permit requirements as well as the Chesapeake Bay Agreement for nutrient reduction. The projects will simultaneously achieve CSO reduction equal to or better than the approved LTCP.

Combined Sewer Overflow Long-Term Control Plan

DC Water developed the LTCP in 2002. The LTCP involves the construction of large underground tunnels that will serve as a collection and retention system for the combined sewer during rainfall conditions. In 2005, DC Water and the District entered into a Consent Decree with the EPA and the United States Department of Justice requiring implementation of the LTCP.

On January 14, 2016, a modification to the 2005 Long Term Control Plan (LTCP) Consent Decree was entered into by the parties to include innovative green stormwater infrastructure practices to achieve the reduction of combined sewer overflow volume by 96 percent system-wide (for the Anacostia and Potomac rivers and Rock Creek) and offer additional community benefits. The LTCP is to be implemented over a 25-year period under the amended Consent Decree.

Table 2.12 shows the predicted CSO reduction and project costs, and Table 2.13 summarizes the costs associated with the treatment of wastewater for the years 2020 and 2021.

Table 2.12 Predicted CSO Reduction and Cost

	Before CSO Controls[1]	LTCP[2]	After Implementation of TN/WW Plan Selected Alternative[2]
CSS Overflow Volume (mg/yr)			
Anacostia River	2,142	54	0
Potomac River	1,063	79	79
Rock Creek	49	5	5
Number of Overflows (per yr)			
Anacostia River	82	2	0
Potomac River	74	4	4
Rock Creek	30	5	5
Capital Cost Opinion ($, ENR CCI=7888)			
Capital Cost ($Million)[3]	0	$28	$783
% above the lowest alternative	0	N/A	7
% above the LTCP[4]	0	N/A	2,696

[1] Source: Combined Sewer System Long Term Control Plan, Final Report, District of Columbia Water and Sewer Authority, July 2002, Table ES-4.
[2] Source: Long Term Control Plan Modification for Total Nitrogen Removal/Wet Weather Plan, District of Columbia Water and Sewer Authority, Washington, DC, May 2015, Appendix C: TN/WW Plan, Table 5-1.
[3] Construction Cost Index = 7,888
[4] Computed. The capital cost of CSO reduction if not implemented (i.e., "Before CSO Controls"), there will be no cost incurred. Therefore, the amount is set to zero.

Table 2.13 Cost Summary of Water Pollution Control Activities

Activity Area	FY 2020 (in thousands)	FY 2021 (in thousands)	Total FY 2020-FY 2021 (in thousands)
Wastewater Treatment	48,887	78,992	127,879
Sewer Services	23,786	50,547	74,333
Combined Sewer System	181,317	170,842	352,159
Engineering and Technical Services	33,548	24,937	58,485

Source https://www.dcwater.com/sites/default/files/finance/budgets/Approved%20FY%202022%20Budget%20Book_0.pdf

Cost for Stormwater Management in MS4

The District has embarked on an aggressive stormwater management program as part of the implementation and administration of activities required by MS4 Permit issued by EPA. The area covered under the permit is entirely within the jurisdiction of the District and constitutes approximately two-thirds of the city's area (DC separate sewer area in Figure 2.5).

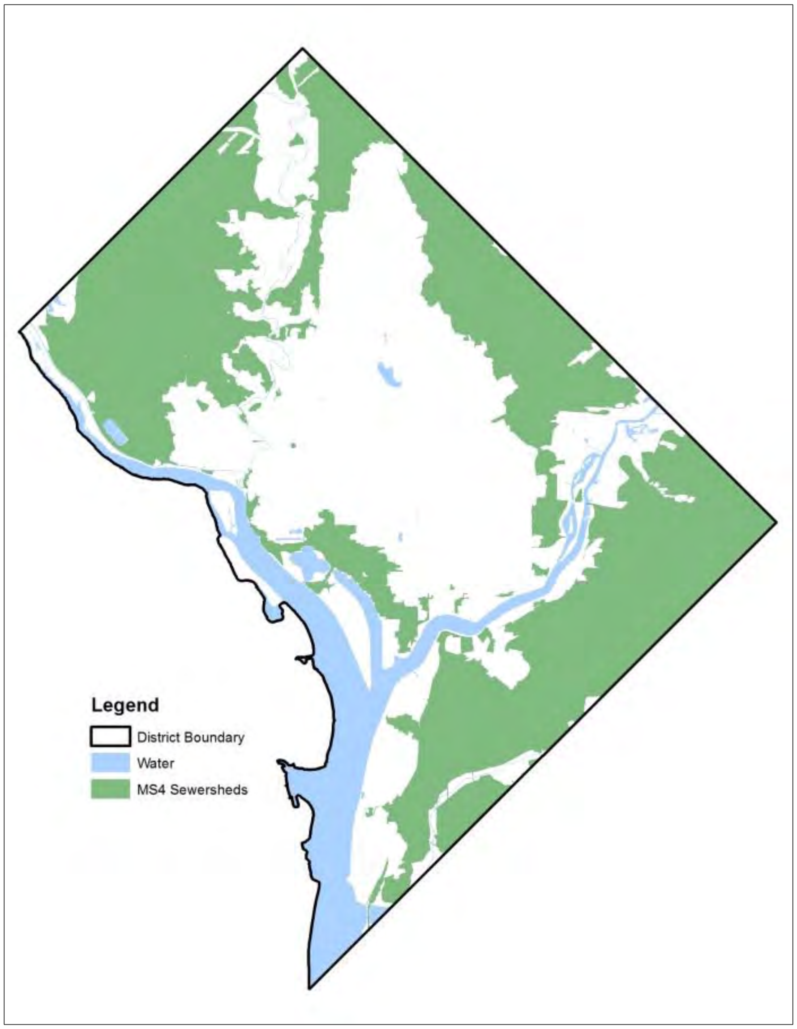


Figure 2.5 Map of MS4 sewershed coverage area.

The District's stormwater management efforts cover an array of activities including research and demonstration projects, drainage improvements, monitoring and control of various types of pollutants from various sources, enforcement, and public education. Six (6) different agencies collaborate to manage stormwater in the District - DOEE, DC Water, the Department of Public Works (DPW), DDOT, the Department of General Services (DGS), and the Office of Planning (DCOP). Table 2.14 outlines some of the related activities performed by each agency.

Table 2.14 Agency Stormwater Functions

Agency	Compliance Activity
DOEE	MS4 program administration Source identification Pollution Prevention Wet/dry weather monitoring program Wet weather screening program Flood control projects review Construction management and plan review Pollutant control from hazardous waste sites Pesticide, herbicide, and fertilizer application Promoting LID practices Illicit discharge detection Sediment erosion control Inspection/enforcement
DC Water	Floatables reduction program Pollution prevention Operation and maintenance of sewer infrastructure Catch basin cleaning Illicit discharge detection
DPW	Street sweeping Seasonal leaf and holiday tree collection program Pollution prevention Household hazardous waste collection Deicing and snow removal Stormwater management at municipal waste transfer stations
DDOT	Pollutant reduction from vehicles and roadways Pollution prevention LID practices in public right-of-way
DGS	LID practices on District-owned properties Pollution prevention
DCOP	Planning for neighborhoods, public facilities, parks and open spaces, etc. Urban design and land use review

The District's Stormwater Permit Compliance Amendment Act of 2000 established the Stormwater Permit Compliance Enterprise Fund to provide revenue for the mitigation of pollutants in stormwater discharges. The cost for stormwater management is dependent on the MS4 permit requirements. The District is required to certify that it has "sufficient finances, staff, equipment, and support capabilities" to implement the provisions of the Permit in its MS4 Annual Report 1. Table 2.15 shows the expenditures in FY2020 and budget for FY2021 for DOEE's MS4 Permit-related costs.

In addition to DOEE Enterprise Fund spending, other District agencies spend local funding on programs and initiatives that also provide stormwater management benefits, such as street sweeping by DPW, and GSI projects on public buildings by DGS or in public right-of way areas by DDOT. The most recent MS4 Annual Report, including the required funding certification, can be found at:
https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/2019%20MS4%20Annual%20Report-FINAL-for%20web.pdf

Table 2.15 FY 2021 Enterprise Fund Expenditures and FY 2022 Enterprise Fund

Fiscal Year 2021 Expenditures	Fiscal Year 2022 Budget
$11,329,376	$16,761,532

2.15 Benefits

Comprehensive stormwater and wastewater management is making the benefits of clean rivers and streams apparent in the District. The District of Columbia Comprehensive Plan provides a foundation for policies that support ecologically sound waterfront development, which contributes to these benefits. Among the key elements of the plan is to "create and enhance relationships between the rivers and District residents, develop urban waterfronts and water related recreation in appropriate locations, and establish attractive pedestrian connections from neighborhoods to activities along the waterfronts." Development and rehabilitation of waterfront properties to include residential, retail, office space, and green space areas have significantly increased. There is a remarkable development going on at the Washington D.C. Wharf (Waterfront project), which is referred to as a place "Where D.C Meets". The first phase of the Wharf is completed, creating a beautiful, epic, and vibrant waterfront view in the District's Southwest region. The Wharf's phase 2 is scheduled to open in 2022 and will add more square feet of mixed space usage, such as residential, office, marina, parks, and public spaces, to the District's Southwest Waterfront. These developments will attract more people from different parts of the world and subsequently enhance the recreational use of District waters. More information about the Wharf can be found at https://www.wharfdc.com/wharf/ and https://phase2.wharfdc.com/about/the-wharfs-phase-2/.

One highlight is the recent development of the Anacostia River waterfront, which promotes recreational use of the waters. A recreational survey was conducted for three District waterways (Rock Creek, Potomac River, and Anacostia River) in the summer of 2019 and 2021 as part of the District's citizen water quality monitoring program. The recreational activities observed in the three District waterways were rowing/sculling, powerboating, kayaking and canoeing, fishing, sailing, paddling, boating, water play by children, contact with wet dog, contact when hiking, and others. The main recreational activity for Rock Creek, the Anacostia and Potomac Rivers are water play by children, rowing/sculling, and powerboating respectively. The most recent report, including these findings, can be found at https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/2021VWQM_report_Final%20sm.pdf).

The restoration of the District's waters is a critical component of economic development. The quality of the District's waters continue to improve. Although a quantitative assessment of the benefits resulting from current water pollution control expenditures is difficult, the long-term benefits over time are evident. A fish tumor survey conducted by the United States Fish and Wildlife Service (FWS) ("Temporal and Spatial Patterns in Tumor Prevalence in Brown Bullhead (*Ameiurus nebulosus*) in the Tidal Potomac River Watershed," April 2013) examined fish tissue analysis from the Anacostia River sampled in the years of 1996, 2000–2001, and

2009–2011. The survey shows a marked decrease in the prevalence of tumors in bottom-dwelling fish in the Anacostia River. In addition, annual surveys by the DOEE FWD document the general stability of the resident and migratory fish populations in the District's waters.

The improved water quality and health of fish in District waters supports fishing and other recreational activities, which benefits District residents and visitors.

Chapter 3 Surface Water Assessment

3.1 Background

Section 303(d) of the federal CWA and EPA implementing regulations require states to prepare a list of waterbodies or waterbody segments that do not meet WQS even after all the pollution controls required by law are in place. Waterbodies may be divided into segments. Waterbodies or waterbody segments not meeting the appropriate District WQS are considered to be impaired. The law requires that information for the assessment, impairment listings, and reporting requirements of Section 303(d) and 305(b) of the CWA be submitted to EPA in an Integrated Report. Current EPA guidance requires all state waters be categorized into five assessment categories. The categories can be found in the Category Placement Methodology section below.

States must develop TMDLs for waterbody segments on the impaired list in Category 5. The Potomac and Anacostia Rivers, Rock Creek, and Watts Branch are divided into segments for assessment purposes. The Potomac River has three segments; the Anacostia River, Rock Creek, and Watts Branch have two segments each.

Basis for Consideration of Data

Various data sources were considered to prepare the 303(d) list in 2022. As the 303(d) list is a tool used in the TMDL process, the District wants to ensure that the approved 303(d) list is based on data that utilized unbiased, scientifically sound data collection and analytical methods. The Water Quality Monitoring Regulations (Title 21, Chapter 19 of District of Columbia Municipal Regulations) were developed to ensure accurate, consistent, and reproducible water quality monitoring data for decision-making purposes. Data that did not satisfy the monitoring regulations mentioned above was not used in developing the District 303(d) list in 2022. See Appendix 3.4 Draft District of Columbia 303(d) List.

In July 2021, a request for data was sent to organizations that may have data on the District's waters. The 2022 list enumerates specific pollutants of concern in various waterbodies or waterbody segments. The 2022 303(d) list was established using the following data sets:

- 2020 303(d) list;
- District Ambient Water Quality Monitoring data for 2017–2021;
- District Municipal Separate Storm Sewer System 2017–2020 Monitoring Data;
- Stream Survey data collected between 2017–2021;
- District Phytoplankton, Zooplankton and Benthic Macroinvertebrate Samples Report, 2009; and 2019;
- USGS Nontidal monitoring stations at Hickey Run (USGS station 01651770), Watts Branch (USGS station 01651800), and Rock Creek (USGS station 01648010), 2017–2021;
- The Anacostia Riverkeeper Citizen Science Project, and
- District Fish Tissue Contamination Report, 2017.

3.2 Use Support Determination

For the 2022 IR reporting cycle, the District developed a new assessment and listing methodology. Based on the new assessment methodology, the District reevaluated impairment causes and TMDLs for toxics for all District waterbodies. The District of Columbia Surface Water Assessment and Listing Methodology, February 2022, and Reevaluation of Impairment Causes and TMDLs for Toxics in District of Columbia Waterbodies, March 2022, can be found in Appendix 3.1 2022 Assessment and Listing Methodology, Use Support and Cause by Pollutant.

Table 3.1 lists the threshold used to make designated use determinations for physical pollutants, chemical pollutants and *E. coli*. For physical and chemical pollutants, the 305(b) guidelines indicated that, whenever more than 10 percent of the water quality samples collected exceed the criterion threshold, the WQS is not attained (U.S. EPA 2002). See Appendix 3.1 2022 Assessment and Listing Methodology, Use Support and Cause by Pollutant.

Table 3.1 Threshold for Physical and Chemical Pollutants and Pathogens

Support of Designated Use	Threshold for Physical and Chemical Pollutants and Pathogens
Fully Supporting	For any pollutant, standard exceeded in ≤10% of measurements. Pollutants not found at levels of concern.
Not Supporting	For any one pollutant, standard exceeded in >10% of measurements. Pollutants found at levels of concern.
Not Assessed	Not assessed.
Insufficient Information	Data to determine if the designated use is fully supporting/not supporting is not available.

Designated Uses

The following are designated uses for the surface waters of the District of Columbia:

- Class A -Primary contact recreation (swimmable):
- Class B - Secondary contact recreation and aesthetic enjoyment (wadeable):
- Class C - Protection and propagation of fish, shellfish, and wildlife (aquatic life):
- Class D - Protection of human health related to consumption of fish and shellfish (fish consumption);
- Class E - Navigation (ability to travel freely up and down the river using assorted watercraft, and absence of man-made objects that impede free movement).

Class A

Class A water quality criteria are pH, turbidity, and pathogens. Use support decisions for pathogens are based on *E. coli* bacteria data.

Class B

Class B water quality criteria are aesthetics, pH, and turbidity. A regional trash TMDL for the Anacostia River exists and the narrative WQS mandate the aesthetic qualities of Class B waters be maintained.

Class C

Biological data, habitat data, and physical/chemical data, collected during 2017-2021 are used to determine aquatic life (Class C) use support for small District streams. Biological/habitat data for small streams was evaluated using EPA stressor identification guidance. If a stream's aquatic life use is not supported based on the biological information found in the District's Tributary Assessment Report (draft internal document), it is listed under Category 5 of the list, but only if a TMDL has not been completed.

Table 3.2 indicates streams from which rapid bioassessment data was collected. The reference streams are in Maryland. The Maryland Biological Stream Survey, 2014, was the data source.

Aquatic life use support is based on the relationship between observed stream biological conditions compared to the reference stream condition, which produced a percent of reference stream biological condition. This scale rates streams as impaired at 0–79 percent of the reference condition percentage, and non-impaired at 80–100 percent. EPA 305(b) guidelines on criteria for aquatic life use support classification recommend designation of "not supporting" if impairment exists and "fully supporting" if no impairment exists. Piedmont and Coastal Plain Ecoregion tributaries were assessed using reference condition data from Montgomery and Prince George's Counties, Maryland. The Piedmont Ecoregion is characterized by relatively low, rolling hills with heights above sea level between 200 feet and 800 feet to 1,000 feet. Its geology is complex, with numerous rock formations of different materials and ages intermingled with one another. The Coastal Plain Ecoregion has both low elevation and low relief, but it is also a relatively flat landform and has an average elevation less than 900 meters above sea level, extending some 50–100 kilometers inland from the ocean.

Biological Integrity Class scores were determined using scoring criteria adapted from Montgomery County, Maryland. These scoring ranges were also applied to the Coastal Plain Ecoregion values. Habitat assessments were compared directly to each ecoregion's corresponding reference condition habitat evaluation.

The tributaries in Table 3.2 were assessed for the Aquatic Life Use category using data collected during 2017–2021.

Table 3.2 Coastal Plain and Piedmont Streams Assessed

Coastal Plain		Piedmont	
TDU01	Fort Dupont Tributary[1]	TFB02	Foundry Branch[1]
TFC01	Fort Chaplin Run[1]	TLU01	Luzon Branch[1]
TFD01	Fort Davis Tributary[1]	TMH01	Melvin Hazen Valley Branch[1]
THR01	Hickey Run[C]	TPO01	Portal Branch[1]

Coastal Plain		Piedmont	
TOR01	Oxon Run[1]	TPY01	Piney Branch[1]
TWB01	Lower Watts Branch[3]	TSO01	Soapstone Creek[1]
TWB02	Upper Watts Branch[3]	TDA01	Dalecarlia Tributary[2]
TTX27	Texas Avenue Tributary[1]	TFE01	Fenwick Branch[2]
TFS01	Fort Stanton Tributary[2]	TNS01	Normanstone Creek[2]
TNA01	Nash Run[2]	TDO01	Dumbarton Oaks Tributary[2]
TPB01	Pope Branch[2]	TPI01	Pinehurst Branch[2]
TFS01	Fort Stanton[2]	TKV01	Klingle Valley Creek[2]
		TBR01	Broad Branch[2]
		RCRH01	Lower Rock Creek[3]
		RCRH05	Upper Rock Creek[3]
		TBK01	Battery Kemble Creek[1]
		TPIH01	Pinehurst Branch[2]
		TBR01	Broad Branch[2]

[1] First round streams (monitored on the even number year)
[2] Second round streams (monitored on the odd number year)
[3] Core streams (monitored every year)

The findings from the habitat assessment are included in the individual assessments.

Class D

Fish consumption use determinations (Class D) are informed by known fish consumption advisories in effect during the assessment period. Fish tissue contamination data used to issue advisories are collected at stations located on the Anacostia and Potomac Rivers. If no barrier for fish movement exists, it is assumed that fish move freely to the smaller streams and other waterbodies. In these cases, fish tissue contamination data may be considered applicable to the connected tributaries. Fish tissue is collected directly from the Anacostia and Potomac River mainstems, and if a pollutant was found in actionable levels in the fish tissue, the pollutant will be listed as a cause of impairment for that waterbody. In tributaries that are hydrologically connected to the Anacostia and Potomac River mainstems and there is indirect evidence, such as fish tissue contamination data from the mainstem Anacostia or Potomac Rivers, that indicates a tributary may be impaired by a toxic pollutant of concern, the pollutant/tributary combination is deemed to have insufficient data or information to determine if the pollutant is a cause of impairment in the tributary. Table 3.3 has the threshold for fish consumption use designation. To find more information about the District's fish consumption advisory visit the DOEE website (https://doee.dc.gov/node/9582).

Table 3.3 Threshold for Fish Consumption Use Support Classification

Support of Designated Use	Threshold for Fish Consumption
Fully Supporting	No fish/shellfish advisories or bans are in effect.
Not Supporting	A "no consumption" fish/shellfish advisory or ban is in effect for the general population, or a subpopulation that could be at potentially greater risk, for one or more fish species, or a commercial fishing/shell fishing ban in effect.
Not Assessed	Fish consumption is not a designated use for the waterbody.
Insufficient Information	Data is not available to determine if the designated use is fully supporting or not supporting.

Class E

Class E use is determined by the presence or absence of unmarked submerged or partially submerged man-made objects that pose a hazard to users of these waters.

Appendix 3.3 2017-2021 Statistical Summary Reports includes the tables of percent exceedances and statistical summary reports for the waterbodies assessed for this reporting cycle.

The District has adopted WQS for dissolved oxygen, water clarity, and chlorophyll in accordance with the Chesapeake Bay Water Quality Criteria Guidance Document published in 2003 (EPA, 2003) for the Potomac and Anacostia Rivers. For the 2020 listing year, these segments are in Category 4a because the Chesapeake Bay TMDL, which was established in December 2010, includes these waterbodies.

Category Placement Methodology

The pollutant causing impairment in a waterbody or waterbody segment must be identified. Since each waterbody is associated with multiple uses, it is possible for a single waterbody to need more than one TMDL. The guidance allows for a waterbody segment to be listed in one or more categories. The main goal of this list is to have TMDLs approved and implemented so that WQS can be attained. These are the category descriptions:

Category 1 - All designated uses are supported; no use is threatened.

Category 2 - Available data and/or information indicate that some (at least three), but not all, designated uses are supported.

Category 3 - There is insufficient available data and/or information to make a use support determination.

Category 4 - Available data and/or information indicate that at least one designated use is not supported or is threatened, but a TMDL is not needed. Category 4 and its subcategories may include TMDLs that may or may not need to be revised for one reason or another, including court orders, consent decrees, and availability of new information.

Category 4a - A State developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination.

Category 4b - Other required control measures are expected to result in the attainment of an applicable WQS in a reasonable period of time.

Category 4c - The non-attainment of any applicable WQS for the segment is the result of pollution and is not caused by a pollutant.

Category 5 - Available data and/or information indicate that at least one designated use is not supported or is threatened, and a TMDL is needed.

Priority and Ranking

Revisions to TMDLs required by a consent decree or court order will supersede all other TMDLs scheduled for development.

Waterbodies that are first placed on the draft list for toxics substances, such as metals, pesticides, carcinogens, or noncarcinogens, are ranked as high priority for TMDL development on the basis of their risk to human health. Based on previous experience with the TMDL development process, which includes data gathering, model development, and public participation, the District anticipate the development of TMDLs for waterbodies ranked as high priority in the next six years.

For example, if a waterbody is first listed for *E. coli* due to primary contact use exceedances, that waterbody is ranked as a medium priority waterbody for TMDL development. Bacterial impairment also poses some human health risk, though the observed effects are usually not as severe as toxic substances' effects. The primary contact use exceedances (a current use) will be a higher priority than the secondary contact recreation use exceedances, as it is also a more efficient use of resource to address the existing uses before the designated uses (such as secondary contact recreation). Waterbodies listed for trash will be ranked as High priority. Waterbodies listed for pH are also ranked as medium priority as it is an aquatic life use criterion. The medium priority waterbodies will be scheduled for TMDL preparation within nine years.

Waterbodies listed for any other pollutant not previously mentioned will also be ranked low priority. Low priority waterbodies will be scheduled for TMDL preparation within twelve years.

Georeferencing

The geographic location codes included in the 2022 303(d) list were taken from the National Hydrography Dataset. The District has two codes: 02070010 for the Potomac River watershed and 02070008 for the Middle Potomac-Catoctin watershed. Only one District waterbody, Dalecarlia Tributary, is located in the Middle Potomac-Catoctin watershed. All the remaining waterbodies are located in the Potomac River watershed. The EPA ATTAINS database is used to compile the data for the Integrated Report.

Public Participation

The 2022 District of Columbia Surface Water Assessment and Listing Methodology was available for a 30-day public comment period, which commenced on December 23, 2021, and ended on January 21, 2022. The notice of availability of the report was published in the DC Register, provided on the DOEE website, and also emailed to stakeholders. No comments were received.

Categorization of District of Columbia Waters

See Appendix 3.4 Draft District of Columbia 303(d) List.

3.3 Waterbody Segments Water Quality Assessment

Designated Use Support

Thirty-six waterbody segments were assessed for this update. Each of those waterbody segments is impaired for one or more uses (Table 3.4).

Table 3.4 Summary of Fully Supporting, Threatened, and Impaired Waterbody Segments

Degree of Use Support	Assessment Evaluated	Category Monitored	Total Number of Waterbody Segments
Number fully supporting all assessed uses	0.00	0.00	0.00
Number fully supporting all assessed uses but threatened for at least one use	0.00	0.00	0.00
Number impaired for one or more uses	0.00	36	36
Total	**0.00**	**36**	**36**

As shown on Table 3.5, twelve District waterbody segments supported aquatic life use. Fish consumption use was not supported in any of the waterbody segments assessed due to the general fish consumption advisory in effect for all District waterbodies. One waterbody segment in the District supported primary contact use, but most did not support primary contact use due to pH, turbidity, and/or *E. coli* exceedances. Several waterbody segments supported secondary contact use. Navigation use was fully supported in the waterbody segments that have navigation as a use.

Table 3.5 Individual Use Support Summary for Waterbody Segments

Use	Total Number	Number Assessed	Number Fully Supporting	Number Fully Supporting and Threatened	Number Not Supporting	Number Not Assessed	Number with Insufficient Info
Navigation	22	22	22	0	0	0	0
Primary Contact Recreation	36	36	1	0	35	0	0
Protection and Propagation of Fish, Shellfish and Wildlife	36	36	12	0	24	0	0
Protection of Human Health related to	36	36	0	0	36	0	0

Consumption of Fish and Shellfish							
Secondary Contact Recreation and Aesthetic Enjoyment	36	36	15	0	21	0	0

3.4 Relative Assessment of Causes/Stressors

The causes of impairment to the District's waterbody segments are varied. Many of the waterbody segments have poor biological integrity. Table 3.6 lists the causes of impairment to District waterbody segments.

Table 3.6 Total Number of Waterbody Segments Impaired by Various Causes

Parameter Causing Impairment	Number Effected Cause	Meeting Criteria	Observed Effect	Total
TOTAL SUSPENDED SOLIDS (TSS)	21	2	0	23
ESCHERICHIA COLI (E. COLI)	35	1	0	36
POLYCHLORINATED BIPHENYLS (PCBS)	15	0	0	15
PH	2	8	0	10
DIELDRIN	9	0	0	9
HEPTACHLOR EPOXIDE	6	0	0	6
CHLORDANE	2	0	0	2
FLOW REGIME MODIFICATION	0	2	0	2
ARSENIC	18	0	0	18
HABITAT ASSESSMENT	7	8	0	15
DISSOLVED OXYGEN	3	6	0	9
POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) (AQUATIC ECOSYSTEMS)	1	0	0	1
DDE (DICHLORODIPHENYLDICHLOROETHYLENE)	1	0	0	1
DDT (DICHLORODIPHENYLTRICHLOROETHANE)	4	0	0	4
CHLOROPHYLL-A	3	2	0	5
BIOCHEMICAL OXYGEN DEMAND (BOD)	2	2	0	4
DDD (DICHLORODIPHENYLDICHLOROETHANE)	2	0	0	2
ALTERATION IN STREAM-SIDE OR LITTORAL VEGETATIVE COVERS	0	2	0	2

NITROGEN, TOTAL	2	1	0	3
OIL AND GREASE	2	1	0	3
PHOSPHORUS, TOTAL	2	1	0	3
TRASH	2	0	0	2
CHLORINE, RESIDUAL (CHLORINE DEMAND)	1	0	0	1
PHYSICAL SUBSTRATE HABITAT ALTERATIONS	0	1	0	1

3.5 Relative Assessment of Sources

A common source of impairment to the District's waterbody segments is urban runoff from impervious surfaces. Habitat modification has an impact on many of the waterbody segments as riparian vegetation is removed and stream banks are destabilized due to heavy runoff. Table 3.7 lists the modifications that are probable sources of impairment.

Table 3.7 Summary of Probable Sources of Impairment to Waterbody

Summary of Probable Sources Impairment			
Source	**Confirmed**	**Unconfirmed**	**Total**
UNSPECIFIED URBAN STORMWATER	0	34	34
DISCHARGES FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)	0	29	29
RESIDENTIAL DISTRICTS	0	15	15
IMPACTS FROM HYDROSTRUCTURE FLOW REGULATION/MODIFICATION	0	10	10
SOURCE UNKNOWN	0	10	10
ILLEGAL DUMPS OR OTHER INAPPROPRIATE WASTE DISPOSAL	0	8	8
COMBINED SEWER OVERFLOWS	0	8	8
UPSTREAM SOURCE	0	8	8
WET WEATHER DISCHARGES (NON-POINT SOURCE)	0	5	5
WET WEATHER DISCHARGES (POINT SOURCE AND COMBINATION OF STORMWATER, SSO OR CSO)	0	5	5
MUNICIPAL (URBANIZED HIGH DENSITY AREA)	0	5	5
CHANNELIZATION	0	4	4
MUNICIPAL POINT SOURCE DISCHARGES	0	3	3
ATMOSPHERIC DEPOSITION - TOXICS	0	3	3
CONTAMINATED SEDIMENTS	0	3	3
WATERFOWL	0	2	2
SITE CLEARANCE (LAND DEVELOPMENT OR REDEVELOPMENT)	0	1	1
HIGHWAY/ROAD/BRIDGE RUNOFF (NON-CONSTRUCTION RELATED)	0	1	1
LEGACY/HISTORICAL POLLUTANTS	0	1	1

3.6 Special Topics

Chesapeake Bay TMDL

Pursuant to Section 303(d) of the Clean Water Act (CWA), EPA established the Chesapeake Bay TMDL for nutrients and sediment for all impaired segments in the tidal portion of the Chesapeake Bay watershed on December 29, 2010. As a signatory to the EPA Chesapeake Bay Agreement, the District has been actively working with EPA and the other partner jurisdictions (Maryland, Virginia, Pennsylvania, West Virginia, New York, and Delaware) to develop and implement the Chesapeake Bay TMDL.

During this reporting cycle, DOEE WQD regularly participated in monthly meetings of the Bay Water Quality Goal Implementation Team (WQGIT) and technical workgroup (e.g., Land Use, Modeling, Wastewater, Water Quality Trading, etc.). The WQD also co-chaired the WQGIT and helped lead multi-jurisdiction agreement on decisions related to land use, Bay modeling, and climate change impacts to planning targets. In addition, WQD and other DOEE Divisions who participate in Bay meetings ensure that issues specific to the District are identified and addressed.

Bacteria TMDLs Revision

Between 2003 and 2004, DOEE developed, and EPA approved, bacteria TMDLs for District waters based on fecal coliform. These TMDLs needed to be revised to express the load allocations in “daily” terms due to a court order in Friends of the Earth v. EPA 446 F.3d 140 (D.C. Cir. 2006). In addition, fecal coliform needed to be translated to E.coli after the District adopted E.coli for purposes of the bacteria water quality criteria in 2008.

In 2014, EPA approved bacteria TMDLs for the Potomac River, the Anacostia River, Kingman Lake, Oxon Run, Rock Creek, C&O Canal, the Tidal Basin, and Washington Ship Channel.

In 2015, DC Water filed a lawsuit in the United States District Court for the District of Columbia against EPA challenging the TMDLs. In the lawsuit, which has since been withdrawn, DC Water sought to correct what it perceived as technical mistakes, arguing the TMDLs set the waste load allocations for Blue Plains too low. In response, EPA issued a revised TMDL and TMDL approval in 2017.

In 2016, the Anacostia RiverKeeper, Kingman Park Civic Association, and Potomac RiverKeeper Network (plaintiffs) jointly filed a lawsuit in the United States District Court for the District of Columbia against EPA, challenging its approval of the TMDLs. In the lawsuit, the plaintiffs argued that the TMDLs failed to appropriately set a maximum daily load as required by the *Friends of the Earth* decision, and also failed to achieve the narrative criteria designed to protect human health. Anacostia Riverkeeper, Inc. et al v. McCarthy et al, Case No. 1:16-cv-01651-CRC (D.D.C.).

In 2019, the Court issued a Memorandum Opinion holding that EPA violated the CWA “when it approved ‘total maximum daily load’ that did not establish daily maximum discharge limits”. The Court also held that EPA’s reasoning that the numeric criteria established for E.coli also met the District’s narrative WQS criteria was flawed. As a result, the Court vacated EPA’s approval of the District's bacteria TMDLs but stayed vacatur for one year to allow the District and EPA to develop new TMDLs. Vacatur has since been stayed until May 9, 2022, by the Court.

Since the Court decision in 2019, the District has worked, with EPA's assistance, to revise the bacteria TMDLs. Efforts for this Integrated Reporting cycle include: developing options to revise the TMDLs; engaging stakeholders and plaintiffs on those options; estimating a timeline to revise TMDLs; exploring TMDL datasets (e.g., past modeling files and analyses) to investigate past evidence to address the Court's decision; and collating data for future TMDL modeling. In addition, EPA has allocated funding and developed a work plan to help identify data gaps that need filling to revise the TMDLs.

Anacostia River Trash TMDL Revision

On March 30, 2018, in Natural Resources Defense Council, Inc. v. EPA, 301 F. Supp. 3d 133 (D.D.C. 2018), the Court vacated the EPA's approval of the TMDL for trash in the Anacostia River, but stayed vacatur until such time as EPA approves a replacement TMDL. The Court further directed EPA to submit regular status reports informing the Court of the actions that the agency has taken to comply with the Order. Since July 2019, EPA has provided the Court regular status updates on EPA, DOEE, and Maryland Department of Environment (MDE) activities to revise the trash TMDLs.

Activities during this reporting cycle include working with Morgan State University to review Anacostia trash literature and other trash TMDLs, review scientific literature on public use surveys, and develop a public survey to identify quantitative and qualitative trash thresholds for the recreational use of the Anacostia River. These thresholds will be important for developing a TMDL endpoint. As part of the contracted work described above, EPA, MDE, and DOEE meet regularly with the University to provide technical expertise and help move the study forward.

Anacostia River Metals and Toxics TMDLs Revision

In 1988, the District listed waterbodies impaired by toxics on its 303(d) list, and subsequently developed TMDLs. In 2006, Friends of the Earth successfully challenged the District's TMDLs because they did not express daily loads (Friends of the Earth vs. EPA 446 F.3d 140,144 (D.C. Cir. 2006)). Then in 2009, Anacostia Riverkeeper, Friends of the Earth, and Potomac Riverkeepers filed a complaint that other District TMDLs were also not expressed as daily loads. The Court ordered that the TMDLs be vacated but stayed vacatur until January 2017. Due to additional data needs identified by DOEE and EPA, the Court extended the current vacatur through March 2022.

For this Integrated Report cycle, DOEE activities related to revising the Anacostia River Toxics and Metals TMDLs include:

- With EPA's assistance, a contractor has drafted a TMDL modeling report that supported the draft metals and toxics TMDLs. DOEE's WQD provided expertise and guidance on the modeling report.
- Drafted text for the TMDLs.
- Publicly-noticed the proposed revised TMDLs in the DC Register in July 2021 for a public comment period.

- Prepared a comment and response document to address public comments. The document is still being worked on.
- Engaged stakeholders and plaintiffs on revisions. For example, the draft TMDLs were presented at a virtual public meeting convened by DOEE, MDE, and EPA.

Bacteria Source Tracking Studies

All District waters are impaired by bacteria. DOEE is using new tools and techniques to identify bacteria sources that will facilitate source control and mitigating practices to reduce bacteria impairment of District waters.

Anacostia River

WQD partnered with EPA's Office of Research and Development (ORD) and EPA Region 3 to both source and track microbial pollution in headwater streams of the Anacostia River. Seven headwater streams were monitored for water quality and hydrology for 12 months. In addition, water samples were collected from headwater streams and MS4 pipe outfalls for quantitative polymerase chain reaction (PCR) analysis. This analysis will identify both human and non-human sources (e.g., bird, dog, deer, etc.) of bacteria. Once the PCR analysis is complete, DOEE will use the results to target and reduce microbial pollution in the Anacostia River.

Rock Creek Tributary

DOEE received EPA Multipurpose Grant funding to identify sources for microbial pollution in Rock Creek. Since February 2021, DOEE WQD has partnered with the Metropolitan Washington Council of Governments (MWCOG) and Virginia Tech to collect samples for water quality analyses at three locations in Rock Creek. In addition to *E.coli* and other routine water quality analyses, the Occoquan Watershed Monitoring Laboratory - Virginia Tech will undertake PCR analysis to identify human and non-human sources (e.g., deer, dog, and bird) to better understand fecal pollution. Results will help DOEE implement targeted source control and mitigation efforts to address microbial pollution in Rock Creek.

Monitoring and Predictive Modeling of Bacteria in the Lower Anacostia River

DOEE is collaborating with the United States Geological Survey (USGS) to undertake additional monitoring of bacteria and to create a model to predict bacteria in the Lower Anacostia River. USGS received funding in 2020 through the Urban Waters Federal Partnership and DOEE is also funding the study.

This multiyear collaborative study is in its second year. Activities to date include: evaluating and statistically summarizing bacteria, water quality, water flow, and other parameters during a 20-year period; exploring statistical relationships between bacteria and other parameters; installing a new USGS gage station (that measures flow and will measure real-time bacteria concentrations) at Bladensburg Waterfront; and testing new tools, which use fluorometry to quantify bacteria in real-time.

In future years, the intent is to create a predictive model to determine the likelihood that bacteria concentrations will be above or below Recreational Water Quality Criteria for bacteria in the

Lower Anacostia River. This model will be used as one line of evidence to help local decision-making related to swimming in the Anacostia River.

Volunteer Water Quality Monitoring in District Waters.

The Volunteer Water Quality Monitoring project is a citizen science project that began in 2018. DOEE awarded a grant to Anacostia Riverkeeper to develop and implement the District's volunteer-based program that monitored water quality for *E. coli,* pH, turbidity, and water temperature at 22 locations in District rivers and tributaries where high recreation activities occurred. Monitoring took place weekly from May to September every year from 2019 through 2021. The water quality parameters sampled were chosen with recreation as the primary concern. Additionally, a Recreational Use Survey (RUS) was completed to develop a clearer picture of on-water recreation in District waters. Volunteers observed types of recreation activities witnessed, and the number of participants engaged in each activity.

Anacostia Riverkeeper (ARK) partnered with Audubon Naturalist Society, Rock Creek Conservancy, Alliance for the Chesapeake Bay, and Potomac Riverkeeper Network to execute the project. Volunteers engaged from all eight (8) District Wards were trained, and together with ARK and partners, completed the first three years of the project. The project will continue to collect water quality data in areas with high recreation activities. All data generated were published (via Swim Guide, water reporter, and Chesapeake Monitoring Cooperative database) and accessible to the public. During the three-year monitoring period, the following trends were observed throughout the District's surface waters:

Watershed Trends from 2019-2021

While bacteria levels ranged across the three watersheds and often violated both the standard for single-samples and geometric mean, other measures of water quality including pH (6.5-8), water temperature (less than 32.3°F) and turbidity (less than 20 Nephelometric Turbidity Units NTU) above ambient) were generally within the acceptable range.

Anacostia River Trends

The Anacostia River sites are located on the main stem from the National Arboretum to the Washington Channel, with one tributary site located on Hickey Run. Bacteria levels were generally lower downstream than upstream except at Yards Marina, which recorded 75-100 percent of the samples in violation of the *E. coli* geometric mean threshold (126 Most Probable Number (MPN)/100 milliliters). The geometric mean trends showed a lesser percentage of violations at the downstream sites than at upstream sites (Table 3.8). At the Washington Channel site, all geometric means recorded were always below the E. coli geometric mean threshold (no violations found). The Anacostia Park site had 90 percent of samples in violation of the geometric mean threshold. The National Arboretum and Hickey Run sites both exceeded the threshold 100 percent of the time. In the Anacostia River, turbidity tended to decrease downstream. The average turbidity for all Anacostia sites, except the National Arboretum site, were well below the standard. The National Arboretum site had a higher turbidity average due to a few rain events with very high turbidity spikes. Violations for low pH occasionally (less that 10 percent of the time) occurred for sites along the Anacostia River. Again, the National Arboretum site was the exception in 2021, having low pH values 45 percent of the time. This was a very different trend from 2019 and 2020 when pH only violated the standard 5 percent and 0 percent of the time respectively. The National Arboretum and Hickey Run sites had the worst overall water quality of all sites on the Anacostia River.

Table 3.8 Percent violations for E. coli (geometric mean), pH and Turbidity.

Monitoring Site	% Violation geometric mean			% violation pH (<6 and >8.5)			% violation turbidity		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
RC-1 **Rock Creek at Juniper Street NW**	100	100	100	45	0	0	10	5	10
RC-2 (Pinehurst Branch)	100	100	100	0	0	11	0	0	0
RC-3 (Broad Branch)	94	100	88	10	0	0	15	15	20
RC-4 **Soapstone Creek**	100	100	100	15	5	10	0	5	0
RC-5 (Melvin Hazen Run)	100	75	100	10	0	0	0	0	15
RC-6 **Rock Creek below Piney Branch**	100	94	100	25	0	0	10	15	5
RC-7 (Normanstone Run)	100	100	100	5	0	10	0	0	0
RC-8 **P Street Beach**	100	100	94	5	0	5	15	15	5
PR-1 (Battery Kemble Park)	100	100	81	15	0	5	0	0	0
PR-2 (Fletcher’s Cove)	25	62	63	0	0	0	15	0	15

Monitoring Site	% Violation geometric mean			% violation pH (<6 and >8.5)			% violation turbidity		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
PR-3 (Foundry Branch)	100	78	88	15	0	5	0	10	5
PR-4 (Washington Canoe Club)	56	91	88	0	0	0	10	0	5
PR-5 Thompson Boat Center	25	12	44	0	0	5	10	0	0
PR-6 (Tidal Basin)	0	0	0	5	5	0	0	0	0
PR-7 (Columbia Island)	50	44	56	0	5	0	15	5	0
AR-1 (National Arboretum)	100	100	100	5	0	45	25	25	30
AR-2 (Hickey Run)	100	100	100	5	0	5	0	5	7
AR-3 Kingman Lake	31	56	69	0	0	5	20	15	25
AR-4 (Anacostia Park)	94	75	100	5	0	5	20	10	20
AR-5 (Yards Marina)	100	75	94	5	5	5	5	5	10
AR-6 Buzzard Point	38	37	69	0	10	0	5	0	0
AR-7 (Washington Channel)	0	0	0	5	0	0	0	0	0

Potomac River Trends

The Potomac River sites include five on the mainstem from Fletcher's Cove to Columbia Island. The two Potomac tributaries sampled were Battery Kemble Park and Foundry Branch. Several of the mainstem sites reported consistently low bacteria levels throughout the three years of monitoring. The Tidal Basin site met water quality standards for recreation 97 percent of the time and no *E. coli* violations of the geometric mean standard were recorded. Bacteria levels at the Washington Canoe Club site increased over time, with 88 percent of samples failing to meet *E. coli* standards in 2021. The Battery Kemble Park and Foundry Branch sites frequently exhibited very high bacteria loads and recorded the highest percentages of violations, including in dry weather. The Potomac River sites showed generally good water quality for pH, turbidity, and temperature. Turbidity levels were very low at all locations. The Battery Kemble site had the lowest turbidity level; no violations were recorded this site or at the Tidal Basin site. The turbidity at the Fletcher's Cove site was the highest on average for the Potomac River sites, the result of river flow patterns and sedimentation issues in that section of the Potomac River.

Rock Creek Trends

Rock Creek exhibited very high levels of bacteria, oftentimes more than the Anacostia and Potomac Rivers. Based on the geometric mean standard, the percentage of violations recorded in Rock Creek was equal to or greater than 75 percent for all sites, reflecting the significant bacteria impairment of Rock Creek and its tributaries. Every site except for Broad Branch exceeded the *E. coli* threshold with 100 percent violations recorded for at least two years during the project period. Normanstone Run exhibited the highest bacteria levels in Rock Creek across all three years but dropped steadily from 2019-2021. The consistently unsafe levels of bacteria across nearly every Rock Creek site show that the creek remains significantly impaired throughout the section of it that runs through the District. The average pH, turbidity, and water temperature at every Rock Creek site fell within the acceptable ranges for each category. Normanstone Run had the lowest average pH value at 6.4, and Melvin Hazen Run had the highest pH average at 7.3. Average turbidity at Pinehurst Branch and Normanstone Run were low and did not exceed the turbidity threshold (<20 NTU).

Recreational Use Trends

All three District waterways experienced weekday recreational use throughout each summer. Potomac River had the highest number of participants recreating on the water and Rock Creek had the lowest (figure 3.1). Rock Creek and the Potomac River saw fluctuations in the amount of recreation occurring from year to year with fluctuations likely the result of the COVID-19 pandemic. The Anacostia River did not experience the same fluctuations as Rock Creek and the Potomac River as nearly the same number of recreational use participants were recorded each year. Recreation activities on the Anacostia River were recorded mostly from Anacostia Park moving downriver towards the Washington Channel, which had better water quality. In the Potomac, recreation mostly occurred at the mainstem sites (Fletchers Cove and Thompson Boat Center) and included secondary contact activities, such as canoeing, kayaking, fishing, rowing, and power boating. Recreation increased slightly on mainstem sites on the Potomac River during the height of the pandemic in summer 2020. Activities recorded at the Potomac tributary sites (Battery Kemble Park and Foundry Branch) were mostly activities like contact with water while hiking/crossing streams. Recreational use in Rock Creek raised health concerns given the high levels of bacteria recorded at these sites. Recreation in Rock Creek included people wading, crossing, or playing with dogs in the creek. Activities peaked in 2020 during the pandemic, likely due to closure of public pools and spray parks.

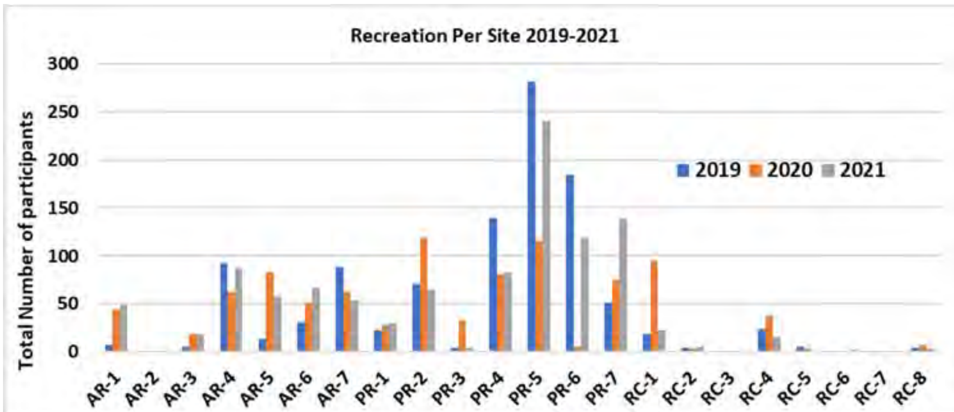


Figure 3.1 Total number of recreation participants recorded at each site during monitoring.

TMDL Implementation Plan

DOEE submitted an updated draft of its Consolidated TMDL Implementation Plan (TMDL IP) in August of 2016. The Consolidated TMDL IP describes the plan and timetable for how and when the District's MS4 Waste Load Allocations (WLA) will be attained and focuses on achieving load reductions simultaneously in all of the District's watersheds with TMDLs. This plan uses a consolidated modeling approach to track and report on these load reductions in a consistent manner.

The TMDL IP includes a series of programmatic milestones the District has committed to in the interest of accelerating the pace of stormwater management implementation. These programmatic milestones include:

- Committing $12.75 million to establish a Stormwater Retention Credit Purchase Agreement program (completed)
- Developing a list of targeted watersheds and targeted implementation approaches (completed)
- Evaluating options for increasing the District's stormwater fee (completed)
- Conducting a cost/benefit analysis of potential changes to existing stormwater management regulations (completed)
- Updating the Implementation Plan Modeling Tool and the TMDL IP (ongoing)
- Working to revise and update District TMDLs (ongoing):
    - Identifying priority TMDLs in need of revision
    - Developing a monitoring work plan to support TMDL revisions
    - Conducting intensive monitoring to support TMDL revisions

- o Completing the first round of priority TMDL revisions

TMDL IP Modeling

The District's TMDL Implementation Plan Modeling Tool (IPMT) was developed in 2014 to model the stormwater runoff volumes, pollutant loads generated, and load reductions achieved through stormwater management. By generating a pollutant load "gap" between current conditions and the wasteload allocation (WLA), it is possible to determine how much load reduction is required to meet an individual WLA. It can also be used to forecast pollutant reductions associated with implementation of the District's 2013 Stormwater Regulations. The IPMT also includes a comprehensive TMDL inventory that provides users with access to details for each waterbody, pollutant, TMDL document, decision rationale document, and numeric WLA.

Application of the IPMT provides a method to track the achievement of TMDLs in a consistent manner for all pollutants. DOEE updates the IPMT at the end of each annual reporting cycle with the specifications of Best Management Practices (BMPs) that have been implemented in that time frame. These data are then used to model pollution reductions made toward implementation milestones and, if necessary, guide adaptive management strategies.

DOEE applies the IPMT model to calculate the runoff and pollutant load reductions from BMP implementation for each MS4 Permit reporting year. Tables 3.9, 3.10, and 3.11 show the IPMT outputs for reporting year 2021.

Table 3.9 Pollutant Load Reductions, 07/01/2020 - 06/30/2021

Watershed	Runoff Retained (gallons)	Total Nitrogen (lbs)	Total Phosphorus (lbs)	Total Suspended Solids (lbs)	Fecal Coliform (billion MPN)	Arsenics (lbs)	Copper (lbs)	Lead (lbs)	Cadmium (lbs)	Mercury (lbs)	Zinc (lbs)
Anacostia	53,430,153	1,590	184	36,255	30,034	0.73	25.35	7.79	8.53	0.09	58.55
Rock Creek	19,785,876	576	67	9,752	10,811	0.26	9.15	2.80	3.07	0.03	17.69
Potomac River	13,603,983	406	47	5,658	7,581	0.18	6.39	1.97	2.16	0.02	12.35
Total	**86,820,012**	**2,572**	**298**	**51,665**	**48,426**	**1.18**	**40.9**	**12.6**	**13.8**	**0.15**	**88.59**

Table Key

The following tables are color-coded as follows:

Green cells indicate that the WLA has already been achieved for that waterbody and pollutant combination.
Blue cells indicate that the benchmark load reduction was achieved or exceeded for that waterbody and pollutant combination.
Orange cells indicate that the benchmark load reduction was not achieved for that waterbody and pollutant combination.
Grey cells indicate that there is no MS4 WLA for that waterbody and pollutant combination, and therefore no benchmark has been established. Load reductions are provided for informational purposes only.

Table 3.10 Overall Summary of WLA Benchmark Achievements, 07/01/2020 - 06/30/2021

WLA Achieved	32
Benchmark Achieved	51
Benchmark Not Achieved	124
No WLA or benchmark	849

Table 3.11 Pollutant Load Reductions from BMP Implementation with WLA Benchmarks, 07/01/2020 to 06/30/2021

Watershed	Runoff Retained (gallons)	TN (lbs)	TP (lbs)	TSS (lbs)	Fecal Coliform (billion MPN)	BOD (lbs)	Oil and Grease (lbs)	Arsenic (lbs)	Copper (lbs)	Lead (lbs)	Cadmium[1] (lbs)	Mercury (lbs)	Zinc (lbs)	Chlordane (lbs)	DDD (lbs)	DDE (lbs)	DDT (lbs)	Dieldrin (lbs)	Heptachlor Epoxide (lbs)	PAH1 (lbs)	PAH2 (lbs)	PAH3 (lbs)	TPCB (lbs)	*E. coli* (Billion MPN)
Anacostia	33,123,536	999.42	115.90	22,811.6	18,846	10,109	1,156.9	4.6E-01	1.6E+01	4.9E+00	5.4E+00	5.6E-02	3.7E+01	2.8E-03	9.0E-04	4.1E-03	1.0E-02	8.0E-05	2.6E-04	1.8E-01	1.2E+00	8.3E-01	2.4E-02	7,563.7
Anacostia Lower	15,461,603	463.95	53.89	10,715.8	8,839	4,705	498.4	2.1E-01	7.4E+00	2.3E+00	2.5E+00	2.6E-02	1.7E+01	1.3E-03	4.2E-04	1.9E-03	4.9E-03	3.7E-05	1.2E-04	8.5E-02	5.6E-01	3.9E-01	1.1E-02	3,547.3

Watershed	Runoff Retained (gallons)	TN (lbs)	TP (lbs)	TSS (lbs)	Fecal Coliform (billion MPN)	BOD (lbs)	Oil and Grease (lbs)	Arsenic (lbs)	Copper (lbs)	Lead (lbs)	Cadmium[1] (lbs)	Mercury (lbs)	Zinc (lbs)	Chlordane (lbs)	DDD (lbs)	DDE (lbs)	DDT (lbs)	Dieldrin (lbs)	Heptachlor Epoxide (lbs)	PAH1 (lbs)	PAH2 (lbs)	PAH3 (lbs)	TPCB (lbs)	*E. coli* (Billion MPN)
Anacostia Upper	17,661,933	535.47	62.01	12,095.8	10,007	5,404	658.5	2.4E-01	8.4E+00	2.6E+00	2.8E+00	3.0E-02	2.0E+01	1.5E-03	4.8E-04	2.2E-03	5.5E-03	4.3E-05	1.4E-04	9.7E-02	6.4E-01	4.4E-01	1.3E-02	4,016.4
ANATF_DC	29,197,242	593.83	70.18	13,903.0	11,371	5,750	773.9	2.7E-01	9.5E+00	3.0E+00	3.3E+00	3.4E-02	2.2E+01	1.6E-03	5.4E-04	2.5E-03	6.2E-03	4.5E-05	1.5E-04	1.0E-01	7.0E-01	5.1E-01	1.4E-02	4,563.7
ANATF_MD	4,522,845	69.18	7.76	1,487.1	1,224	650	64.5	3.0E-02	1.0E+00	3.2E-01	3.5E-01	3.7E-03	2.4E+00	1.8E-04	5.8E-05	2.6E-04	6.7E-04	5.1E-06	1.7E-05	1.2E-02	7.7E-02	5.4E-02	1.6E-03	491.1
Battery Kemble Creek	133,451	3.70	0.42	46.9	69	31	3.7	1.7E-03	5.9E-02	1.8E-02	1.9E-02	2.1E-04	1.1E-01	1.1E-05	3.3E-06	1.5E-05	3.8E-05	3.2E-07	1.1E-06	7.3E-04	4.6E-03	3.0E-03	9.0E-05	27.7
Broad Branch	3,406,843	97.69	11.32	1,772.0	1,823	673	140.8	4.5E-02	1.5E+00	4.7E-01	5.2E-01	5.5E-03	3.0E+00	2.8E-04	8.8E-05	3.9E-04	1.0E-03	8.2E-06	2.7E-05	1.9E-02	1.2E-01	8.0E-02	2.4E-03	731.8
C&O Canal	757,234	21.17	2.42	265.9	392	177	21.2	9.7E-03	3.3E-01	1.0E-01	1.1E-01	1.2E-03	6.4E-01	6.2E-05	1.9E-05	8.4E-05	2.2E-04	1.8E-06	6.0E-06	4.2E-03	2.6E-02	1.7E-02	5.1E-04	157.4
Dalecarlia Tributary	2,313,777	65.94	7.58	841.8	1,228	542	68.7	3.0E-02	1.0E+00	3.2E-01	3.5E-01	3.7E-03	2.0E+00	1.9E-04	5.9E-05	2.6E-04	6.8E-04	5.6E-06	1.8E-05	1.3E-02	8.1E-02	5.4E-02	1.6E-03	492.7
Dumbarton Oaks	397,497	11.02	1.26	197.4	206	79	13.8	5.1E-03	1.8E-01	5.3E-02	5.8E-02	6.3E-04	3.4E-01	3.3E-05	1.0E-05	4.4E-05	1.1E-04	9.6E-07	3.2E-06	2.2E-03	1.4E-02	8.9E-03	2.7E-04	82.6
Fenwick Branch	265,870	8.27	0.95	156.3	156	53	9.2	3.8E-03	1.3E-01	4.1E-02	4.5E-02	4.6E-04	2.6E-01	2.3E-05	7.5E-06	3.4E-05	8.6E-05	6.4E-07	2.1E-06	1.5E-03	9.7E-03	7.0E-03	2.0E-04	62.8
Fort Chaplin Tributary	87,197	2.55	0.29	53.4	45	26	2.7	1.1E-03	3.8E-02	1.2E-02	1.3E-02	1.4E-04	8.8E-02	7.2E-06	2.2E-06	9.7E-06	2.5E-05	2.1E-07	7.0E-07	4.8E-04	3.0E-03	2.0E-03	5.9E-05	18.1

Watershed	Runoff Retained (gallons)	TN (lbs)	TP (lbs)	TSS (lbs)	Fecal Coliform (billion MPN)	BOD (lbs)	Oil and Grease (lbs)	Arsenic (lbs)	Copper (lbs)	Lead (lbs)	Cadmium[1] (lbs)	Mercury (lbs)	Zinc (lbs)	Chlordane (lbs)	DDD (lbs)	DDE (lbs)	DDT (lbs)	Dieldrin (lbs)	Heptachlor Epoxide (lbs)	PAH1 (lbs)	PAH2 (lbs)	PAH3 (lbs)	TPCB (lbs)	*E. coli* (Billion MPN)
Fort Davis Tributary	71,630	2.16	0.24	43.8	37	21	2.2	9.2E-04	3.2E-02	9.5E-03	1.0E-02	1.1E-04	7.2E-02	5.9E-06	1.8E-06	8.0E-06	2.0E-05	1.7E-07	5.7E-07	3.9E-04	2.5E-03	1.6E-03	4.8E-05	14.9
Fort Dupont Tributary	71,837	2.19	0.24	44.0	37	22	2.2	9.2E-04	3.2E-02	9.6E-03	1.0E-02	1.1E-04	7.3E-02	5.9E-06	1.8E-06	8.0E-06	2.1E-05	1.7E-07	5.7E-07	3.9E-04	2.5E-03	1.6E-03	4.8E-05	14.9
Fort Stanton Tributary	572,525	24.47	2.87	635.5	486	172	17.4	1.1E-02	3.9E-01	1.3E-01	1.4E-01	1.4E-03	9.5E-01	5.5E-05	2.3E-05	1.1E-04	2.6E-04	1.4E-06	4.6E-06	3.2E-03	2.6E-02	2.3E-02	5.8E-04	195.0
Foundry Branch	45,990	1.27	0.15	16.1	24	11	1.3	5.9E-04	2.0E-02	6.1E-03	6.7E-03	7.3E-05	3.9E-02	3.8E-06	1.2E-06	5.1E-06	1.3E-05	1.1E-07	3.7E-07	2.5E-04	1.6E-03	1.0E-03	3.1E-05	9.6
Hickey Run	2,821,331	89.43	10.98	2,150.8	1,748	858	174.9	4.2E-02	1.5E+00	4.6E-01	5.0E-01	5.1E-03	3.4E+00	2.4E-04	8.3E-05	3.8E-04	9.6E-04	6.9E-06	2.3E-05	1.6E-02	1.1E-01	7.8E-02	2.2E-03	701.4
Kingman Lake	460,936	14.60	1.68	338.7	276	138	14.5	6.6E-03	2.3E-01	7.2E-02	7.9E-02	8.2E-04	5.4E-01	3.9E-05	1.3E-05	6.0E-05	1.5E-04	1.1E-06	3.7E-06	2.5E-03	1.7E-02	1.2E-02	3.5E-04	110.9
Klingle Valley Run	36,475	1.01	0.12	18.1	19	7	1.3	4.7E-04	1.6E-02	4.9E-03	5.3E-03	5.8E-05	3.1E-02	3.0E-06	9.1E-07	4.0E-06	1.0E-05	8.8E-08	2.9E-07	2.0E-04	1.3E-03	8.2E-04	2.5E-05	7.6
Lower Beaverdam Creek																								
Luzon Branch	4,656,308	129.83	14.89	2,327.7	2,422	920	167.8	6.0E-02	2.1E+00	6.2E-01	6.8E-01	7.4E-03	4.0E+00	3.8E-04	1.2E-04	5.2E-04	1.3E-03	1.1E-05	3.7E-05	2.6E-02	1.6E-01	1.0E-01	3.1E-03	972.0
Melvin Hazen Valley Branch	879,167	24.86	2.85	448.4	464	174	30.5	1.1E-02	3.9E-01	1.2E-01	1.3E-01	1.4E-03	7.6E-01	7.2E-05	2.2E-05	1.0E-04	2.6E-04	2.1E-06	7.0E-06	4.8E-03	3.1E-02	2.0E-02	6.0E-04	186.3
Nash Run	3,284,499	96.06	11.07	2,179.8	1,814	1,015	109.7	4.4E-02	1.5E+00	4.7E-01	5.1E-01	5.5E-03	3.5E+00	2.7E-04	8.7E-05	3.9E-04	1.0E-03	8.0E-06	2.6E-05	1.8E-02	1.2E-01	7.9E-02	2.3E-03	728.1

Watershed	Runoff Retained (gallons)	TN (lbs)	TP (lbs)	TSS (lbs)	Fecal Coliform (billion MPN)	BOD (lbs)	Oil and Grease (lbs)	Arsenic (lbs)	Copper (lbs)	Lead (lbs)	Cadmium[1] (lbs)	Mercury (lbs)	Zinc (lbs)	Chlordane (lbs)	DDD (lbs)	DDE (lbs)	DDT (lbs)	Dieldrin (lbs)	Heptachlor Epoxide (lbs)	PAH1 (lbs)	PAH2 (lbs)	PAH3 (lbs)	TPCB (lbs)	*E. coli* (Billion MPN)
Normanstone Creek	131,618	3.72	0.43	67.4	70	26	4.6	1.7E-03	5.9E-02	1.8E-02	2.0E-02	2.1E-04	1.1E-01	1.1E-05	3.4E-06	1.5E-05	3.8E-05	3.2E-07	1.1E-06	7.2E-04	4.6E-03	3.0E-03	9.0E-05	28.0
Northwest Branch	3,985,451	119.33	13.54	2,614.5	2,181	1,212	121.6	5.3E-02	1.8E+00	5.6E-01	6.2E-01	6.6E-03	4.3E+00	3.3E-04	1.0E-04	4.7E-04	1.2E-03	9.7E-06	3.2E-05	2.2E-02	1.4E-01	9.5E-02	2.8E-03	875.2
Oxon Run	3,383,154	100.74	11.51	1,290.3	1,854	821	99.3	4.5E-02	1.6E+00	4.8E-01	5.3E-01	5.6E-03	3.0E+00	2.8E-04	8.9E-05	4.0E-04	1.0E-03	8.2E-06	2.7E-05	1.9E-02	1.2E-01	8.2E-02	2.4E-03	743.9
Pinehurst Branch	342,414	9.82	1.12	174.6	181	68	11.9	4.5E-03	1.5E-01	4.7E-02	5.1E-02	5.5E-04	3.0E-01	2.8E-05	8.7E-06	3.9E-05	1.0E-04	8.3E-07	2.7E-06	1.9E-03	1.2E-02	7.9E-03	2.3E-04	72.5
Piney Branch	13,207	0.37	0.04	6.6	7	3	0.5	1.7E-04	5.8E-03	1.8E-03	1.9E-03	2.1E-05	1.1E-02	1.1E-06	3.3E-07	1.5E-06	3.8E-06	3.2E-08	1.1E-07	7.3E-05	4.6E-04	3.0E-04	8.9E-06	2.7
Pope Branch	163,319	4.56	0.52	100.0	85	49	5.0	2.1E-03	7.2E-02	2.2E-02	2.4E-02	2.6E-04	1.6E-01	1.3E-05	4.1E-06	1.8E-05	4.7E-05	4.0E-07	1.3E-06	9.0E-04	5.7E-03	3.7E-03	1.1E-04	33.9
Portal Branch	45,990	1.39	0.15	22.8	24	9	1.6	5.9E-04	2.0E-02	6.1E-03	6.7E-03	7.3E-05	3.9E-02	3.8E-06	1.2E-06	5.1E-06	1.3E-05	1.1E-07	3.7E-07	2.5E-04	1.6E-03	1.0E-03	3.1E-05	9.6
Potomac Lower	4,854,710	141.55	16.18	1,807.0	2,616	1,166	140.5	6.4E-02	2.2E+00	6.8E-01	7.4E-01	7.9E-03	4.3E+00	4.0E-04	1.3E-04	5.6E-04	1.4E-03	1.2E-05	3.9E-05	2.7E-02	1.7E-01	1.1E-01	3.4E-03	1,049.7
Potomac Middle	601,308	22.96	3.17	359.1	463	141	75.1	1.0E-02	3.8E-01	1.3E-01	1.4E-01	1.3E-03	7.5E-01	5.3E-05	2.1E-05	1.0E-04	2.4E-04	1.5E-06	4.8E-06	3.3E-03	2.4E-02	2.2E-02	5.5E-04	185.7
Potomac Upper	6,178,435	179.72	20.64	2,312.0	3,341	1,448	180.0	8.2E-02	2.8E+00	8.7E-01	9.5E-01	1.0E-02	5.4E+00	5.1E-04	1.6E-04	7.2E-04	1.8E-03	1.5E-05	4.9E-05	3.4E-02	2.2E-01	1.5E-01	4.3E-03	1,340.8

Watershed	Runoff Retained (gallons)	TN (lbs)	TP (lbs)	TSS (lbs)	Fecal Coliform (billion MPN)	BOD (lbs)	Oil and Grease (lbs)	Arsenic (lbs)	Copper (lbs)	Lead (lbs)	Cadmium[1] (lbs)	Mercury (lbs)	Zinc (lbs)	Chlordane (lbs)	DDD (lbs)	DDE (lbs)	DDT (lbs)	Dieldrin (lbs)	Heptachlor Epoxide (lbs)	PAH1 (lbs)	PAH2 (lbs)	PAH3 (lbs)	TPCB (lbs)	*E. coli* (Billion MPN)
POTTF_DC	22,964,241	450.63	52.46	7,614.6	8,473	3,245	523.7	2.1E-01	7.1E+00	2.2E+00	2.4E+00	2.5E-02	1.4E+01	1.3E-03	4.1E-04	1.8E-03	4.7E-03	3.6E-05	1.2E-04	8.2E-02	5.4E-01	3.8E-01	1.1E-02	3,400.7
POTTF_MD	2,448,559	25.73	2.96	329.1	471	200	27.9	1.1E-02	4.0E-01	1.2E-01	1.3E-01	1.4E-03	7.7E-01	7.1E-05	2.3E-05	1.0E-04	2.6E-04	2.1E-06	6.8E-06	4.7E-03	3.0E-02	2.1E-02	6.0E-04	189.2
Rock Creek Lower	2,194,284	74.68	9.24	1,562.2	1,505	520	76.0	3.5E-02	1.2E+00	4.0E-01	4.4E-01	4.3E-03	2.5E+00	1.9E-04	7.0E-05	3.3E-04	8.2E-04	5.3E-06	1.8E-05	1.2E-02	8.6E-02	6.9E-02	1.8E-03	604.1
Rock Creek Upper	12,180,614	346.33	39.80	6,240.3	6,451	2,407	451.3	1.6E-01	5.5E+00	1.7E+00	1.8E+00	2.0E-02	1.1E+01	1.0E-03	3.1E-04	1.4E-03	3.6E-03	2.9E-05	9.7E-05	6.7E-02	4.3E-01	2.8E-01	8.3E-03	2,589.1
Soapstone Creek	764,794	24.01	2.75	446.8	448	151	26.5	1.1E-02	3.8E-01	1.2E-01	1.3E-01	1.3E-03	7.3E-01	6.5E-05	2.1E-05	9.7E-05	2.5E-04	1.9E-06	6.1E-06	4.2E-03	2.8E-02	2.0E-02	5.7E-04	179.7
Texas Avenue Tributary	47,766	1.34	0.15	29.2	25	14	1.5	6.1E-04	2.1E-02	6.4E-03	7.0E-03	7.6E-05	4.8E-02	3.9E-06	1.2E-06	5.3E-06	1.4E-05	1.2E-07	3.8E-07	2.6E-04	1.7E-03	1.1E-03	3.2E-05	9.9
Tidal Basin	76,122	2.11	0.24	26.7	39	18	2.1	9.8E-04	3.4E-02	1.0E-02	1.1E-02	1.2E-04	6.4E-02	6.2E-06	1.9E-06	8.5E-06	2.2E-05	1.8E-07	6.1E-07	4.2E-04	2.6E-03	1.7E-03	5.1E-05	15.8
Washington Ship Channel	512,500	20.50	2.89	327.9	417	120	72.6	9.2E-03	3.4E-01	1.1E-01	1.2E-01	1.1E-03	6.8E-01	4.6E-05	1.9E-05	9.0E-05	2.2E-04	1.2E-06	4.1E-06	2.8E-03	2.1E-02	2.0E-02	4.9E-04	167.3
Watts Branch	1,643,782	48.27	5.58	1,053.8	883	493	64.9	2.2E-02	7.5E-01	2.3E-01	2.5E-01	2.7E-03	1.7E+00	1.4E-04	4.3E-05	1.9E-04	4.9E-04	4.0E-06	1.3E-05	9.0E-03	5.8E-02	3.9E-02	1.1E-03	354.5
Watts Branch - Lower	925,380	26.77	3.19	614.1	511	278	43.0	1.2E-02	4.3E-01	1.3E-01	1.5E-01	1.5E-03	1.0E+00	7.7E-05	2.5E-05	1.1E-04	2.8E-04	2.2E-06	7.4E-06	5.1E-03	3.3E-02	2.2E-02	6.5E-04	205.2

Watershed	Runoff Retained (gallons)	TN (lbs)	TP (lbs)	TSS (lbs)	Fecal Coliform (billion MPN)	BOD (lbs)	Oil and Grease (lbs)	Arsenic (lbs)	Copper (lbs)	Lead (lbs)	Cadmium[1] (lbs)	Mercury (lbs)	Zinc (lbs)	Chlordane (lbs)	DDD (lbs)	DDE (lbs)	DDT (lbs)	Dieldrin (lbs)	Heptachlor Epoxide (lbs)	PAH1 (lbs)	PAH2 (lbs)	PAH3 (lbs)	TPCB (lbs)	*E. coli* (Billion MPN)
Watts Branch - Upper	718,402	21.50	2.40	439.7	372	215	21.9	9.2E-03	3.2E-01	9.6E-02	1.0E-01	1.1E-03	7.3E-01	5.9E-05	1.8E-05	8.0E-05	2.1E-04	1.7E-06	5.7E-06	3.9E-03	2.5E-02	1.6E-02	4.8E-04	149.3
CSS - Anacostia	20,306,617	590.30	68.44	13,443.2	11,188	6,218	717.2	2.7E-01	9.5E+00	2.9E+00	3.2E+00	3.4E-02	2.2E+01	1.7E-03	5.4E-04	2.4E-03	6.2E-03	4.9E-05	1.6E-04	1.1E-01	7.3E-01	4.9E-01	1.4E-02	4,490.2
CSS - Potomac	1,969,530	62.08	7.20	1,179.9	1,161	389	74.8	2.8E-02	9.7E-01	3.1E-01	3.4E-01	3.4E-03	1.9E+00	1.7E-04	5.5E-05	2.5E-04	6.4E-04	4.8E-06	1.6E-05	1.1E-02	7.2E-02	5.3E-02	1.5E-03	466.1
CSS - Rock Creek	5,410,978	155.00	17.69	1,949.7	2,855	1,270	156.7	7.1E-02	2.4E+00	7.4E-01	8.1E-01	8.7E-03	4.6E+00	4.5E-04	1.4E-04	6.1E-04	1.6E-03	1.3E-05	4.3E-05	3.0E-02	1.9E-01	1.2E-01	3.7E-03	1,145.7

Submerged Aquatic Vegetation

DOEE's Fisheries Management Branch (FMB) has monitored submerged aquatic vegetation (SAV) since 1993. In this time, the FMB compiled an extensive amount of data that reflects the growth and decline of submerged aquatic vegetation (SAV) species within the District. Not only does SAV provide an important habitat for juvenile and adult aquatic life, it provides sediment stabilization and improves water quality. Considered suitable areas for refuge, feeding, and reproduction, SAV beds are of utmost ecological importance in a watershed system (Kraus, Jones 2012). However, SAV is vulnerable to nutrient and sediment pollution caused by runoff. Because the District's highly urbanized area causes substantial runoff to enter the environment, monitoring the health of SAV is vital when considering the health of the aquatic ecosystem.

2021 observations revealed four different species of SAV in District waters: *Ceratophyllum demersum*; *Hydrilla verticillata*; *Najas minor;* and *Vallisneria americana* (only found in restoration exclosures). A total of 6.9 acres of SAV were recorded in 2021, all the SAV mapped being found in the Anacostia River. Acreage of SAV in the District was recorded at an all-time high of 1176.15 acres in 2017. Starting in 2018, SAV abundance and species diversity has decreased District-wide (Figure 3.2). The major factor in the decrease of SAV in 2018 was the record-breaking precipitation the region experience. The National Weather Service gage at National Airport recorded 61.34 inches of rain as of December 15, 2018. With increased stormwater discharges, and the resulting increase in turbidity and flow, SAV was not able to obtain the nutrients needed (sunlight, etc.) to grow and flourish when looked at on a District-wide basis. Continued effects of heavy rainfall in 2018 were seen during the 2019 SAV ground truthing survey. All SAV found in the District since 2019 is within the Anacostia River – 2019 (92.6 acres), 2020 (67.2 acres) and 2021 (6.9 acres).

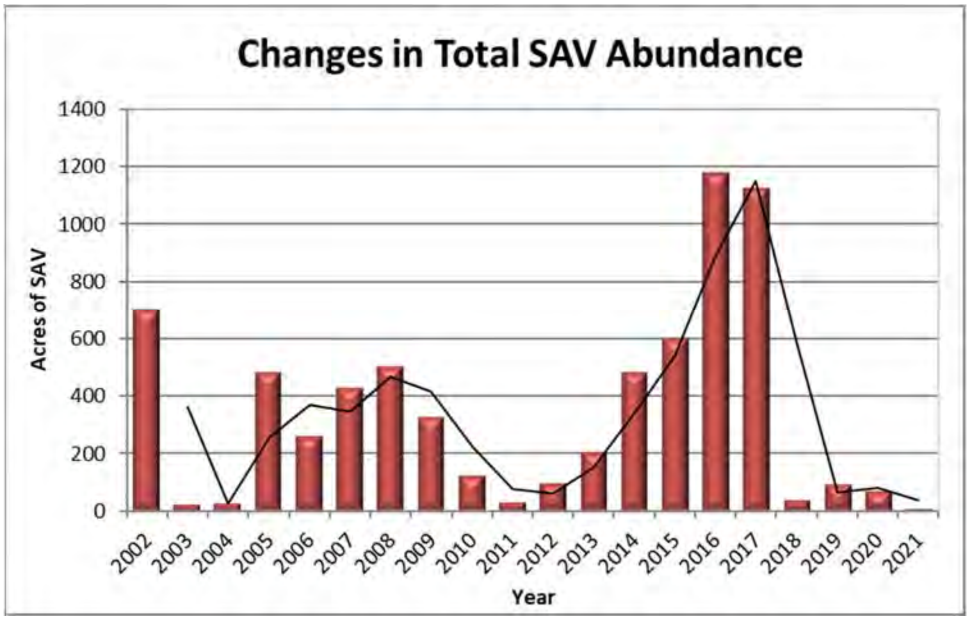


Figure 3.2 **SAV abundance by year**.

Aquatic Habitat Restoration

SAV also provides vital ecosystem functions in river systems, including improving water quality, stabilizing sediment, and serving as habitat and forage for fish and wildlife species. The District's waters have historically supported large SAV beds in shallow areas of the Potomac and Anacostia Rivers, but because of urban development in the watershed and resulting water quality degradation, these beds have been compromised or even lost. To combat these losses, DOEE has begun a restoration program in the Anacostia and Potomac Rivers. Because of its historical dominance, Chesapeake Bay *Vallinsneria americana* (wild celery) was designated the most suitable native SAV for the restoration efforts (Davis, 1985). Three sites were selected based on historical maps, water quality, and the guidelines set forth in the Second Technical Synthesis for SAV Restoration (Batiuk, 2000). DOEE used wild harvested plants and seeds from the Potomac River in Maryland to establish new beds in the designated planting areas. Once sites are planted, biologists will monitor the sites for percent crown cover of plants as well as fish community data to determine if SAV plantings are influencing the fish community.

In 2019, the healthy growth of SAV at the Buzzards Point/James Creek site continued. Cover density was measured at a 4 (70-100%). The lack of active replanting of adult *V. americana* every year was determined to contribute to the site success. In 2019, the Anacostia River was the only water body in the District where SAV grew. In fact, it was the highest amount of SAV ever recorded in the Anacostia at 92.6 acres. A cover density score of 0 at the Buzzard Point/James Creek restoration site was measured in 2020. Only 6.9 acres of SAV was recorded District-wide in 2021. No SAV was found outside of the Anacostia River. Although the District experienced the lowest amount of SAV in over a decade, the restoration site at Buzzards Point/James Creek scored a cover density of 3 (40%-70%) comprised 100 percent of *V. americana*.

Initial plantings of *V. americana* at the Oxon Cove site on the Anacostia River began in 2016. Two exclosures were installed at the Oxon Cove site for the 2017 planting season. These exclosures were indispensable to the survivability of the *V. americana* plants at this site. For the second year, no adult V. americana were installed at the Oxon Cove site due to the previously stated reasons. Although no adult plants were installed at the Oxon Cove site in 2018, a healthy bed was observed during the 2019 ground-truthing survey with a cover density score of 4 (70-100%). However, this bed was comprised of *H. verticillata* (40 percent), *N. minor* (50 percent), and *V. americana* (10 percent). This was the first year in which other species of SAV have been found inside the exclosure at this site. Flower stalks were not observed at the Oxon Cove site in the late summer of 2019. Similar to the Buzzards Point/James Creek site, the lack of yearly adult plantings of *V. americana* for the past two tears directly relates to the success of SAV inside the exclosures. Mirroring the Buzzards Point/James Creek restoration site, there was no SAV found within the exclosure in 2020. During the 2021 ground truthing survey, the Oxon Cove restoration site received a cover density score of 3 (40-70 percent) and was completely comprised of *V. americana*. Oxon Cove's seclusion from the main stem of the river may add additional protection and serve as a "bank" of SAV in years when SAV is sparse in the District, including years in which the District receives record-breaking precipitation. For this reason, biologists believe this site to be significant to the overall success of SAV growing efforts in the District waters. Continued monitoring and planting will continue at this site in 2022. DC Fisheries will be expanding restoration efforts in Oxon Cove in 2022 by installing 30 exclosures and planting adult *V. americana* during the spring sampling season. This expansion is a result of a grant awarded from USACE and NPS.

Fish data collection at the Buzzards Point/James Creek restoration site began in March 2021 and ended in November 2021. This is the ninth year in which DOEE FWD staff have collected fish data at this site. A total of 217 fish were caught representing 15 different species between May and November 2021. This period represents the period of the year in which SAV may be present. Biomass in grams per repetition (g/rep) has steadily increased at the Buzzards Point/James Creek site until 2019 when a drastic decline in biomass was experienced (Figure 3.3). Biomass continued to decrease in 2020 in the absence of SAV. This may be due in part to the fact that sampling only occurred between September-November 2020 due to the pandemic. A slight increase in biomass was recorded during the 2021 sampling season. For biomass, DOEE used data collected only during periods when SAV may be present (May-November). This is the same method used when calculating biomass in the District SAV report.

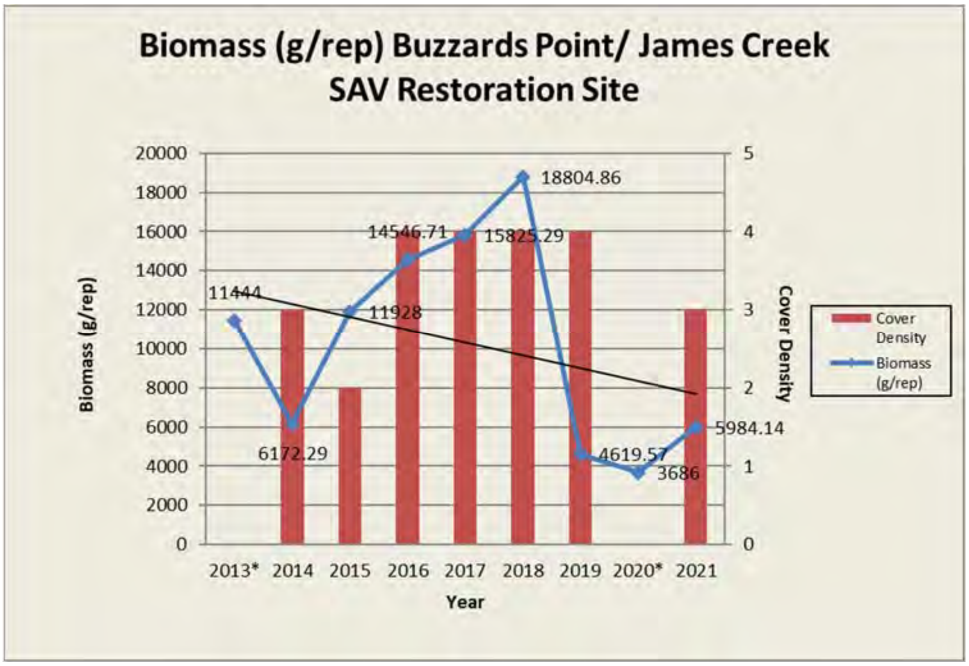


Figure 3.3 Biomass (g/rep) at Buzzards Point/James Creek site, from May-November, 2013-2021.

Using biomass as indicator for fish community monitoring is helpful in visualizing the overall impact SAV is having on the area. Since 2013 when monitoring began at Buzzards Point/ James Creek, there has been a substantial increase in fish biomass every year until 2019. There was a large decrease in biomass at the Buzzards Point/James Creek site in 2019, 4619.57 g/rep, which continued into 2020 with 3686 g/rep. Biomass increased to 5981.14 g/rep in 2021, which is the highest recorded amount since 2018. Overall, in 2021, fish abundance and total SAV acreage were down, which may also have contributed to lower biomass numbers.

Although the District SAV has not fully recovered from the heavy rains of 2018, it is hoped re-growth will occur in the years to come. While grazing is still a problem at all restoration sites, it is hoped that the growth of *V. americana* will soon outpace the destruction due to grazing. If this occurs, enclosures can eventually be removed and sites could be self-sustaining. Restoration efforts will continue to be a priority for DOEE's FWD in 2022.

Monitoring Heavy Metals and Organic Compounds in the Air

Air toxics, or hazardous air pollutants (HAPs), are pollutants known or suspected to cause cancer, other serious health impacts, and adverse environmental effects. The federal Clean Air Act (CAA) currently regulates 188 HAPs. EPA's Government Performance Results Act (GPRA) set a goal of reducing HAP emissions by 75% nationwide between 1993 and 2010 to significantly reduce the risks to human health from air pollution. EPA is working to further refine this goal to protect human health and the environment by reducing the risks from air toxic emissions, and particularly focusing on populations and areas disproportionately impacted by air pollution, which include, for example, urban areas, children at risk, and populations whose water and food are affected by persistent, bio-accumulating toxics. Assessing progress in reducing cumulative risk from HAPs will require EPA to move away from a focus on assessing reductions from tons per year emitted toward a focus on estimating reductions in cancer and non-cancer risks associated with lower emissions.

The National Air Toxics Trends Station (NATTS) Network was developed to fulfill the need for long-term HAP monitoring data of consistent quality. The goal of ambient air toxics monitoring is to support the reduction of public exposure to HAPs. Ambient data play a critical role by characterizing HAPs concentrations to support three objectives – assessing trends, exposure assessments, and air quality model evaluation. The NATTS Network was initiated in 2003 and the current network configuration includes 26 sites (21 urban, 5 rural) across the United States. There are typically over 100 pollutants monitored at each NATTS. Target HAPs include volatile organic compounds (VOCs), carbonyls, heavy metals, and polycyclic aromatic hydrocarbons (PAHs).

Since 2004, DOEE's Air Quality Division has been operating a special purpose NATTS site for ambient measurement of air toxics of primary concern, including heavy metals in the District's air. The NATTS monitoring site is located on the grounds of the McMillan Reservoir.

Table 3.12 DOEE NATTS Monitoring Site

Site Name Air Quality System ID	Street Address	City, State, ZIP	Latitude, Longitude
McMillan 11-001-0043	2500 First Street, NW	Washington, DC 20001	38.921847 deg N, 77.013178 deg W

Daily (24-hour) air samples are collected on a 1-in-6-day schedule throughout the year. The collected samples are sent for laboratory analysis. The District's NATTS site also includes an Aethalometer for continuous sampling of black carbon and diesel particulate matter in the ambient air.

DOEE reports the quality assured air monitoring data from its NATTS site to EPA's national air database: https://www.epa.gov/outdoor-air-quality-data. Additionally, EPA coordinates the development of a detailed annual report for NATTS and other special purpose monitoring programs. The 2015-2016 National Monitoring Programs Annual Report - UATMP, NATTS, CSATAM (EPA Contract No. EP-D-14-030, July 2018) provides data summaries and air toxics trends measured in recent years at the national network including the District's NATTS air monitoring site.

Road Salt Reduction Pilot

The District's MS4 permit requires the District to pilot road salt alternatives and incorporate its findings into the District's snow removal strategy. This project, developed in collaboration with the Department of Public Works (DPW), will be implemented during the FY 2022 Snow Season, provided favorable weather conditions occur. Specifically, the project will compare the effectiveness of alternative de-icing practices, including the use of a salt alternative, Calcium

Magnesium Acetate, and the use of a pre-wetting technology to wet road salt as it is being applied, with the existing deicing practice of dry road salt application (control scenario). To best target the effectiveness of each deicing treatment scenario, the pilot will be deployed during events for which plowing is not needed. Qualifying weather events will include ice, freezing rain, slush, and snow accumulations of less than 2 inches.

Pre- and Post-restoration Stream Water Quality Monitoring

In 2017, DOEE first awarded funds to MWCOG to conduct water quality monitoring at several streams to assess conditions both before and after stream restorations were executed. Since that time, MWCOG has monitored a variety of parameters to assist DOEE in evaluating stream restoration projects, including water quality (flow, temperature, dissolved oxygen, and pH), macroinvertebrates, fish, geomorphology, and vegetation. Monitoring conducted for this program has occurred for projects at Nash Run, Pope Branch, Watts Branch, Fort Dupont, Fort Davis (near Park Drive), Stickfoot Branch, Springhouse Run, Broad Branch, Linnean Park, Milkhouse Ford, Bingham Run, Texas Avenue Tributary (at Alger Park and near Park Drive), and Spring Valley. Monitoring is expected to continue at each site for 5 years after restoration is complete. New monitoring sites will be added when new restoration projects are selected.

RiverSmart Washington Monitoring

The RiverSmart Washington project began in FY 2015 when the District retrofitted two neighborhoods with stormwater retention practices to reduce stormwater runoff volume in Northwest Washington. DDOT, DC Water, and DOEE formed a partnership to complete the project, which was partially funded by a grant from the National Fish and Wildlife Foundation. The practices installed included various types of permeable and porous surfaces (permeable pavers, permeable pavement panels, porous concrete, and porous asphalt) in alleys, roads, and parking lanes; and bioretention (raingardens) within the roadside right of way.

Prior to the project, the District monitored the area for a year to determine the amount of stormwater runoff from the neighborhoods. In FY 2016 and FY 2017, DOEE monitored the project areas and one control area to calculate the stormwater runoff reduction from the installed projects. The results of the monitoring were inconclusive. There are a few potential reasons for this result, including:

- Active construction in one of the neighborhoods during the post-restoration monitoring time period;
- Lack of proper BMP maintenance;
- Inaccuracy of the flow meters installed during periods of low flows; and
- No rainfall data from the control monitoring area.

In 2019, a second phase of monitoring occurred before and after maintenance and deep cleaning/rehabilitation was conducted by DDOT contractors. Monitoring efforts, which occurred from June 2019 through July 2020, included end-of-the-pipe flow monitoring of the sewersheds as well as practice-level monitoring of individual GSI locations using meters and moisture sensors to sample the various types of practices.

As is often the case in field experiments, it was difficult to control all the experimental variables. Factors such as rainfall, construction, equipment failures, and differences in maintenance varied between sewersheds and between monitoring years. These factors, along with limitations in the precision of monitoring equipment, resulted in the sewershed level monitoring being largely inconclusive. The RiverSmart Washington results are similar to those that both Philadelphia Water and DC Water have had in monitoring their Long-Term Control Plan implementation. Contrary to predicted results, end-of-pipe flows from the experimental sewersheds may have increased after GSI was installed, though increases were less than observed in the control site. However, the data also indicate that peak flow response at the sewershed scale was reduced after practices were rehabilitated.

Unlike the sewershed scale monitoring, the practice-level monitoring did provide more conclusive results and indicated that practices were functioning as designed, capturing stormwater flows and, in some cases, filtered stormwater passing quickly through practices and back into the storm sewer systems. Monitoring also showed that practices responded well to deep cleaning and rehabilitation. There was definitive improvement in performance in most monitored practices in post-rehabilitation monitoring. However, for some permeable surfaces, the improvement in performance was short-lived as those surfaces quickly re-clogged. Bioretention practices maintained undiminished functionality for the entire post-rehabilitation monitoring period. Across the spectrum of permeable and pervious surfaces, permeable pavers demonstrated greater infiltration capacity, responded better to maintenance cleaning, and retained effectiveness for longer duration in between maintenance intervals.

Hickey Run Trash BMP Monitoring

Utilizing federal funds provided under the American Recovery and Reinvestment Act (ARRA), DOEE installed a BMP at an outfall to Hickey Run to capture trash and sediment. In mid-FY 2017, DOEE contracted to maintain the BMP and monitor the pollutant loads captured. Since July 2017, there have been seven quantifications of trash removed from the BMP. During the removal process, plastic and glass bottles and cans were set aside and bagged separately. Figure 3.4 demonstrates how trash capture has changed over time.

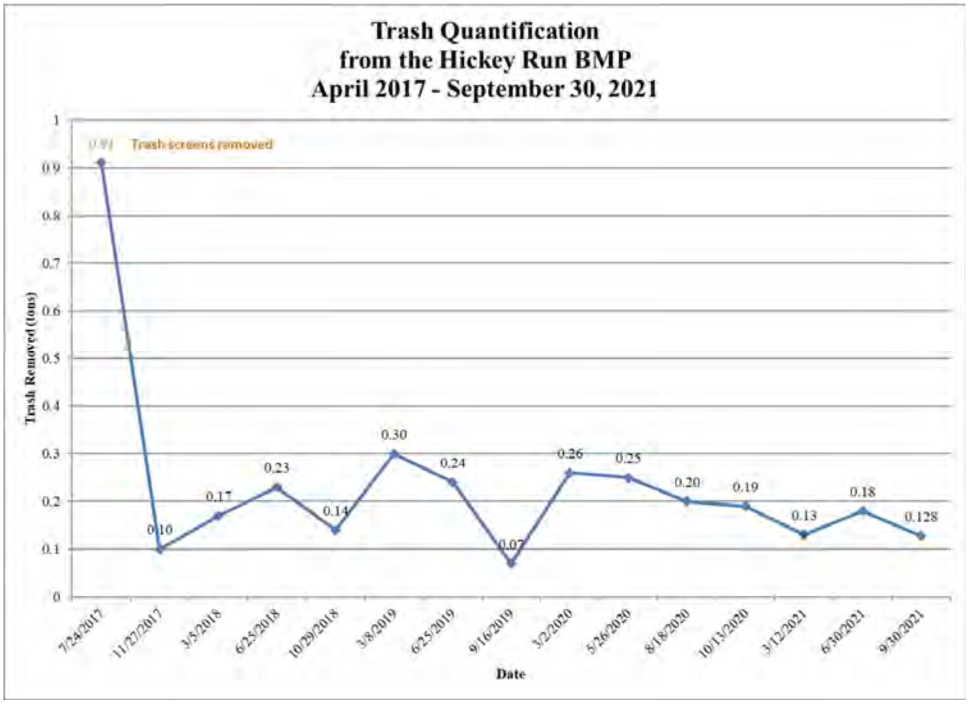


Figure 3.4 Trash Capture by the Hickey Run BMP from April 2017 through September 2021.

The BMP was originally outfitted with screens at the downstream discharge location, presumably to enhance trash removal performance. However, the screens clogged rapidly, which raised the water surface elevation within the BMP structure, forcing flows through the trash box openings, and thereby negating the sediment capture achieved by the BMP. Screens from the trash BMP were removed in April 2017 to correct the bypass issue and as can be seen in Figure 3.4, this adjustment reduced the quantity of trash that the BMP captures.

DOEE is actively considering a retrofit solution for this BMP that will maximize both sediment and trash capture.

Sediment removal occurred five times over the same period. The contractor removed a total of 330.16 tons (660,320 pounds) of sediment that had accumulated in the BMP between April 2017 and November 2020 (Figure 3.5).

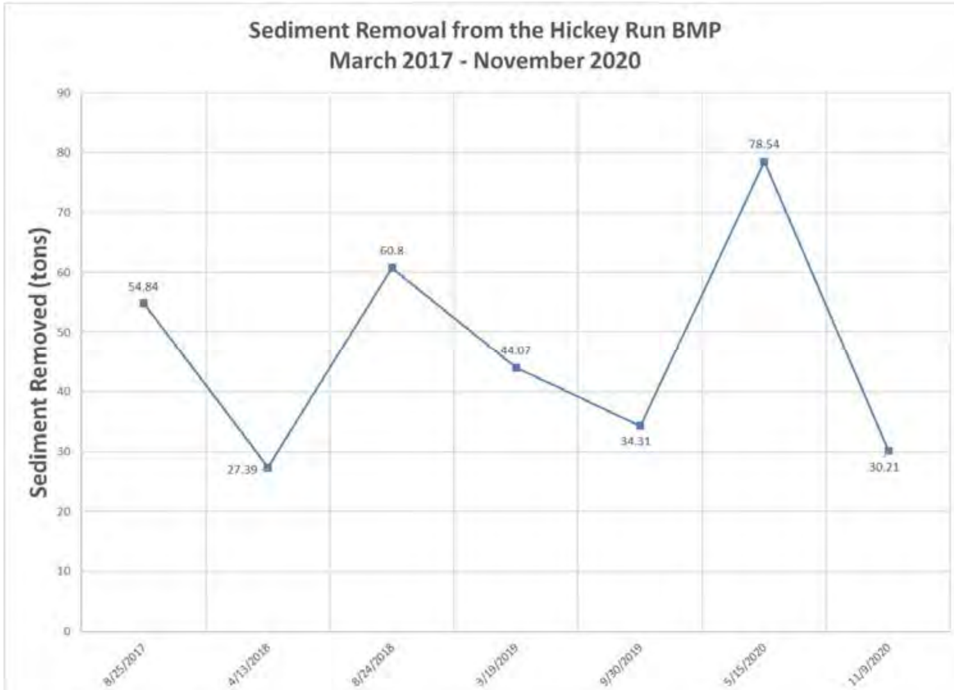


Figure 3.5 Sediment Removal from the Hickey Run BMP from March 2017 through September 2019.

Real-Time Controls for Bioretention

In 2019, DOEE commissioned a monitoring study to assess the efficacy of integrating adaptive controllers that regulate the amount of stormwater retained and released in LID facilities for the purposes of improving green stormwater infrastructure performance in the District.

Adaptive control allows an existing facility to meet water quality improvement and flood mitigation objectives by both capturing smaller, more frequent wet weather events to provide water quality retention benefits and managing flows from large events for flood and stream erosion protection (i.e., the system modulates the flow rate out of the LID facility during large events to continuously avoid overflowing). Cloud-based software compares the near-term forecasted rainfall from the National Weather Service with the current volume in the LID facility and drains the excess forecasted runoff amount of water from the LID facility in advance of the forecasted rain event to expand stormwater retention capture and increase performance of a BMP.

The project included the retrofit of an existing public right of way (PROW) bioretention facility that drained to the Watts Branch tributary of the Anacostia River Watershed with a Continuous Monitoring and Adaptive Control (CMAC) system. The project assessed the design, permitting, and installation of the CMAC system into the existing BMP as well as conducting monitoring and analysis to assess BMP performance before and after the retrofit.

Results of the study were that measured retention out-performed design metrics by nearly a factor of two, which was consistent with results from previous DOEE monitoring studies of bioretention performance. Initial outcomes indicated outfitting under-drained bioretention with passive valves will improve retention performance.

Wetland Mapping and Assessment Activities

Wetlands are among the most productive ecosystems in the world and are vital to the ecology of healthy watersheds. They provide a wealth of benefits to humans, water quality, and wildlife through their functions including storage of floodwater; shoreline erosion protection; recharge of groundwater that sustains river and stream baseflow; and retentions, assimilation, or transformation of nutrients and pollutants that can degrade downstream water quality. In addition, wetlands are integral components of food webs, providing nursery habitat for breeding fish, amphibians, and birds; habitat for wildlife; and exportation of organisms to downstream waters. Wetlands also act as buffers to protect downstream waters from pollution.

Wetlands are the primary habitat used by most species selected for vulnerability consideration in the District's 2015 Wildlife Action Plan. Protection and restoration of the District's wetlands is also vital to the health of the Chesapeake Bay ecosystem.

A mapping effort associated with the 2020 Wetland Conservation Plan (WCP) update identified 291 individual wetlands located within District boundaries, totaling 289 acres. Seventy-six percent (76%) of these wetlands are less than a half-acre in size, and 66 percent are less than a quarter-acre in size. 169 acres are tidal wetlands, and 120 acres are non-tidal. Seventy-four percent (74%) of District wetlands are located within National Park Service land. The District's Aquatic Resources Registry is a publicly available, interactive map of the baseline data containing wetland, stream lines, and submerged aquatic vegetation (SAV) survey results for the last five years.

Over 92 percent of the District's wetlands are located within 500 feet or less of urban development. These urban wetlands face constant challenges, such as habitat loss from development, fragmentation, and altered hydrology, as well as degraded water quality from stormwater runoff, scour from heavy rain events, and invasive plant colonization. Conservation of these important natural resources is vital to the ecology and health of the District's residents, watersheds, wildlife, and economy.

DOEE was awarded a United States Environmental Protection Agency (EPA) Regional Wetland Program Development Grant in October 2020. The scope of this two-year grant included the development of a strategic 3- to 5-year Wetland Program Plan (WPP) and a Wetland Monitoring Program. The WPP provides DOEE with a framework and direction for the next five years to strengthen and improve the District's Wetland Program. The EPA approved the WPP in December 2021. DOEE has selected urban-appropriate wetland function and condition assessment methods and is projected to implement the Wetland Monitoring Program in spring 2022.

Wetlands Protection Activities

On May 14, 2021, DOEE published a final rulemaking to add new Chapters 25 (Critical Area – General Rules) and 26 (Critical Area – Wetlands and Streams) to Title 21 of the District of Columbia Municipal Regulations (DCMR).

Chapters 25 and 26 establish the process for a project that proposes to impact wetlands and streams in the District. These regulations establish the permit application and review process for regulated activities that require either a District wetland and stream permit or a Clean Water Act Section 401 (33 U.S.C. § 1341) water quality certification. They establish the criteria to determine if a proposed project is water-dependent, or if the proposed project is not water-dependent and has no practicable alternative. They also detail the planning process to avoid and minimize wetland and stream impacts to the maximum extent practicable. Finally, the regulations describe the mitigation requirements for impacts to wetlands and streams that are necessary to ensure lost wetland and stream functions are replaced, and to ensure no net loss of wetland and stream acreage occurs.

3.7 Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program (Section 303(d) "New Vision"

On December 5, 2013, EPA announced a new collaborative framework to manage program responsibilities and to identify and prioritize waterbodies for restoration and protection, entitled *A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program*. This new Vision has six pillars to be addressed in stages as follows:

1. 2016 – Engagement
1. 2016 – Prioritization, Protection, Integration
2. 2018 – Alternatives
3. 2020 – Assessment (Site-specific)
4. 2022 – Evaluate accomplishments of the Vision and Goals

The engagement pillar recommends that the District actively engage stakeholders to improve and protect water quality demonstrated by documented, inclusive, transparent, and consistent communication, including requesting and sharing feedback on proposed approaches and enhanced understanding of program objectives. The prioritization, protection, and integration pillar recommend the District identify its long-term CWA Section 303(d) Program priorities in the context of its overall water quality goals.

The District's *303(d) Program New Vision Stakeholder Engagement Strategy and 303(d) Program New Vision Prioritization Strategy* documents (Appendix 3.5 303(d) Program New Vision: Stakeholders Engagement Strategy and Prioritization Strategy) was finalized and incorporated as part of the revised 2016 Integrated Report, which was approved by EPA on February 2, 2017. Accomplishments from implementing these strategies across the District's Section 106 and Section 319 programs include the following since FY 2017:

1. Collaboration with EPA to implement the 303(d) New Vision pillars and elements.
2. Continuation of its *Prioritization Strategy* for the 2016–2022 period:
    a. Priority #1 - Revise TMDLs subject to court order deadlines or consent decree agreement(s) (see toxics "the TMDLs revisions" subsection above). For example, the

District and EPA successfully collaborated and finalized the Rock Creek Toxics revisions. Ongoing efforts to collect additional data for the Anacostia Watershed toxics TMDLs revision are also co-funded by EPA and the District (DOEE); and

   b. Priority #2 - Identify new TMDL projects in which DOEE's and EPA's national and/or regional priorities intersect, and where opportunities for collaboration exist.

3. Engagement of relevant stakeholders across its 319 and 303(d) Programs (stream restoration efforts, TMDL development and implementation planning activities). [See, for example, the development of the "Consolidated TMDLs Implementation Plan," which is elaborated upon elsewhere in this report].

4. Encouraged the participation of the following in implementing the Plan:

   a. DOEE staff, through various meetings, workshops, and trainings to acquire new knowledge, data and information and share these widely to empower stakeholders.

   b. Stakeholders (e.g., DC Water, MWCOG, federal government facilities or their respective representatives) in the Chesapeake TMDLs program-related conference calls and meetings. These meetings are meant to improve stakeholders' knowledge and help them understand DOEE's expectations in terms of implementing projects and providing feedback.

Chapter 4 Public Health-Related Assessments

Drinking Water Program Monitoring and Assessments

Drinking water for the District is treated by the Washington Aqueduct, which is federally-owned and operated by the USACOE. The Aqueduct is responsible for compliance with all the regulations that pertain to water treatment such as filtration, disinfection and chemical contaminant removal, and corrosion control. DC Water purchases the treated water and distributes it to District residents. Drinking water quality is regulated by EPA Region 3. DC Water collaborates with the USACOE Washington Aqueduct to control corrosion of pipes and plumbing throughout the District to minimize the release of lead into water. DC Water monitors for lead at the tap and helps customers identify lead sources on their property by testing for lead in drinking water samples.

Lead Pipe Replacement

The Lead Service Line Priority Replacement and Disclosure Amendment Act of 2018, D.C. Law 22-241 (Lead Service Line Act) prohibits DC Water from replacing the public portion of a lead service line without replacing the portion on private property, unless DC Water requests and is unable to obtain consent of the owner. The cost of replacement is paid by DC Water using appropriated funds. If funding to replace the private portion is not available, DC Water may only replace the public portion if necessary to repair a damaged line or to comply with federal regulations after exceedance of a lead action level. If the property owner decides to pay to replace the private portion of a lead water line, DC Water may replace the public portion at the same time.

The Lead Service Line Act also creates a payment assistance program for property owners who seek to replace the private portion of a lead service line when the public portion is not lead. Payment assistance is awarded on a sliding scale as a percentage of the replacement cost depending on the owner's income. DOEE created a payment assistance application form and notifies an applicant of approval or denial of each application. DOEE transfers funding for replacements to DC Water.

DOEE and DC Water have partnered to implement two new programs to ensure that the entire lead service pipe is replaced in full:

1) Full Lead Water Service Line Replacement Program - District funds cover the cost of the lead water service pipe replacement on private property when DC Water replaces the portion of the pipe in public space; and

2) Lead Pipe Replacement Assistance Program (LPRAP) – District funds are provided to assist with the cost to replace the lead service lines on private property when the service pipe in public space is not lead. Under this program, 50 percent of the replacement costs will be paid from District funds (up to $2,500), regardless of income. Residents who meet specific income requirement can qualify for up to 100 percent of the replacement cost to be covered by the.

Lead in Water in Multiple Dwellings

The Multiple Dwelling Residence Water Lead Level Test Act of 2004, D.C. Law 15-303, requires owners of multi-family buildings and unit owners associations for condominiums to request lead test kits from DC Water and provide them to tenants or owner-occupants upon request.

DC Water provides the test kit, and the owner or association must, within 15 days of receipt of the test kit, provide the test kit to the tenant or occupant. The tenant or occupant collects the sample and sends it to DC Water to be tested. DC Water tests the lead level and mails the results to the owner or association and the tenant or occupant who requested the test. The owner or association is required, within 15 days of receipt of the results, to provide a copy of the result to any tenant who requests the result, post a copy in a conspicuous place, and send a certification to the Mayor that the owner has complied with the tenant notification requirements.

Lead in Drinking Water in Schools and Daycare Centers

DOEE addresses lead in drinking water in all licensed child development facilities (CDF). To that end, the District's City Council passed the Childhood Lead Exposure Prevention Amendment Act of 2017, D.C. Law 22-21 (Act), which requires public schools and public charter schools to, among other things:

- Locate all drinking water sources and install and maintain filters for reducing lead at all drinking water sources.
- Post conspicuous signs on water sources that are not drinking water sources that communicate that the water should not be used for cooking or consumed.
- Test all drinking water sources for lead annually and, if a test result shows that a drinking water source's lead concentration exceeds five (5) parts per billion (ppb):
    - shut off the drinking water source within 24 hours after receiving the test result;
    - determine in writing remediation steps;
    - publicize the test results and remediation steps by sending an email or written correspondence to parent within five (5) days and posting information about the test results and remediation efforts online the DC Public Schools website; and
    - publish a list of drinking water sources with information about filters, testing, and maintenance on the DGS website.

DOEE conducts quarterly Quality Assurance and Primary Prevention Webinars for all Childcare Centers to ensure compliance and standard operating procedures are followed. The Act defines drinking water sources as "a source of water from which a person can reasonably be expected to consume or cook with the water originating from the source".

The District's sampling protocol includes kitchen sinks, water fountains/bubblers, and sinks within the classrooms and bathrooms because those sinks are often used to wash food, to wash bottles used for nursing infants, and to teach children to brush their teeth.

There is no documented safe level of lead in children. The current lead activation level in the District is five (5) ppb of lead in water. However, the goal of the District is for all drinking water sources to contain less than 1 ppb of lead.

Fish Consumption Advisory

In September 2018, United States Fish and Wildlife Service (US FWS) completed a study of fish tissue for contaminants of concern for DOEE on fish caught in District waters. The results of the study revealed decreases in the concentrations of total DDTs and total PAHs – neither organochlorine pesticide exceeded EPA's screen values. Additionally, for most fish species, recommended consumption limits increased over the recommended limits in the fish consumption advisory issued in 2016. To view the current fish consumption advisory, visit the DOEE website (https://doee.dc.gov/node/9582).

Although some contaminant concentrations continue to decrease, DOEE has decided not to issue an updated consumption advisory until more data is collected. DOEE has selected US FWS to conduct a fish tissue study for contaminants of concern, projected to be completed in 2022.

Chapter 5 Groundwater Assessment

5.1 Groundwater Protection

Introduction

This section updates the District's groundwater protection efforts for July 1, 2019 to June 30, 2021. DOEE's Water Quality Division continues to be responsible for groundwater policy, planning, research, and some regulatory oversight. Through a Joint Funding Agreement with USGS, DOEE collects data from the District's groundwater monitoring network and conducts investigations to assess groundwater quantity and quality, evaluate groundwater/surface water interactions and inform groundwater protection strategies. Data from these studies are available at the USGS website: https://waterdata.usgs.gov/dc/nwis/gw.

During the reporting period, groundwater quality sampling was delayed by mandatory lockdowns and other difficulties related to the COVID 19 pandemic. Significant laboratory delays also occurred. Unfortunately, the sample analytical results were not available while this Integrated Report was in development. However, the full dataset will be uploaded to the USGS NWIS website once it received and reviewed for publication.

Ground water levels in the shallow aquifers are consistent with previous years. Seasonal variations also appear to follow normal trends. The deeper Patuxent Aquifer continues to slowly recover (Figure 5.1) from the extensive dewatering events linked to the construction of tunnels and drop shafts for the DC Long Term Control Plan.

Summary of Groundwater Quality

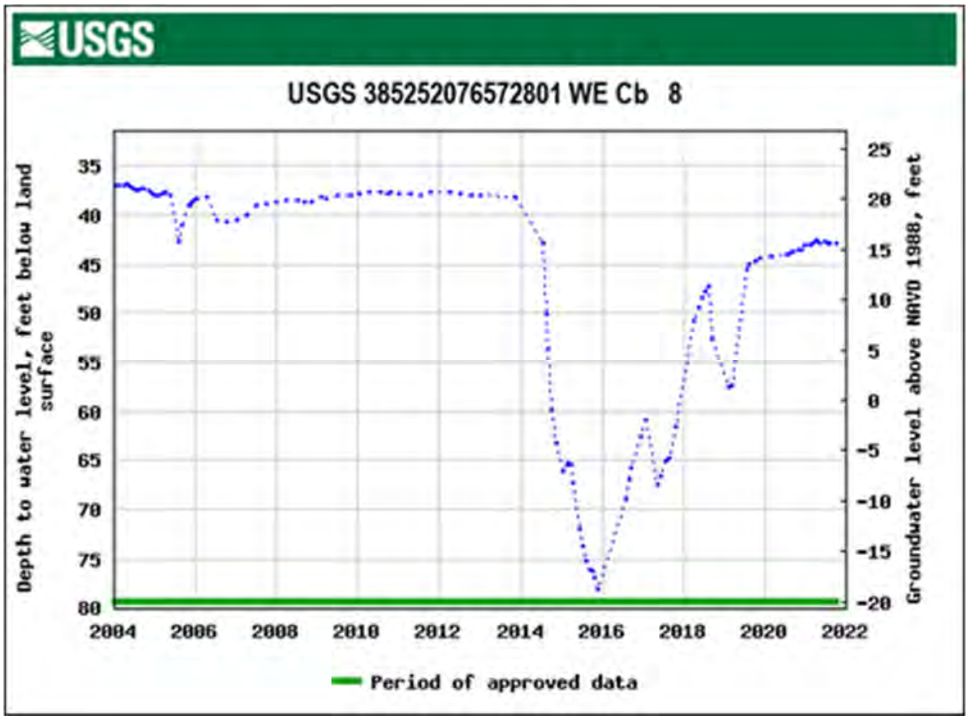
DOEE maintains groundwater monitoring networks in the Anacostia River and Rock Creek watersheds. All existing wells are listed in Appendix 5.1, Groundwater Monitoring Wells, and their mapped locations are presented in Appendix 5.2. Many of the wells are relatively shallow and intercept groundwater flowing to streams while several are in the recharge area for the Patuxent Aquifer (Appendix 5.2). A few deep wells extend into the Patuxent Aquifer. Well construction details are listed in Appendix 5.3.

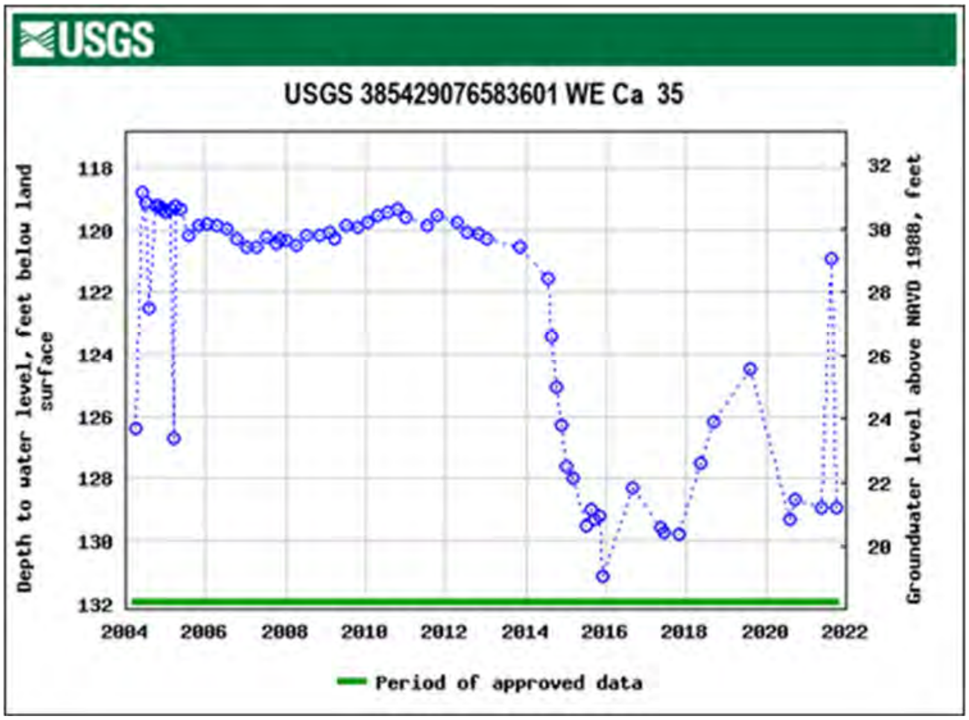
Due to the COVID 19 pandemic, groundwater quality sampling results are unavailable. There were unforeseen delays in collecting samples during the reporting period and some samples had to be collected twice. Laboratories also extended their analytical turnaround times by several months. USGS expects to receive all the data packages by the end of the first quarter of 2022 and is committed to releasing the new data through their NWIS website once it is reviewed. Historic data can be found in the USGS Annual Water Data Reports and were referred to by DOEE in previous Integrated Reports submitted to EPA and Congress.

Groundwater Quantity Issues

Through a cooperative agreement with USGS, DOEE collects discrete and continuous groundwater elevation data from the groundwater monitoring network. The latest discrete data are presented with measurements collected from previous years in Appendix 5.4, Manual Water Level Measurements for Monitoring Wells.

Several deep wells on both sides of the Anacostia River continue to show the effects of the massive dewatering needed to construct the tunnels and drop shafts for the District's LTCP. These wells are screened in the Patuxent Aquifer. Overall groundwater levels are recovering, albeit at a slow rate, and the fluctuations of the curves on the hydrographs indicate when the effects of dewatering operations at various locations reached the wells. Data trends at monitoring well WE Cb 8 at Fort Dupont Park, wells WE Ca 35 and 36 at the U.S. National Arboretum, and well WW Cc 38 at the Capitol Hill Day School show that potentiometric surfaces are plateauing approximately five (5) feet below previous levels. The plateauing suggests that there is a long-term impact to the aquifer that will be recharge dependent.




USGS
USGS 385429076583601 WE Ca 35
Depth to water level, feet below land surface
Groundwater level above NAVD 1988, feet
118
120
122
124
126
128
130
132
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28
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22
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2004
2006
2008
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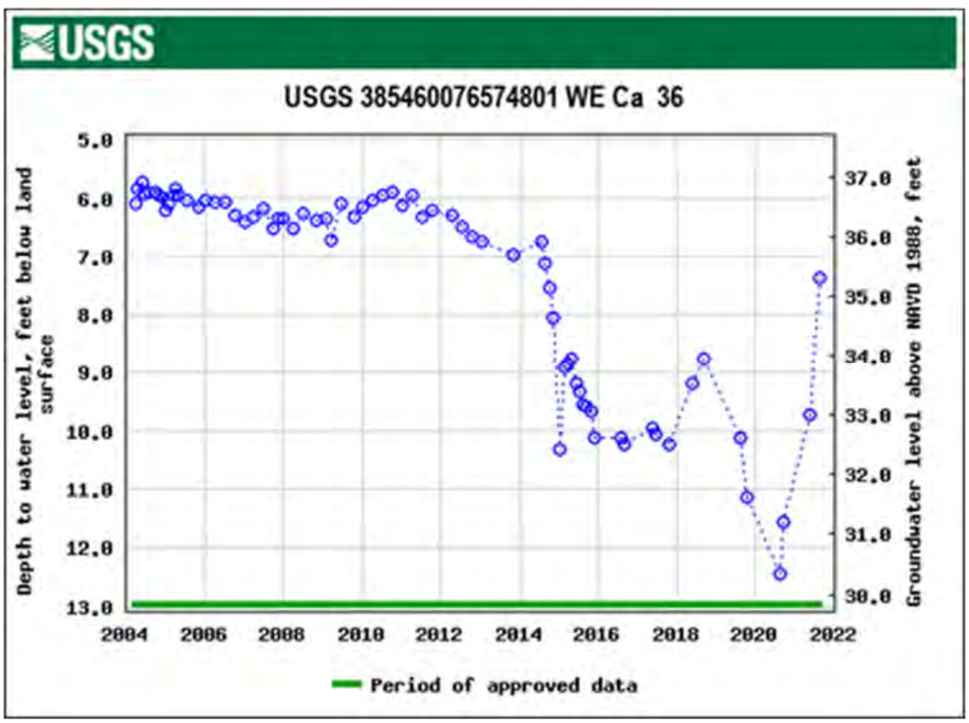
2022
Period of approved data


USGS
USGS 385460076574801 WE Ca 36
Depth to water level, feet below land surface
Groundwater level above NAVD 1988, feet
5.0
6.0
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9.0
10.0
11.0
12.0
13.0
37.0
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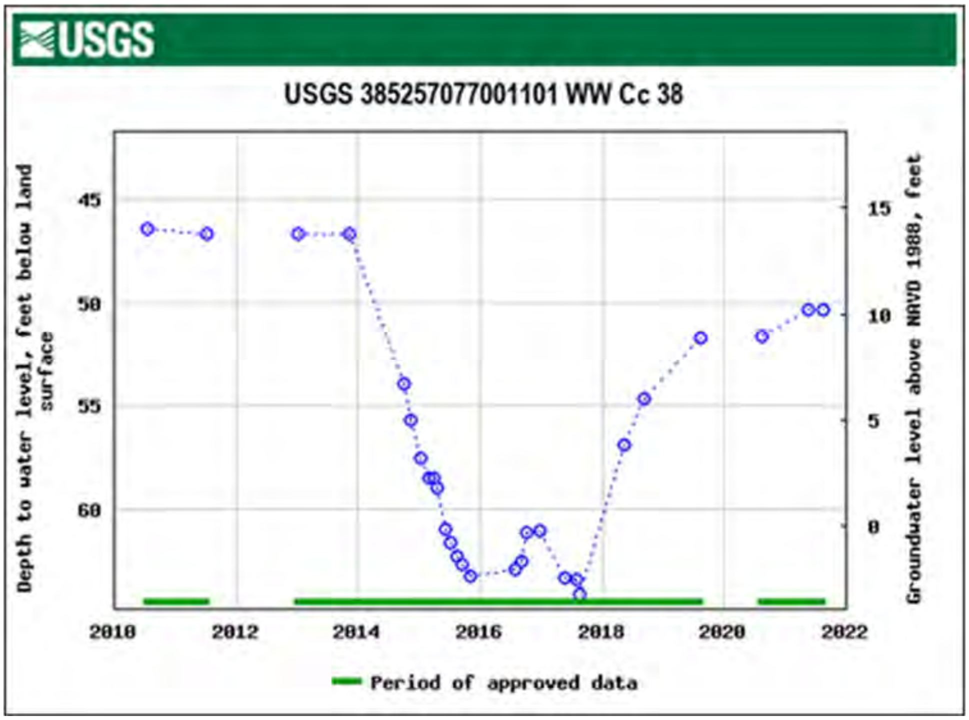


Figure 5.1 Hydrographs showing impacts of extensive dewatering at wells in the Patuxent Aquifer from 2014 to present.

Overview of Groundwater Contamination Sources

Appendix 5.5 summarizes contaminant sources to the shallow groundwater aquifer and identifies programs with regulatory oversight over groundwater pollution and the number of open cases with shallow groundwater contamination under each program. No new major sources have been identified since the last Integrated Report.

Overview of Programs Related to Groundwater Protection

WQD is charged with administration of the District's Water Pollution Control Act, which defines the District's waters as including both groundwater and surface water. In 1993, the District promulgated groundwater regulations. These regulations established numerical criteria and enforcement standards for 47 chemical constituents. Subsequently, the District also developed water quality monitoring regulations that set standards for groundwater monitoring supporting preventive as well as remedial activities. Well regulations were enacted in September 2016. DOEE is preparing a guidebook to supplement the well regulations. DOEE processes hundreds of well permit applications each year.

An updated list of DOEE groundwater-related programs or branches that can impact groundwater and their functions follows:

- Construction Grants Program: Pursuant to the federal Clean Water and Safe Drinking Water Acts and various appropriations acts, EPA funds the District for the construction and/or improvement of wastewater facilities, drinking water distribution and storage facilities, and other water related structures that will protect water quality. The projects identified for use of the funds meet a variety of needs, such as those related to the LTCP, the Municipal Sanitary Storm Sewer Monitoring Network, and the implementation of pollution control measures.

- Construction and Maintenance Branch: Performs compliance inspection and enforcement for sediment erosion controls and stormwater management at construction sites. The Branch also inspects permitted stormwater management devices to ensure that they are being properly maintained.

- Federal Facilities Program: Oversees the cleanup of Formerly Used Defense Sites (FUDS) and active defense facilities that are contaminated.

- Groundwater Protection Program: Coordinates and implements groundwater protection in the District including developing groundwater strategies, policies, and regulations to protect groundwater; engaging in groundwater quality planning and research; collecting, analyzing, storing, and sharing groundwater monitoring data; collaborating on regulatory oversight at contaminated sites; reviewing applications for withdrawal and injection of substances into groundwater for remediation or well maintenance; providing technical expertise on groundwater-related permits; and promoting groundwater protection with internal and external stakeholders engaged in groundwater- related activities.

- Hazardous Waste Management Program: Regulates hazardous waste from small and large quantity generators.

- Integrated Pest Management Program: Conducts public education for pesticide use.

- Illicit Discharge and NPDES Branch, Inspection and Enforcement Division: Conducts inspections and enforcement related to well construction, use, maintenance, and abandonment. The Branch also performs the same functions for pollutant spills, releases, or other discharge violations that lead to the degradation of groundwater resources.

- Nonpoint Source Program: Plans and implements BMPs to address nonpoint source pollution, restore aquatic habitat, and provide oversight of nonpoint source studies.

- Pesticide Certification and Enforcement Program: Processes registration of pesticide products for use in the District of Columbia, certifies applicators, and performs application inspections.

- Remediation and Site Response Program (RSRP): Investigates and remediates sites where historic contaminant releases have occurred. The program exercises state CERCLA-like authority and focuses on historic hazardous releases to soil and water.

- Total Maximum Daily Load (TMDL) Program: Develops point and nonpoint source load allocations to meet WQS in impaired waterbodies.

- Underground Storage Tank Management Program: Provides oversight for installation and removal of underground storage tanks as well as remediation activities for leaking tanks.

- Voluntary Cleanup Program (VCP): Oversees owner or developer initiated voluntary remediation of contaminated lands and buildings. The goal is to return actual or potentially contaminated properties to productive uses.

- The Regulatory Review Division: Processes well construction and abandonment permits in private and public space. The Branch also collects and maintains records of all permitted wells in the District.

Appendix 5.6 lists the various groundwater protection activities in the District, their implementation status, and the District agencies responsible for implementation.Appendix 5.6 Groundwater Protection Programs

Aquifer Vulnerability Assessment

The DC Water Resources Research Center (WRRC) assessed the District's groundwater vulnerability to contamination in 1992 in a report entitled *Urban Land Use Activities and The Ground Water: A Background Survey of the District of Columbia* (WRRC, 1992). The report mapped the probability of groundwater contamination and ranked areas accordingly. The District recognizes that this report is old and when funds become available, it will be revised. See Appendix 5.5 for an updated list of groundwater contamination sources primarily under EPA oversight.

Aquifer Mapping

Several years ago, the District, in conjunction with the USGS, has developed a steady-state, three-dimensional, groundwater flow model of the shallow aquifers in the Anacostia River watershed. The model contains layers to represent the aquifers in the District. However, the model did not distinguish between the Upper and Lower Patapsco Aquifers and the confining Arundel Clay, all of which overlay the Patuxent Aquifer on the eastern side of the Anacostia River. Therefore, flow values do not truly accurately represent groundwater flux in any of the individual units. This issue, highlighting the need for sound aquifer mapping in the area. The Upper and Lower Patapsco Aquifers also are vulnerable to urban activities as they appear to outcrop in mixed use areas, may be relatively thin, and underlie areas slated for urban development. Additional field work will help to resolve the boundaries of the relevant geologic units and ultimately, these shallow aquifers.

Comprehensive Data Management System

The USGS maintains and manages all data collected during joint District-USGS projects since 2002. This data is readily available on the USGS website (www.usgs.gov) and the date entered will continue to grow as funding for more projects becomes available. This data includes chemical, locational, and geological information. USGS includes monitoring well data in the regional groundwater database maintained for the District and other states. The data will be available in GIS formats soon. Monitoring well location data for boring/well locations for all

District-permitted wells in both private and public space can be found at http://atlasplus.dcgis.dc.gov/ in the Environmental Layer.

Groundwater/Surface Water Interaction

Recently, DOEE began exploring the use of groundwater age-dating techniques to look for indicators of possible surface water intrusion into aquifers. Powars (2016) noted paleochannel downcutting or erosion through the Arundel Clay, the Cretaceous-aged confining unit overlying the Patuxent Aquifer, in several parts of the District (Figure 5.2 and 5.3), suggesting that a stream, such as the Anacostia River, may be in direct hydraulic communication with the Patuxent Aquifer thereby causing pollutants in the surface water column to reach and negatively impact the groundwater resource.

When two waterbodies are in hydraulic communication, the differences in hydraulic pressure between them will dictate the direction of flow. With surface water/groundwater interactions, if the surface waterbody has a higher hydraulic pressure than the groundwater in the aquifer, the surface water will intrude into the aquifer and change the groundwater quality. In the District, the opposite usually occurs, and groundwater discharge provides the baseflow for perennial streams. Except for arid areas or where an aquifer is depleted, surface water intrusion into an aquifer is less desirable than groundwater discharge into a river since surface water contains pathogens and other micro-organisms that are not present in natural groundwater.

Surface water also has another distinctive signature that can be used for groundwater age-dating. It contains higher concentrations of certain dissolved manmade gases, such as chlorofluorocarbons, CFC-11, CFC-12, and CFC-113, (CFCs) and sulfur hexafluoride (SF_6) that have been widely distributed in the atmosphere for many years. However, as groundwater from a deep well in a confined aquifer typically takes many years to travel slowly through the subsurface, it is not expected to contain modern manmade gases unless it was exposed to the atmosphere or surface water since those gases were released. Therefore, the residence time or age of a groundwater sample from an aquifer can be determined based on the concentration of those gases in the groundwater after adjusting for certain assumptions.

The presence of CFCs in ground water indicates recharge after 1940 or mixing of older waters with post-1940 water (Busenberg et al., 1993). A relatively young or modern groundwater age typically indicates that there may be a problem with the well's structural integrity, or that the confining unit is leaking, thereby allowing the atmosphere or surface water to mix with the groundwater. Excessive pumping also can increase the groundwater flow rate through the aquifer so that relatively young groundwater can reach the monitoring well faster than normally would occur.

To investigate whether the Patuxent Aquifer is in direct hydraulic communication with the Anacostia River, a groundwater sample was collected for age-dating purposes from a monitoring well. The analytical suite covered CFCs, SF_6, dissolved carbon dioxide (CO_2), nitrogen (N_2), arsenic (Ar), and Hydrogen/Helium (H/He) isotopes. The monitoring well is located at the District's Aquatic Resources Education Center (AREC), and is 388 feet deep, screened in the Patuxent Aquifer, and located approximately 200 feet away from the River on its eastern bank (Appendix 5.2). The well's recharge area is approximately three miles to the northwest. The well also is across the river from the location of DC CSO 019, a large combined sewer outfall, where millions of gallons of groundwater were removed to construct the tunnel, shaft, and diversion structures as part of the LTCP. Dewatering started at CSO 019 in 2013, and the age-dating sample was collected in 2021.

Due to delays caused by the pandemic, DOEE only received results from the CFC and SF_6 analyses. According to preliminary interpretations, CFC data show that the water is older than the CFC method can reliably date while SF_6 data indicate that the groundwater is more than 55 years old. Results of the other laboratory analyses are expected to provide a more definitive age for the samples. Complete results and analyses will be available later in 2022.

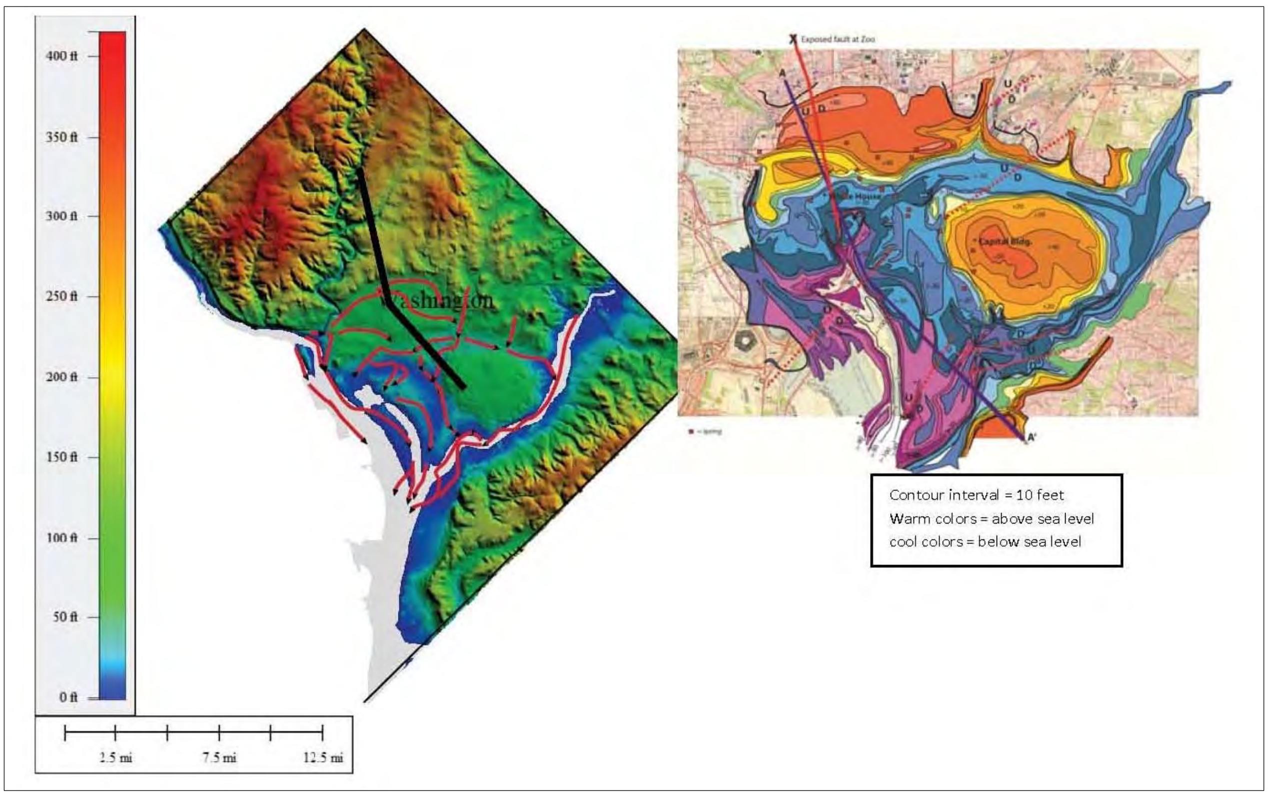


Figure 5.2 (Left) LiDAR elevation map of Washington D.C. and the paleochannels found in the current joint USGS-DOEE study (arrows pointing downriver). (Right) Structure contour map of base of Quaternary sediments showing numerous paleochannels and locations of proposed faults (red dashed lines) and documented fault (solid red line).

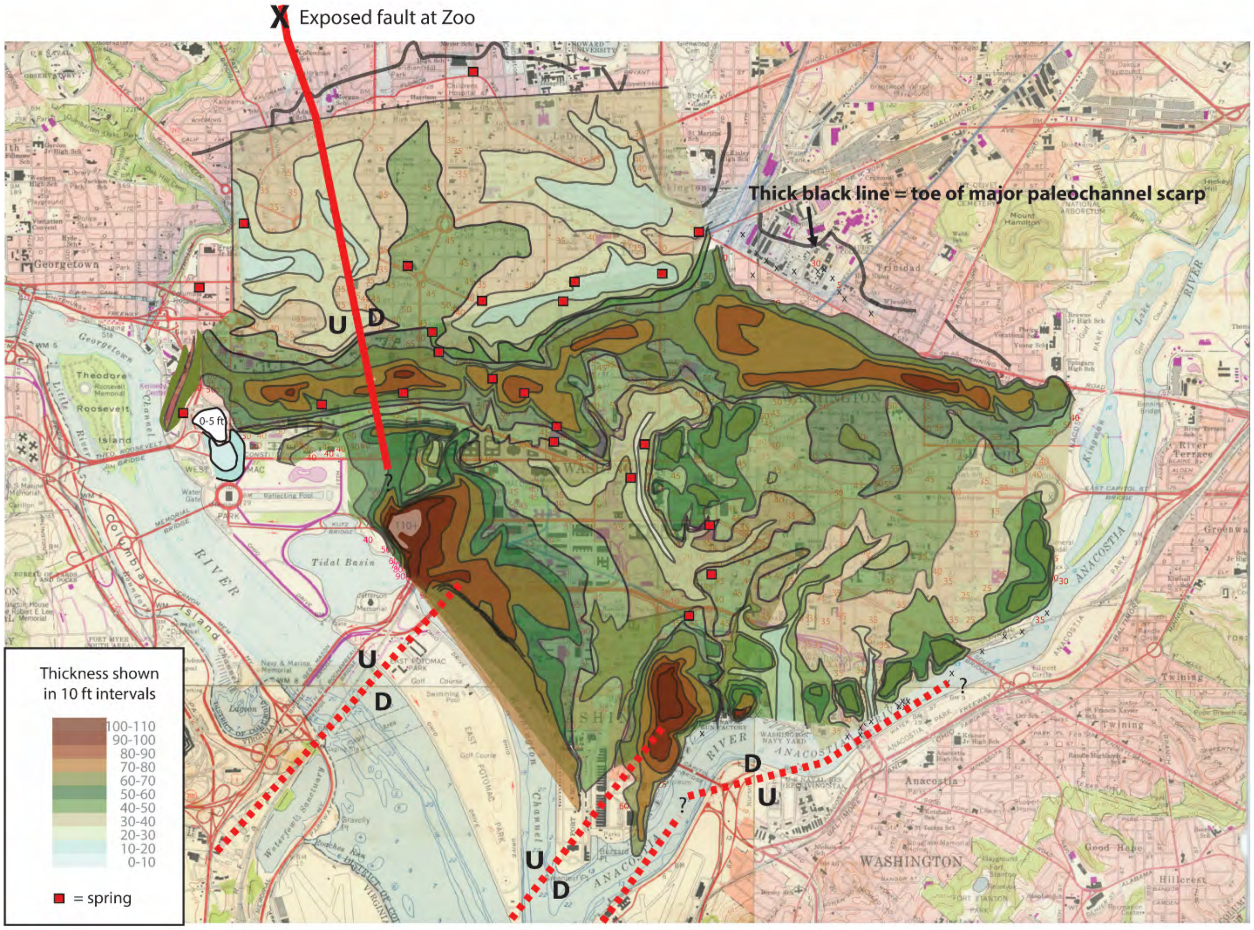


Figure 5.3 Map of the thickness of the Quaternary deposits beneath downtown Washington D.C. Thicker areas are sandy infillings of paleochannels and are groundwater reservoirs and conduits. The locations of most springs coincide with steep gradients where younger channel erosion cuts into older paleochannel deposits.

5.2 Groundwater Evaluation

Quantity of groundwater discharging to surface water and groundwater modeling activities is focused on quantification of the flow, distribution, recharge, and discharge to surface water, and quality is focused on water quality of groundwater resources within the District. The intent is to provide detailed and quantitative knowledge of the groundwater resources in the District to understand the contribution of groundwater to the surface water base flow, to address the seepage of nonpoint source pollution in the District, and to evaluate the groundwater resources as a potential water supply reserve. Some examples of the tools used to support the goals include: groundwater modeling, 3D visualization of the DC Aquifer Units, GIS layers of hydrogeologic unit distribution, analysis of all the existing subsurface information, construction of 3D geologic models, and the characterization and definition of the conceptual model of the multiple aquifer units present in the District. Information from the models is starting to be made available to other

DOEE programs. The second stage of the modeling activities is focused on the northeast and central part of the city and the Tidal Anacostia River Watershed.

The groundwater evaluation team continues to integrate the existing geological and hydrogeological information available to create a new map of the surface geology of the District. A map of the distribution of the hydrogeologic units of the District is in its final stage. The subsurface data processed for the construction of the groundwater models also will be used in specialized software to construct geologic cross sections. A 3D geological model is under preparation to define the distribution of the District's aquifers and their interactions. A collection of references and maps were used to create a detailed Hydrogeological Conceptual Model of the District that served as the basis to design the discretization of the detailed 3D flow Groundwater Model for the District. The model is running, and further calibration was completed for the review of dewatering permits currently conducting depressurization of the main Patuxent Formation Aquifer.

A detailed 3D flow and transport groundwater model for the Tidal Anacostia River has been constructed using a finer grid with data from the collection and analysis of all the available hydrogeological information, including deep, representative soil borings. Currently the flow model is calibrated and will be included in the Tidal Anacostia River Groundwater Modeling Report.

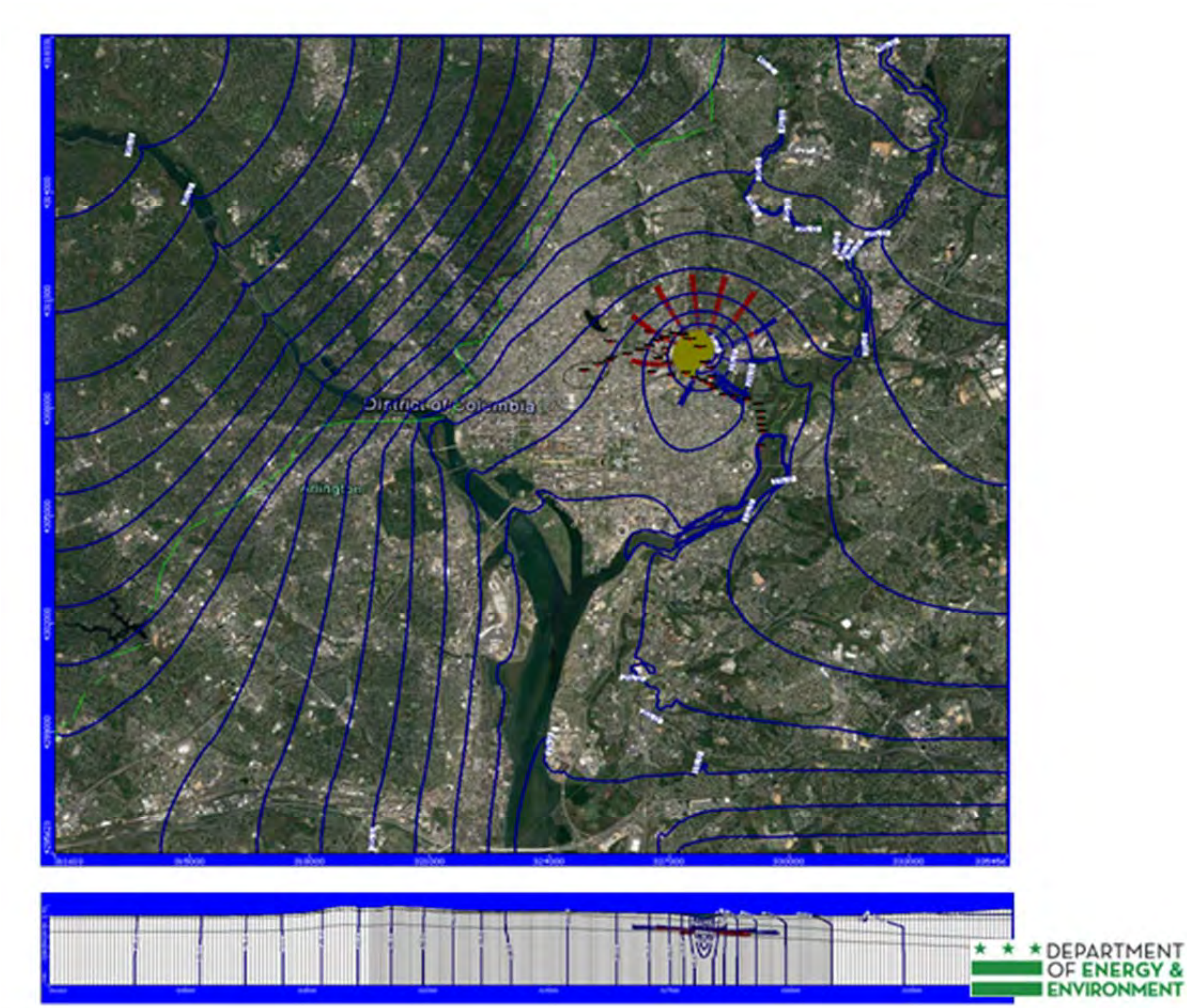


Figure 5.4 Figure 5.4 Groundwater Model and its Use for Dewatering Permits and Evaluation.

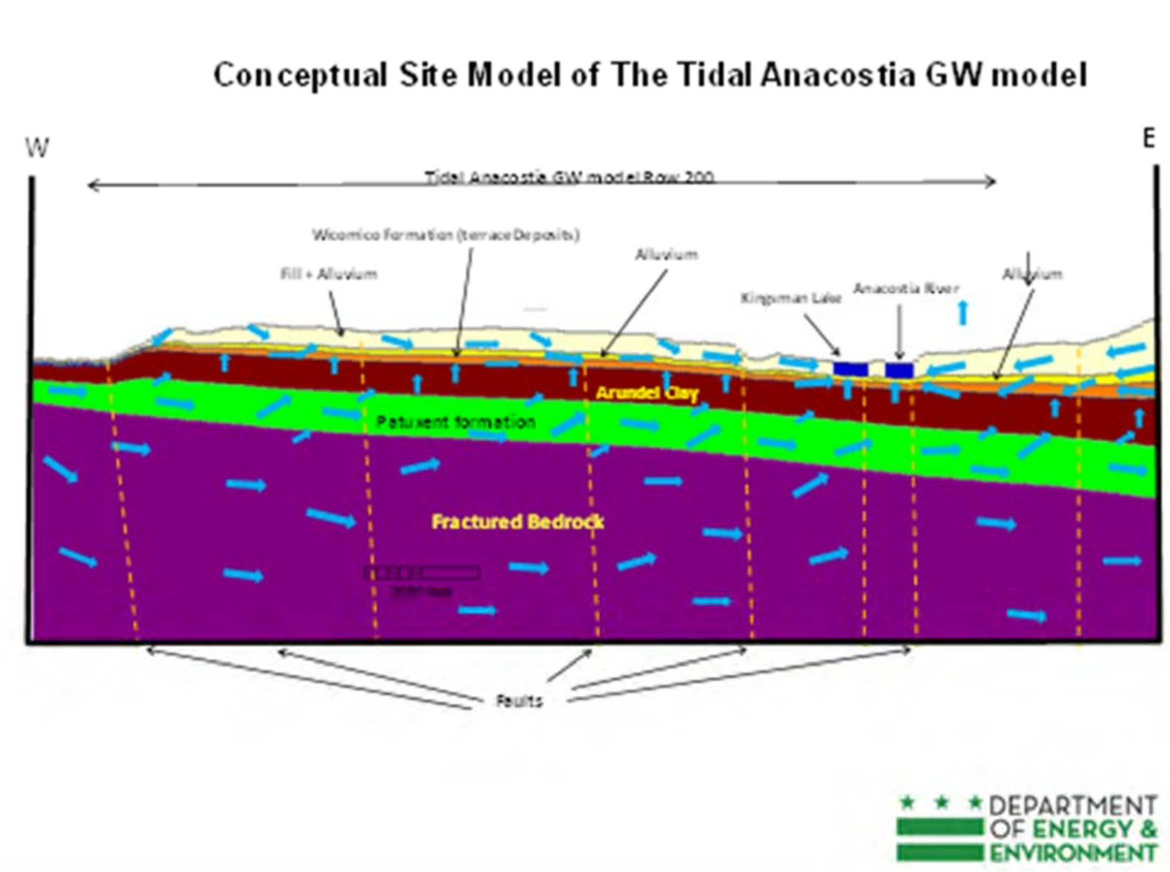


Figure 5.5 Tidal Anacostia River Groundwater Model Conceptual Site Model.

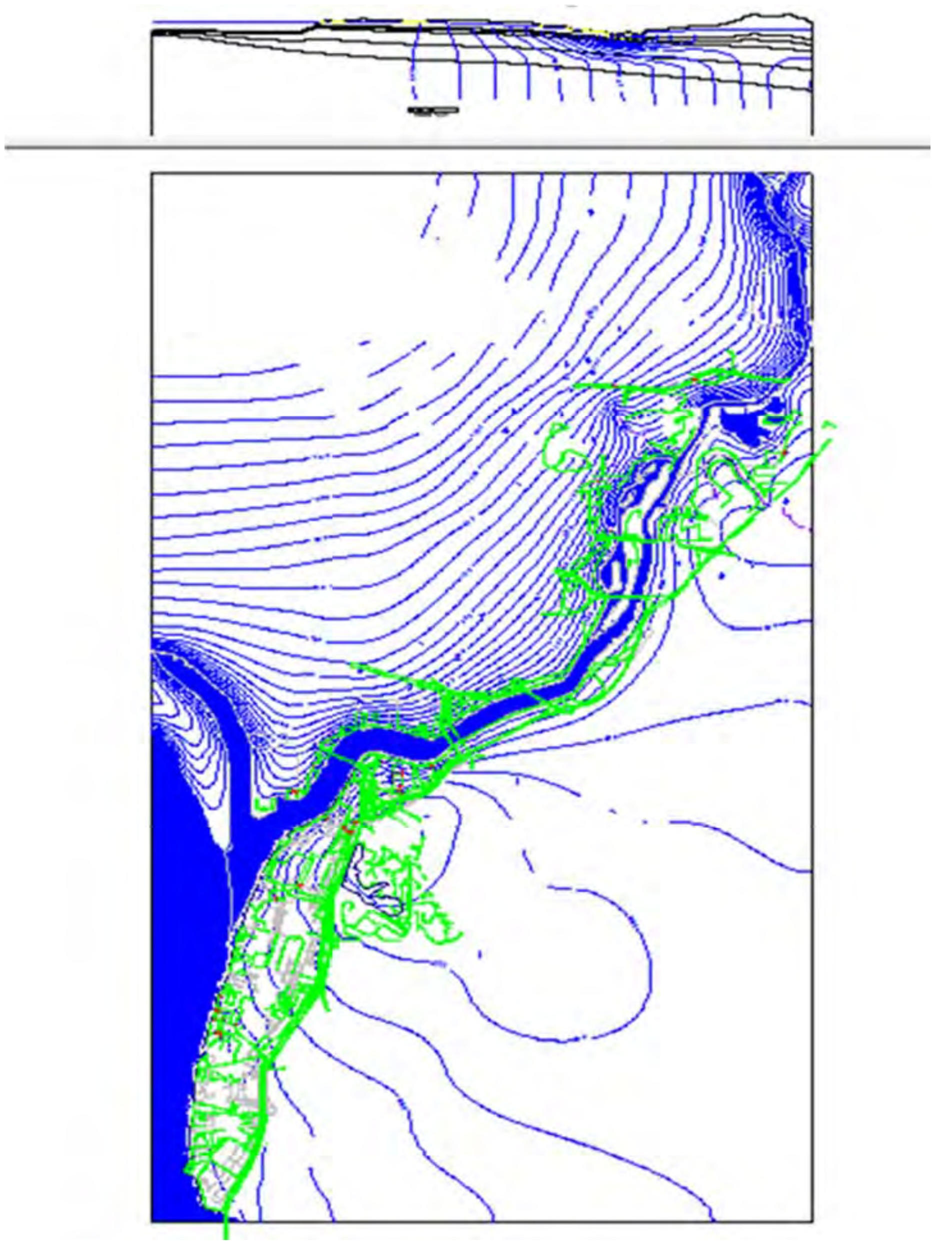
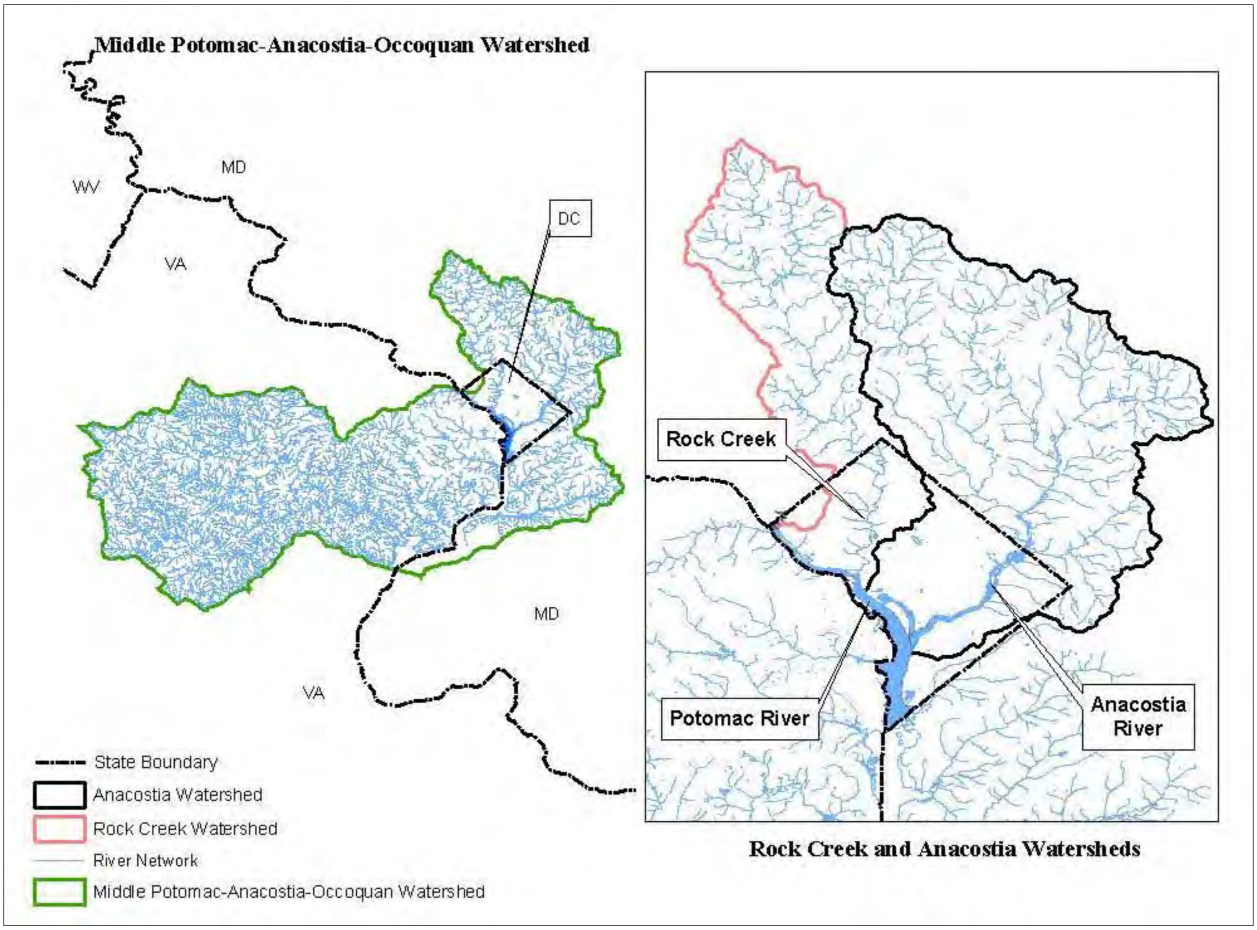


Figure 5.6 Tidal Anacostia River Model Results.

Appendix 2.1 Major District of Columbia Watersheds



Appendix 3.1 2022 Assessment and Listing Methodology, Use Support and Cause by Pollutant

District of Columbia Surface Water Assessment and Listing Methodology

Prepared for District Department of Energy and the Environment

February 10, 2022

DEPARTMENT OF ENERGY & ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA

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District of Columbia Surface Water Assessment and Listing Methodology

February 10, 2022

Prepared on behalf of DOEE by

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DISTRICT OF COLUMBIA SURFACE WATER ASSESSMENT AND LISTING METHODOLOGY

BACKGROUND AND PURPOSE

The Clean Water Act (CWA) requires states including the District of Columbia (the District) to report on the quality of the Nation's waters. Section 305(b) requires a comprehensive biennial water quality assessment report and Section 303(d) requires a list of waters for which effluent limitations are not sufficient to meet water quality standards (WQS). As part of WQS, waters are assigned designated uses, which define the types of uses that the waters are expected to support (i.e., primary contact recreation, secondary contact recreation etc.). Criteria and indicators for determining if these uses are attained are established for each designated use by waterbody or waterbody segment (e.g., bacteria concentrations to determine if a water is safe for swimming; chemical pollutant concentrations to determine if water can support aquatic life, etc.). Waters undergo a regular assessment process every other year to determine if criteria are met and individual designated uses are attained. Waters that meet the criteria for a given use "support" that designated use. Waters that do not meet the criteria for a given use do not support that designated use, and they placed on the 303(d) list of impaired waters. Results are then reported through the Integrated Report (IR).

This document summarizes the District's methods for assessing attainment of designated uses, listing and delisting waterbodies from the 303(d) list, and reporting results through the IR. The District implements these methods to make impairment determinations and listing/delisting decisions, and to prepare the IR.

INTRODUCTION

Beginning in 2004, EPA recommended a single water quality monitoring and assessment report (the IR) every even-numbered year that combines the Section 305(b) report and the Section 303(d) list of impaired waters (U.S. EPA, 2002). The District began to produce Section 305(b) reports in 1992 and Integrated Reports in 2004. The assessment of waterbody segments in the District is undertaken with a combination of physical/chemical water quality data, physical habitat data, bioassessment data, and observations related to narrative criteria[1].

EPA provides comprehensive information and guidance on WQS, water quality compliance, and water quality assessment and reporting. According to EPA,

> ***Water quality assessment*** *begins with water quality standards. After setting standards, states assess their waters to determine the degree to which these standards are being met. To do so, states may take biological, chemical, and physical measures of their waters; sample fish tissue and sediments; and evaluate land use data, predictive models, and surveys (U.S. EPA, 2021a).*

In general terms,

[1] Note that this assessment methodology establishes an approach for assessment that includes narrative criteria. Prior to the implementation of this assessment methodology, the District did not explicitly integrate narrative criteria into assessment.

Assessment of an individual waterbody (e.g., a stream segment) means analyzing biological, habitat, physical/chemical, and/or toxicity data and other information to determine designated use support.

Designated use is the use (or uses) specified for a waterbody whether it is attained or not

Impaired waters are those waterbodies that do not meet WQS.

A **303(d) list** is a compilation and categorization of impaired waterbodies.

Listing is the process of placing an impaired waterbody on the 303(d) list.

Delisting is the process of removing an impaired waterbody from the 303(d) list where the assessment methods and decision rules indicate that the condition causing the impairment is no longer present or not present.

EPA recognizes that states may use different methods to determine whether a waterbody meets WQS as long as they use “all existing and readily available information" in developing their 303(d) lists (40 C.F.R. §130.7(b) (5)). Accordingly, EPA’s regulations require states to submit a summary description of the methodology used to develop the list and to make a copy of the entire methodology available for review. These methodologies are essential for EPA’s review of state 303(d) lists. In general, an assessment methodology constitutes the “decision rules” that will be used when assessing water quality to determine the impairment status and categorization for a particular waterbody (U.S. EPA, 2003).

Regarding content (U.S. EPA, 2005), EPA suggests that:

The assessment methodology should be consistent with the state’s WQSs and include a description of the following as part of their section 303(d) list submissions:

- *What data and information were used to make attainment determinations (e.g., results from site-specific and probabilistic monitoring and other predictive tools).*
- *How the data and information were used to make attainment determinations and place surface water segments in the five reporting categories.*
- *Rationales for any decision to not use any existing and readily available data and information.*
- *Changes in the assessment methodology since the last reporting cycle.*

On balance, EPA guidance provides the District and other states with considerable latitude in designing and implementing methods to assess, list, and delist waterbodies.

DATA

The District considers all existing and readily available data to assess attainment of designated uses.

In general, the main sources of data used for assessment purposes are:

- District ambient water quality monitoring data
- Ambient monitoring data from other agencies (EPA, USGS, Corps of Engineers, DC Water, etc.)
- Monitoring data from other sources (universities, non-governmental organizations, citizen scientists, etc.)

- District phytoplankton, zooplankton, and benthic macroinvertebrate data
- District fish tissue data
- District physical habitat data
- District special monitoring studies
- Compliance monitoring
- Observations from District staff related to narrative criteria (see footnote #1 regarding the use of narrative criteria)

To maintain data quality, the District ensures that the data utilized for assessment is unbiased and based on scientifically sound data collection and analytical methods. The District's Water Quality Monitoring Regulations (District of Columbia Municipal Regulations [DCMR] Title 21, Chapter 19) were developed to ensure accurate, consistent, and reproducible water quality monitoring data for decision making purposes. These regulations include Quality Assurance Project Plan (QAPP) requirements and specific quality assurance procedures. Any data – including data collected by the District or data collected by others – that do not satisfy quality requirements are not utilized for assessment purposes.

The specific data utilized for assessment might vary from one reporting cycle to the next because of the implementation of special studies, the implementation of projects that include relevant data collection, or other reasons. The data used for assessment is documented in the individual IRs.

ASSESSMENT METHODOLOGY

During the assessment process, data are used to determine if a waterbody supports each of its designated uses. In general, data are compared against numeric water quality criteria, narrative criteria, and other biological and physical habitat indicators to determine if a given use is supported. If a waterbody meets criteria for a given use, that use is supported in that waterbody. If some or all criteria are not met, the waterbody does not support that designated use and it is considered impaired for that designated use.

Water Quality Standards

As described in the District's WQS (DCMR Title 21, Chapter 11), the categories of designated uses for the surface waters of the District of Columbia are:

- Class A - Primary contact recreation (swimmable)
- Class B - Secondary contact recreation and aesthetic enjoyment (wadeable)
- Class C - Protection and propagation of fish, shellfish, and wildlife (aquatic life)
- Class D - Protection of human health related to consumption of fish and shellfish (fish consumption)
- Class E - Navigation (ability to travel freely up and down the river using assorted watercraft and absent of man-made objects that impede free movement)

Assessment Criteria

The criteria used for assessment include numeric water quality criteria, narrative criteria, and other methods and protocols, including bioassessment, physical habitat assessment, and fish tissue analysis. The assessment criteria are summarized as follows:

- Class A: District WQS include narrative criteria and numeric criteria for E. coli, pH, and turbidity that apply to Class A waters for the protection of primary contact recreation.
- Class B: District WQS include narrative criteria and numeric criteria for pH and turbidity that apply to Class B waters for the protection of secondary contact recreation and aesthetic enjoyment.
- Class C: District WQS include narrative criteria, bioassessment, physical habitat assessment, and numeric criteria for dissolved oxygen, temperature, pH, turbidity, secchi depth, total dissolved gases, hydrogen sulfide, oil & grease, Chlorophyll-*a*, inorganic compounds (mostly metals but including ammonia), and organic chemicals that apply to Class C waters for the protection of aquatic life. Operationally, attainment of the Class C use is evaluated using bioassessment, physical habitat assessment, and numeric criteria for dissolved oxygen, temperature, pH, turbidity, secchi depth, and inorganic compounds.
- Class D: District WQS include narrative criteria and numeric criteria for inorganic compounds (mostly metals) and organic chemicals that apply to Class D waters for the protection of human health. Operationally, the presence or absence of a fish consumption advisory is also used to evaluate attainment of the Class D use.
- Class E: District WQS include narrative criteria that apply to Class E waters for the protection of navigation.

Assessment and Reporting Period

The District uses data from the most recent five-year period for assessment (the assessment period). Reporting (and 303(d) listing and delisting) is completed every other year in a biennial IR.

Assessment Units

Surface waters in the District are divided into waterbody segments (sometimes referred to as waterbodies or segments) that are used as assessment units (Table 1). Each waterbody segment is assessed independently. A waterbody segment that does not support a designated use is considered impaired for that use.

Table 1. Waterbody Segments Used as Assessment Units

Waterbody Name	Waterbody ID	Watershed
Anacostia DC Seg 01 (Lower Anacostia)	DCANA00E SEG1	Anacostia
Anacostia DC Seg 02 (Upper Anacostia)	DCANA00E SEG2	Anacostia
Fort Chaplin Run	DCTFC01R	Anacostia
Fort Davis Tributary	DCTFD01R	Anacostia
Fort Dupont	DCTDU01R	Anacostia
Fort Stanton Tributary	DCTFS01R	Anacostia
Hickey Run	DCTHR01R	Anacostia
Nash Run	DCTNA01R	Anacostia
Pope Branch (Hawes Run)	DCTPB01R	Anacostia
Texas Avenue Tributary	DCTTX27R	Anacostia

Table 1. Waterbody Segments Used as Assessment Units		
Waterbody Name	Waterbody ID	Watershed
Watts Branch DC Seg 01 (Lower Watts Branch)	DCTWB00R SEG1	Anacostia
Watts Branch DC Seg 02 (Upper Watts Branch)	DCTWB00R SEG2	Anacostia
Kingman Lake	DCAKL00L	Anacostia
Washington Ship Channel	DCPWC04E	Anacostia
Potomac DC Seg 01 (Lower Potomac)	DCPMS00E SEG1	Potomac
Potomac DC Seg 02 (Middle Potomac)	DCPMS00E SEG2	Potomac
Potomac DC Seg 03 (Upper Potomac)	DCPMS00E SEG3	Potomac
Battery Kemble Creek	DCTBK01R	Potomac
Dalecarlia Tributary	DCTDA01R	Potomac
Foundry Branch	DCTFB02R	Potomac
Oxon Run	DCTOR01R	Potomac
Chesapeake & Ohio Canal	DCTCO01L	Potomac
Tidal Basin	DCPTB01L	Potomac
Rock Creek DC Seg 01 (Lower Rock Creek)	DCRCR00R SEG1	Rock Creek
Rock Creek DC Seg 02 (Upper Rock Creek)	DCRCR00R SEG2	Rock Creek
Broad Branch	DCTBR01R	Rock Creek
Dumbarton Oaks	DCTDO01R	Rock Creek
Fenwick Branch	DCTFE01R	Rock Creek
Klingle Valley	DCTKV01R	Rock Creek
Luzon Branch	DCTLU01R	Rock Creek
Melvin Hazen Valley Branch	DCTMH01R	Rock Creek
Normanstone Creek	DCTNS01R	Rock Creek
Pinehurst Branch	DCTPI01R	Rock Creek
Piney Branch	DCTPY01R	Rock Creek
Portal Branch	DCTPO01R	Rock Creek
Soapstone Creek	DCTSO01R	Rock Creek

Water Quality Assessment

Water Quality Data

The District models its assessment methods for water quality data and its decision rules for designated use attainment on recommendations made by EPA in its Consolidated Assessment and Listing Methodology (CALM) guidance (U.S. EPA, 2002). Specific assessment methods for individual constituents and the associated numeric criteria for constituents as found in the District's WQS (Title 21, Chapter 11 - District of Columbia Municipal Regulations) are described in Table 2 for constituents that are routinely monitored. Waters that do not attain WQS and meet water quality criteria over the assessment period are considered to be impaired.

The assessment of conventional constituents generally follows the “ten percent” rule. That is, waters are impaired for 303(d) when:

> *More than 10% of the samples exceed the criterion* (U.S.EPA 2002)

Exceptions are the assessment of secchi depth and chlorophyll-*a* where seasonal segment averages instead of the ten percent rule are used for assessment. Consideration is given to criteria that are expressed to describe weekly, monthly, and seasonal averaging periods (e.g., weekly dissolved oxygen means, monthly *E. coli* geomeans seasonal segment average chlorophyll a measurements).

The assessment of toxic constituents (ammonia, metals, and organic chemicals) is based on the “no more than once every three years” rule (U.S. EPA, 1997). This rule is used for the assessment of Class C aquatic life and Class D human health/fish consumption uses. Under this rule, non-attainment occurs where there is more than one exceedance of the water quality criteria within a three-year period based on grab or composite samples. Operationally, a single sample exceedance of Class C aquatic life or Class D human health/fish consumption criteria within a three-year period is assessed as insufficient information to make a use support decision. Two or more exceedances of the same criteria within a three-year period using grab or composite samples indicates an impaired condition where the use is not supported.

Given that the District uses data from the most recent five-year period for biennial assessment and reporting, the three-year requirement of the no more than once every three years rule requires special treatment. This is accomplished by applying the one-in-three rule separately to data from years one through three, years two through four, and years three through five. Two or more exceedances within any of the three-year periods indicates an impaired condition where the use is not supported.

Table 2. Assessment Methods for Numeric Water Quality Criteria[1]

Constituent	DU Class	Water Quality Criterion (WQC)	Assessment Metric	Non-Attainment of Water Quality Criteria
E. coli 30-day Geomean[2] (126) (Maximum 30-day geometric mean for 5 samples)	A	126 MPN/100 mL	Calendar month geomeans	Any monthly geomean exceedance of the WQC.
E. coli SSV (410)	A	410 MPN/100mL	All individual samples	>10% of the individual samples exceed the WQC.
Dissolved oxygen in non-tidal waters: Instantaneous Minimum year-round in non-tidal waters.	C	5 mg/L	All individual samples	>10% of the individual samples exceed the WQC.

Table 2. Assessment Methods for Numeric Water Quality Criteria[1]				
Constituent	**DU Class**	**Water Quality Criterion (WQC)**	**Assessment Metric**	**Non-Attainment of Water Quality Criteria**
Dissolved oxygen in tidal waters Feb 1 through May 31: 7-day mean[3].	C	6 mg/L	7-day means. Use successive weeks beginning Feb 1, Feb 8, etc.	>10% of assessment metric (7-day means) exceed the WQC.
Dissolved oxygen in tidal waters Feb 1 through May 31: Instantaneous minimum.	C	5 mg/L	All individual samples	>10% of the individual samples (instantaneous minimums) exceed the WQC.
Dissolved oxygen in tidal waters June 1 through Jan 31: 30-day mean[4].	C	5.5 mg/L	Calendar month means	>10% of assessment metric (calendar month means) exceed the WQC.
Dissolved oxygen in tidal waters June 1 through Jan 31: 7-day mean.	C	4 mg/L	7-day means. Use successive weeks beginning June 1, June 8, etc.	>10% of assessment metric (7-day means) exceed the WQC.
Dissolved oxygen in tidal waters June 1 through Jan 31: Instantaneous minimum.	C	3.2 mg/L Use 4.3 mg/l if water temperature is ≥ 29 degrees C	All individual samples. Adjust criteria where temperature is ≥ 29 degrees C	>10% of the individual samples exceed the WQC.
Temperature: maximum	C	32.2 degrees C	All individual samples	>10% of the individual samples exceed the WQC.
Temperature: Maximum change above ambient.	C	2.8 degrees C	All individual samples	>10% of the individual samples exceed the WQC.
pH	A, B, C	> 6.0 and < 8.5	Individual samples	>10% of the individual samples exceed the WQC
Turbidity Increase above ambient	A, B, C	20 NTUs	Individual samples	>10% of the individual samples exceed the WQC
Secchi depth: seasonal segment average	C	0.8 m	Seasonal segment averages (April 1 through October 31)	Mean of seasonal segment averages exceeds the WQC

Table 2. Assessment Methods for Numeric Water Quality Criteria[1]				
Constituent	**DU Class**	**Water Quality Criterion (WQC)**	**Assessment Metric**	**Non-Attainment of Water Quality Criteria**
in tidal waters April 1 through October 31			over the five-year assessment period.	
Chlorophyll-*a*: Seasonal average in tidal waters from July 1 to September 30	C	25 ug/L	Seasonal segment averages (July 1 through Sept 30) over the five-year assessment period.	Mean of seasonal segment averages exceeds the WQC
Ammonia	C	Specific chronic (CCC) 4-day avg concentration depending upon pH, temperature and season	All calculated CCC Values. For CCC, the highest 4-day avg concentration within a calendar month shall not exceed 2.5 time the CCC.	Two or more exceedances of the CCC aquatic life criterion within a three-year period[5]
	C	Specific acute (CMC) 1-hour avg concentration depending upon pH and temperature	All calculated CMC values	Two or more exceedances of the CMC aquatic life criterion within a three-year period[5]
Metals	C	Specific chronic (CCC) 4-day avg concentration for each metal	All calculated CCC concentrations (converted to appropriate dissolved or total fraction as needed for comparison to criteria)	Two or more exceedances of a CCC aquatic life criterion within a three-year period[5]
	C	Specific acute (CMC) 1-hour avg concentration for each metal	All calculated CMC concentrations (converted to appropriate dissolved or total fraction as needed for comparison to criteria)	Two or more exceedances of a CMC aquatic life criterion within a three-year period[5]
	D	Specific 30-day human health concentration for each metal	Calendar month 30-day average concentrations	Two or more exceedances of a human health criterion within a three-year period[5]
Organics	C	Specific chronic (CCC) 4-day avg concentration for each metal	All calculated CCC concentrations (converted to appropriate dissolved or total fraction as needed for comparison to criteria)	Two or more exceedances of a CCC aquatic life criterion within a three-year period[5]

Table 2. Assessment Methods for Numeric Water Quality Criteria[1]				
Constituent	**DU Class**	**Water Quality Criterion (WQC)**	**Assessment Metric**	**Non-Attainment of Water Quality Criteria**
	C	Specific acute (CMC) 1-hour avg concentration for each metal	All calculated CMC concentrations (converted to appropriate dissolved or total fraction as needed for comparison to criteria)	Two or more exceedances of a CMC aquatic life criterion within a three-year period[5]
	D	Specific 30-day human health concentration for each metal	Calendar month 30-day average concentrations	Two or more exceedances of a human health criterion within a three-year period[5].

[1] Use support decisions for most constituents are based on a five-year statistical evaluation of ambient water quality data. Assessment occurs at the segment level. Consideration can be given to the recentness of data, extreme weather conditions, and other factors in assessing non-attainment.

[2] 30-day Geomean: The 30-day geometric mean is a calendar month geomean.

[3] 7-day mean: The 7-day mean refers to a calendar date mean for successive seven-day periods (e.g., January 1-7, January 8-14, etc.).

[4] The 30-day mean is a calendar month mean.

[5] Best professional judgment and potential use of the ten percent rule are considered if ten or more samples are collected in a three-year reporting period.

Treatment of Non-detect (ND) Values

ND values occur when a water quality sample is analyzed but the pollutant of interest is not found (not detected) above the detection limit. Detection limits represent the lowest concentrations of the constituent that can be measured reliably. For the purposes of water quality assessment, ND values are treated as follows:

- In cases where the number of samples is considered in the analysis (e.g., for parameters assessed using the “the ten percent rule”- see Table 2), NDs are used as part of the sample count if the detection limit is below the criterion, but they are not interpreted as exceedances.
- In cases where a calculated value is required for comparison with a criterion that is a measure of central tendency (e.g., a mean, geomean, or average) NDs are not included in the calculation.
- NDs are not replaced or substituted with estimates such as the Method Detection limit [MDL] or one-half the MDL in assessment.

Bioassessment

The District uses guidance provided in EPA’s Rapid Bioassessment Protocols (U.S. EPA, 1989) and the Maryland Biological Stream Survey (MD DNR, 2007) to collect and interpret benthic macroinvertebrate data to assess attainment of Class C aquatic life use. Benthic macroinvertebrate samples for most tributary waterbodies are collected approximately every other year and are sorted and quantified by a contract laboratory. Because the benthic macroinvertebrate communities differ between the Coastal Plain and the Piedmont physiographic province ecoregions, the waterbodies in each of these physiographic provinces are assessed differently. Table 3 provides a summary of the assessed waterbodies according to watershed and physiographic province.

Table 3. Waterbodies for Benthic Macroinvertebrate Assessment		
Assessed Waterbody Name	Watershed	Physiographic Province
Fort Chaplin Run	Anacostia	Coastal Plain
Fort Davis Tributary	Anacostia	Coastal Plain
Fort Dupont	Anacostia	Coastal Plain
Fort Stanton Tributary	Anacostia	Coastal Plain
Hickey Run	Anacostia	Coastal Plain
Nash Run	Anacostia	Coastal Plain
Pope Branch (Hawes Run)	Anacostia	Coastal Plain
Texas Avenue Tributary	Anacostia	Coastal Plain
Watts Branch DC Seg 01 (Lower Watts Branch)	Anacostia	Coastal Plain
Watts Branch DC Seg 02 (Upper Watts Branch)	Anacostia	Coastal Plain
Battery Kemble Creek	Potomac	Piedmont
Dalecarlia Tributary	Potomac	Piedmont
Foundry Branch	Potomac	Piedmont
Oxon Run	Potomac	Coastal Plain
Rock Creek DC Seg 01 (Lower Rock Creek)	Potomac	Piedmont
Rock Creek DC Seg 02 (Upper Rock Creek)	Rock Creek	Piedmont
Broad Branch	Rock Creek	Piedmont
Dumbarton Oaks	Rock Creek	Piedmont
Fenwick Branch	Rock Creek	Piedmont
Klingle Valley	Rock Creek	Piedmont
Luzon Branch	Rock Creek	Piedmont
Melvin Hazen Valley Branch	Rock Creek	Piedmont
Normanstone Creek	Rock Creek	Piedmont
Pinehurst Branch	Rock Creek	Piedmont
Piney Branch	Rock Creek	Piedmont
Portal Branch	Rock Creek	Piedmont
Soapstone Creek	Rock Creek	Piedmont

Seven benthic macroinvertebrate metrics are calculated for each waterbody. The different metrics for Coastal Plain and Piedmont sites are presented in Table 4.

Table 4. Benthic Macroinvertebrate Assessment Metrics for Coastal Plain and Piedmont Sites	
Coastal Plain Site Macroinvertebrate Metrics	Piedmont Site Macroinvertebrate Metrics
Total Taxa (Families)	Total Taxa (Families)
# of Ephemeroptera, Plecoptera, and Trichoptera (EPT) Taxa (Families)	# of EPT Taxa (Families)
% EPT Taxa (Families)	% EPT Taxa (Families)
% Gathers/Collectors (Individuals)	% Dominant (Individuals)
% Chironomidae (Individuals)	% Scrapers (Individuals)
# of Diptera (Families)	# of Trichoptera (Families)
Hilsenhoff Biotic Index (HBI)	Hilsenhoff Biotic Index (HBI)

Each individual assessment metric is scored either as a one (1), a three (3) or a five (5), with a score of one indicative of poor water quality, three indicative of fair water quality, and five indicative of good water quality. The scores for each individual metric are added together to get an overall score for that waterbody. Scoring ranges are the same for Coastal Plain and Piedmont sites. As shown in Table 5, the overall score for a waterbody is assigned a water quality rating of "good," 'fair" or "poor" based on the assessment. Use support determination is associated with the water quality rating, where a rating of good and fair is interpreted to be fully supporting, and poor as not supporting.

Table 5. Overall Water Quality Rating Based on Benthic Macroinvertebrate Assessment Metrics		
Overall Score	Water Quality Rating	Support Determination
>20	Good	Fully supporting
11-20	Fair	Fully supporting[1]
0-10	Poor	Not supporting
[1]The macroinvertebrate assessment metrics are based on the comparison of District data with data from relatively unimpaired regional reference sites in Maryland. Given the urban nature of the District, it was determined that 1) both the Good and Fair water quality ratings reflect fully supporting conditions in the District, and 2) the gradation between Good/Fair and Poor provides ample information to target restoration.		

A compendium of the individual benthic macroinvertebrate metrics that the District uses for this assessment is summarized in a separate document.

Physical Habitat Assessment

The District also uses guidance provided in EPA's Rapid Bioassessment Protocols (U.S.EPA, 1989) and the Maryland Biological Stream Survey (MD DNR, 2007) to collect and interpret physical habitat data to assess attainment of Class C aquatic life use. Physical habitat observations are made every other year in assessed waterbodies by District staff, with measurements and scores recorded in the field. Because the habitat conditions differ between the Coastal Plain and the Piedmont physiographic province ecoregions, the waterbodies in each of these physiographic provinces are assessed differently. Table 3 provides a summary of the assessed waterbodies according to watershed and physiographic province. As shown in Table 6, six physical habitat assessment metrics are calculated for Coastal Plain sites, and eight metrics are used for Piedmont sites.

Table 6. Physical Habitat Assessment Metrics for Coastal Plain and Piedmont Sites	
Coastal Plain Site Physical Habitat Assessment Metrics	Piedmont Site Physical Habitat Assessment Metrics
Remoteness	Remoteness
Shading	Shading
Epifaunal Substrate (EPI)	EPI
Instream habitat	Instream habitat
Numbers of Woody Debris and Root Wads ("Wood')	Numbers of Woody Debris and Root Wads ("Wood')
Bank Stability	Bank Stability
	Riffle Quality
	Embeddedness

Field observations for each metric are converted to scores from 0-100. The scores for each individual metric are averaged together to calculate an overall physical habitat index (PHI) score. Scoring ranges are the same for Coastal Plain and Piedmont sites. As shown in Table 7, the overall PHI score for a waterbody is assigned a water quality rating of "good," 'fair" or "poor" based on the assessment. In addition, use support determination is associated with the water quality rating, with a ratings of good and fair interpreted to be fully supporting, and poor as not supporting.

Table 7. Overall Water Quality Rating Based on Physical Habitat Assessment Metrics		
Overall PHI Score	Water Quality Rating	Support Determination
>72	Good	Fully supporting
>56 - 72	Fair	Fully supporting[1]
0-56	Poor	Not supporting

[1]The physical habitat assessment metrics are based on the comparison of District data with data from relatively unimpaired regional reference sites in Maryland. Given the urban nature of the District, it was determined that 1) both the Good and Fair water quality ratings reflect fully supporting conditions in the District, and 2) the gradation between Good/Fair and Poor provides ample information to target restoration.

A compendium of the individual physical habitat metrics that the District uses for this assessment is summarized in a separate document.

Fish Consumption Assessment

The District assesses the safety of eating the fish caught in District waters and issues fish consumption advisories based on periodic studies of fish tissue. These advisories serve as public health alerts that provide recommendations on safe fish consumption when chemical contaminants are detected in tissue from these fish. Fish consumption advisories are based on a comparison of the concentration of chemical contaminants in fish with U.S. EPA screening levels, which are concentrations above which fish tissue contaminants may pose risks to human consumers, and U.S. FDA levels to protect human health (see USFWS, 2014). The specific chemical contaminants that limit consumption of fish are typically included in fish consumption advisories.

As shown in Table 8, fish consumption advisories are used to assess attainment of Class D human health uses. If a fish consumption advisory is issued and is in effect for a given waterbody, that waterbody is considered to not support its Class D use and is considered impaired for Class D. If there is no fish consumption advisory in effect for a given waterbody, then that waterbody is considered to support its Class D use and is not considered impaired for Class D.

Table 8. Threshold for Fish Consumption Use Support Classification in a Waterbody	
Support of Designated Use	Threshold
Fully Supporting	No fish consumption advisories are in effect.
Not Supporting	A fish consumption advisory is in effect for the general population or a subpopulation that could be at risk for one or more fish species
Insufficient Information	Data to determine if the designated use is fully supporting or not supporting is unavailable.
Not Assessed	“Not assessed” is used when fish consumption is not a designated use for the waterbody.

Currently, the fish tissue data upon which the fish consumption advisories are based are collected at mainstem stations located on the Anacostia and Potomac rivers. However, because some individual waterbodies are not hydrologically connected to the mainstem Anacostia and/or Potomac rivers, the existing fish consumption advisories that are based on fish tissue data from the mainstems do not apply to these waters. For waters that are not hydrologically connected to the mainstems, only fish consumption advisories based on fish tissue collected in that waterbody would apply.

While fish consumption advisories are used to determine whether or not the Class D fish consumption use is attained, they do not provide any information on the presence or absence of chemical contaminants in the water column in any of the District’s waterbodies. Therefore, while the existence of a fish consumption advisory affects use attainment, the specific chemical contaminants associated with a fish consumption advisory are not placed in Category 3 or recorded as a cause of impairment in Category 4 or 5 in the 303(d) list of impaired waterbodies unless there is waterbody-specific water quality data that indicates the presence of impairment by that pollutant.

Narrative Criteria

In addition to numeric WQS, bioassessment, physical habitat, and fish consumption advisories, the District has narrative criteria that must also be assessed to determine attainment of designated uses. The narrative criteria are statements that describe the desired water quality goal, such as waters being "free from" pollutants like oil and scum, color and odor, and other substances that can harm people and fish. The principal narrative criteria in the District found in the District’s WQS Standards (DCMR Title 21, Chapter 11) that inform assessment are summarized in Table 9.

Table 9. Narrative Criteria	
1104.1	The surface waters of the District shall be free from substances in amounts or combinations that do any one of the following: (a) Settle to form objectionable deposits; (b) Float as debris, scum, oil, or other matter to create a nuisance; (c) Produce objectionable odor, color, taste, or turbidity; (d) Cause injury to, are toxic to, or produce

Table 9. Narrative Criteria	
	adverse physiological or behavioral changes in humans, plants, or animals; (e) Produce undesirable or nuisance aquatic life or result in the dominance of nuisance species; or (f) Impair the biological community that naturally occurs in the waters or depends upon the waters for its survival and propagation.
1104.3	Class A waters shall be free of discharges of untreated sewage, litter and unmarked submerged or partially submerged man-made structures that would constitute a hazard to the users of Class A waters.
1104.4	The aesthetic qualities of Class B waters shall be maintained. Construction, placement or mooring of facilities not primarily and directly water oriented is prohibited in, on, or over Class B waters unless: (a) The facility is for the general public benefit and service, and (b) Land based alternatives are not available.
1104.5	Class C streams shall be maintained to support aquatic life and shall not be placed in pipes.
1104.6	Within tidally influenced Class C waters, concentrations of chlorophyll a in free floating microscopic aquatic plants (algae) shall not exceed levels that result in ecologically undesirable consequences such as reduced water clarity, low dissolved oxygen, food supply imbalances, proliferation of species deemed potentially harmful to aquatic life or humans or aesthetically objectionable conditions or otherwise render tidal waters unsuitable for designated uses.
1104.7	Class E waters shall be free of unmarked submerged or partially submerged man-made objects that pose a hazard to users of these waters.

Narrative criteria provide blanket protection for all waters. They can also protect waterbodies from pollutants for which numeric criteria are difficult to specify. The attainment of narrative criteria is typically evaluated through field observation and best professional judgment of monitoring and assessment staff. Field observation performed by the monitoring and assessment staff provide Information on narrative criteria. Reported conditions that might affect support of a designated use related to narrative criteria (the “free from”) are documented over the assessment and reporting period and evaluated as a component of the Assessment Methodology. Use support based on the narrative criteria are assessed with the questions provided in Table 10.

Table 10. Assessment Using Narrative Criteria			
Name of affected waterbody/segment:			
What is the reported condition?			
What uses are potentially impacted by the reported condition?			
	Yes	No	Comment
Is the reported condition substantial? (e.g., Is it significant and sizeable?)			
Is the reported condition widespread? (e.g., Does it widely impact the waterbody/segment?)			
Are any visual impacts seen? (e.g., Nuisance conditions, biological impairment, etc.)			
Is the rereported condition persistent? (e.g., Has it occurred over a long period of time or continuously?)			
Has the reported condition been remediated?			
Does the available water quality data meet the numeric criteria and support the designated use?			
Does the reported condition preclude the waterbody from supporting a designated use?			
Use support Determination: Fully Supporting _________ Not Supporting _________			

Completion of Table 10 with a use support determination based on narrative criteria is conducted by the assessment staff based on experience, knowledge of the local waterbodies, and best professional judgment.

Decision Rules for Attaining Designated Uses

The District's Assessment Methodology is governed by a set of decision rules that are intended for use support determination, listing, and delisting. These rules incorporate EPA's Independent Application Policy on the use of multiple types of data to assess attainment (U.S. EPA, 2005).

For Purposes of WQS Attainment/Nonattainment Determinations

Policy of independent applicability says:

- When evaluating multiple types of data (e.g., biological, chemical) and any one type of data indicates an element of a WQS is not attained, the segment should most likely be identified as impaired.

- If there is reason to doubt the nonattainment finding, re-evaluate all of the data sets to resolve discrepancies. In some cases this may lead to modification of applicable WQS to account for site-specific information.

Policy of independent applicability does not say:

- Always assume that a single sample result showing impairment outweighs all other data showing attainment.
- Accept all differences in data finings at face value.

The decision rules for attaining designated uses in a waterbody are presented in Table 11.

Table 11. Decision Rules for Attaining Designated Uses

Use Class	Decision	Criterion	Decision Rule
A	Fully Supporting	E. coli	No exceedance of monthly geomean during assessment period. **AND**
			≤10% of samples exceed SSV **AND**
		Conventional pollutants (pH, turbidity)	≤10% of the individual samples exceed the WQC **AND**
		Narrative criteria	Water meets all relevant narrative criteria, including DC WQS §1104.3
	Not supporting	E. coli	Any exceedances of monthly geomean during assessment period **OR**
			>10% of samples exceed SSV **OR**
		Conventional pollutants (pH, turbidity)	>10% of the individual samples exceed the WQC **OR**
		Narrative criteria	Water does not meet all relevant narrative criteria, including DC WQS §1104.3
B	Fully Supporting	Conventional pollutants (pH, turbidity)	≤10% of the individual samples exceed the WQC **AND**

Table 11. Decision Rules for Attaining Designated Uses			
Use Class	Decision	Criterion	Decision Rule
		Narrative criteria	Water meets all relevant narrative criteria, including DC WQS §1104.4
	Not supporting	Conventional pollutants (pH, turbidity)	>10% of the individual samples exceed the WQC **OR**
		Narrative criteria	Water does not meet all relevant narrative criteria, including DC WQS §1104.3
C	Fully Supporting	Conventional pollutants (other than secchi depth and chlorophyll a)	≤10% of the individual samples exceed the WQC **AND**
		Secchi depth	Mean of seasonal segment averages does not exceed the WQC **AND**
		Chlorophyll a	Mean of seasonal segment averages does not exceed the WQC **AND**
		Ammonia	No more than one exceedance of the CCC WQC every three years. **AND**
			No more than one exceedance of the CMC WQC every three years **AND**
		Toxic pollutants (e.g., metals, organics, pesticides)	No more than one exceedance of the CCC every three years. **AND**
			No more than one exceedance of the CMC every three years. **AND**
		Bioassessment Protocol	Macroinvertebrate results indicate “Fair” to “Good” water quality **AND**
		Physical habitat assessment Protocol	Physical habitat assessment results indicate “Fair” to “Good” water quality

Table 11. Decision Rules for Attaining Designated Uses			
Use Class	Decision	Criterion	Decision Rule
			AND
		Narrative criteria	Water meets all relevant narrative criteria, including DC WQS §1104.6
C	Not Supporting	Conventional pollutants (e.g., pH, turbidity, DO, temperature, etc.)	>10% of the individual samples exceed the WQC **OR**
		Secchi depth	Mean of seasonal segment averages (n≤5) exceeds the WQC **OR**
		Chlorophyll a	Mean of seasonal segment averages (n≤5) exceeds the WQC **OR**
		Ammonia	More than one exceedance of the CCC WQC every three years. **OR**
			More than one exceedance of the CMC WQC every three years. **OR**
		Toxic pollutants (e.g., metals, organics, pesticides)	More than one exceedance of the CCC WQC every three years. **OR**
		Toxic pollutants (e.g., metals, organics, pesticides)	More than one exceedance of the CMC WQC every three years. **OR**
		Bioassessment Protocol	Macroinvertebrate results indicate “Poor” water quality **OR**
		Physical habitat assessment Protocol	Physical habitat assessment results indicate “Poor” water quality **OR**
		Narrative criteria	Water does not meet all relevant narrative criteria, including DC WQS §1104.6

Table 11. Decision Rules for Attaining Designated Uses			
Use Class	Decision	Criterion	Decision Rule
D	Fully Supporting	Fish consumption advisory	No applicable fish consumption advisory[1] is in effect **AND**
		Toxic pollutants (e.g., metals, organics, pesticides)	No more than one exceedance of the human health WQC every three years **AND**
		Narrative	Water meets all relevant narrative criteria
	Not Supporting	Fish consumption advisory	Applicable fish consumption advisory[1] is in effect. **OR**
		Toxic pollutants (e.g., metals, organics, pesticides)	More than one exceedance of the human health WQC every three years **OR**
		Narrative	Water does not meet all relevant narrative criteria
E	Fully Supporting	Narrative	Water meets all relevant narrative criteria, including DC WQS §1104.7
	Not Supporting	Narrative	Water does not meet all relevant narrative criteria, including DC WQS §1104.7

[1]Fish consumption advisories are applicable to certain waters based on where the fish tissue that informs the fish consumption advisory was collected. For waters that are hydrologically connected to mainstems, fish consumption advisories based on fish tissue collected in the mainstems are applicable. For waters that are not hydrologically connected to mainstems, only fish consumption advisories based on fish tissue collected from that waterbody are applicable.

303(d) LISTING AND DELISTING

This section describes the procedures and decision rules used in the District to list and delist waterbodies and pollutants from the 303(d) list.

Categorization

The District follows the five-category approach for classifying WQS attainment using the guidelines for category placement established by EPA (U.S. EPA, 2005). Following assessment, the District places every waterbody or waterbody/pollutant combination into one or more of the five IR categories based on the attainment of each designated use for that waterbody as shown in Table 12 below:

Table 12. Categorization of Waterbodies	
Category	Definition
1	All designated uses are supported, and no use is threatened.
2	Available data and/or information indicate that some but not all of the designated uses are supported.
3	There is insufficient available data and/or information to make a use support determination.
4	Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed for specified, acceptable reasons. Category 4 and its subcategories may include TMDLs that may or may not need to be revised for one reason or another, including court orders, consent decrees, and availability of new information. The subcategories are:
4a	A State developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination.
4b	Other required control measures are expected to result in the attainment of an applicable WQS in a reasonable period of time.
4c	The non-attainment of any applicable WQS for the segment is the result of pollution and is not caused by a pollutant[1].
5	Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.
[1]Section 502(19) of the Clean Water Act defines pollution as "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water." Section 1199 of the District's WQS defines "pollution" the same way, and defines "pollutant" as any "substance that may alter or interfere with the restoration or maintenance of the chemical, physical, radiological, or biological integrity of the waters of the District."	

Categorization allows the District to track progress as waterbodies incrementally or entirely attain WQS; demonstrate advancement in the development and implementation of TMDLs and other required control measures; and target monitoring for those waterbodies where additional data and information is needed to assess WQS attainment. In general,

- Waterbodies are placed in Category 1 when the assessment process indicates that all WQS are attained, and all designated uses are supported.
- Waterbodies are placed in Category 2 when the assessment process indicates that one or more designated use is supported but the data and information available is insufficient to determine that other designated uses are supported.
- Waterbodies are placed in Category 3 where insufficient data and information are available to make a use support determination. This insufficiency can be due to not having enough data or

to not having the right quality of data to rigorously evaluate a waterbody's attainment status. Pollutants are not identified for this category because the impairment is uncertain.

- Waterbodies are placed in Category 4 when the impairment is recognized and either a TMDL or another control program aimed at attainment of WQS is in place, or where non-attainment is not causally linked to a pollutant.
- Waterbodies are placed in Category 5 when the impairment is recognized and a TMDL is needed. Category 5 is governed by 40 CFR 130.7(b)(1) where it is stated that:

> *Segments must be placed in Category 5 when, based on existing and readily available data and/or information, technology-based effluent limitations required by the Act, more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed.*

Category 5 listings contain a priority ranking for TMDLs (low, medium, high) and a targeted date for TMDL development.

303(d) Listing

The 303(d) list is developed following assessment for water quality criteria, macroinvertebrate assemblages, physical habitat, fish consumption advisories, and narrative criteria described above. The term "303(d) list" is short for the list of impaired and threatened waters (e.g., stream/river segments) that have been identified and reported to EPA (U.S. EPA, 2021b). "Listing" is the process of placing an impaired waterbody on the 303(d) list. Waters on the 303(d) list require development of a TMDL. This distinguishes them from Category 4a waters where TMDLs have already been developed. Listing is undertaken every other year using data from the most recent five-year assessment period so that information on the status of District waterbodies and use support is current.

The listing process addresses key questions on waterbody status, including:

- Are the existing listings from the previous reporting cycle still valid?
- Are there any new impairment listings based on assessment of available data in the current reporting cycle and/or changes in WQS that affect current listings since the last reporting cycle?
- Are the pollutant and non-pollutant causes of impairment known and clearly documented?
- Are the waterbodies categorized correctly?

Causes of Impairment

Using the decision rules for attaining designated uses in Table 12, the District identifies and records the cause for each designated use impairment in Categories 4 and 5 of the IR. The identification of cause ("Impairment Parameter" in Category 4C) is based on the type of data and metrics used to make the assessment. In most cases, the cause is a specific pollutant (e.g., *E. coli,* arsenic). In other cases, a non-pollutant cause is responsible for the impairment. In these circumstances, where impairment is not attributed to a specific pollutant, it is sufficient for the purposes of 305(b) reporting to list the non-pollutant observed impairment deficiency as the cause. Consistent with guidance provided for EPA's ATTAINS program (U.S. EPA, 2015), the District uses physical habitat assessment and benthic macroinvertebrate assessment to denote non-pollutant causes when the results of the protocols for these criteria indicate that the use is not supported, and a specific pollutant has not been identified. Similarly, the District uses other impairment parameters such as flow alteration and habitat alteration to denote non-pollutant causes when documented as part of habitat or benthic assessment, or where documentation that narrative criteria are not supported is available.

As shown in Table 13, the methods for identifying the causes of impairment are specific to the criteria type exceeded or transgressed.

Table 13. Methods for Identifying Cause of Impairment

Designated use class	Criterion Type	Method for Identifying Cause
Class A Primary contact recreation	Numeric criteria for individual pollutants (e.g., E. coli, pH, turbidity)	Cause is the specific pollutant or pollutants that exceed numeric criteria.
	Narrative criteria	Cause of impairment is identified by best professional judgment of assessment staff.
Class B Secondary contact recreation and aesthetic uses	Numeric criteria for individual pollutants (e.g., pH, turbidity)	Cause is the specific pollutant or pollutants that exceed numeric criteria
	Narrative criteria	Cause of impairment is identified by best professional judgment of assessment staff.
Class C Aquatic Life	Numeric criteria (e.g., pH, turbidity, DO, trace metals, organic compounds, etc.)	Cause is the specific pollutant or pollutants that exceed numeric criteria.
	Benthic macroinvertebrate and physical habitat assessment protocols	Cause is identified through assessment protocols or a stressor analysis. The cause may be a pollutant or a non-pollutant.
	Narrative criteria	Cause of impairment is identified by best professional judgment of assessment staff (e.g., flow alteration).
Class D Fish consumption	Numeric criteria for individual pollutants (e.g., trace metals and organic compounds)	Cause is the specific pollutant or pollutants that exceed numeric criteria.
	Existence and applicability of a fish consumption advisory	Cause is identified by best professional judgment of assessment staff.
Class E Navigation	Narrative criteria	Cause of impairment is due to unmarked submerged or partially submerged man-made objects that pose a hazard to users of these waters as determined by best professional judgment of assessment staff

In general, the identification of the pollutant or pollutants causing impairment is straightforward when a specific numeric criterion for a given designated use is exceeded. However, the identification of cause is less straightforward when narrative criteria are not met, or when other indicators of impairment (e.g., biological or habitat assessment protocols) are exceeded. In these cases, further investigation of the specific pollutant causes of impairment with a stressor analysis may be warranted to identify specific pollutants that need to be remediated or reduced to allow the waterbody to attain a designated use or uses. The District is currently developing a full stressor analysis procedure that will be used to identify specific causes of impairment for aquatic life use impairments identified through macroinvertebrate or physical habitat assessment protocols and for other situations where specific causes are not identified through the assessment process.

303(d) Delisting

Delisting is the process of removing a waterbody from the existing 303(d) list. This process is used when evidence, in the form of available data and information, indicates that the waterbody is not impaired or no longer impaired for a given designated use.

Delisting a waterbody has implications for other water quality programs, including the TMDL program. If assessment shows that waterbodies listed in Category 4a and Category 5 are no longer impaired, the TMDLs for specific pollutants may no longer be needed and can be withdrawn where appropriate. Note that withdrawing TMDLs requires EPA approval.

Authority for Delisting

States (including the District) are legally allowed to delist waterbodies or pollutants from their 303(d) list if the original listings are no longer supported. Specifically, 40 CFR §130.7 (b)(6)(iv)) states that

> *Upon request by the Regional Administrator, each State must demonstrate good cause for not including a water or waters on the list. Good cause includes, but is not limited to, more recent or accurate data; more sophisticated water quality modeling; flaws in the original analysis that led to the water being listed in the categories in § 130.7(b)(5); or changes in conditions, e.g., new control equipment, or elimination of discharges.*

EPA's *Assessment Guidance on the 2002 Integrated Report* (U.S. EPA 2001) further clarifies this and states that:

> *The existing regulation requires states, territories, and authorized tribes, at the request of the Regional Administrator, to demonstrate good cause for not including waterbodies on the 303(d) list that were included on previous 303(d) lists (pursuant to 40 CFR 130.7(b)(6)(iv))…Where a waterbody was previously listed based on certain data or information, and the state removes the waterbody without developing or obtaining any new information, EPA will carefully evaluate the state's or territory's re-evaluation of the available information, and will not approve such approvals unless the state's or territory's submission describes why it is appropriate under the current regulations to remove each affected waterbody.*

This statement emphasizes the fact that waterbodies and specific pollutants can be removed from the 303(d) list through analysis of "more recent and accurate data" or if there are "flaws in the original analysis that led to the waterbody being listed."

The District recognizes that it has authority to delist waterbody/pollutant combinations where justified and documented.

Reasons for Delisting and WQS Attainment

Guidance on the ATTAINS online system (the Assessment, Total Maximum Daily Load Tracking and Implementation System) for accessing information about the conditions in the Nation's surface waters

(U.S. EPA, 2013) explains acceptable reasons for delisting in the context of waterbody changes from the prior reporting cycle.

> ***Reasons for delisting*** *waters include: TMDL approved or established by EPA (Category 4a), other pollution control requirements (Category 4b), Not caused by a pollutant (Category 4c).*
>
> ***Reasons for WQS attainment*** *include:*
>
> - *Applicable WQS attained, original basis for listing was incorrect*
> - *Applicable WQS attained due to restoration activities*
> - *Applicable WQS attained due to change in WQS*
> - *Applicable WQS attained according to new assessment method*
> - *Applicable WQS attained threatened water no longer threatened*
> - *Applicable WQS attained, reason for recovery unspecified*

Removal of Specific Pollutant Causes

The District has a process to remove a pollutant that has been identified as a cause of impairment for a given waterbody when new evidence indicates that the pollutant is not causing impairment for a given designated use in a waterbody. In this case, the process is used to remove an individual pollutant that is reported as a cause of impairment in various tables in the IR (including in the Appendix 3.1 2020 Use Support and Cause by Pollutant table and in the Appendix 3.4 District of Columbia 303(d) List table in the “Pollutant(s) or Pollutant Categories Causing Impairment” column). This is important because it allows the District to better characterize the actual causes of impairment as better information is obtained. It also allows the waterbody to remain on the 303(d) list if other pollutant or non-pollutant causes continue to impair a designated use.

Weight of Evidence Approach

The District uses a “weight of evidence” approach to identify waterbodies for delisting or pollutants for removal as causes of impairment. A weight of evidence approach does not rely on just one piece of data to determine if a waterbody should be delisted or pollutant should be removed as a cause of impairment. Instead, it relies on evaluating multiple pieces of evidence simultaneously to come to a conclusion or recommendation. This approach provides the assessment staff with the flexibility to evaluate the evidence and assign more or less weight to individual pieces of evidence, as appropriate, to come to conclusions about whether waterbodies should be delisted or impairment causes should be removed.

The weight of evidence approach is conducted according to the following steps:

- Identify all available relevant evidence
- Review/analyze evidence against WQS or other decision-making criteria
- Make recommendations for delisting or pollutant removal based on the evidence
- Develop a written “good cause justification” rationale for delisting that includes a summary of the evidence and a recommendation

The types of evidence considered during the weight of evidence approach are summarized in Table 14.

Table 14. Types of Data used in the Weight of Evidence Approach	
Data Type	**Discussion**
Water Quality Data	Water quality data is used to determine whether or not recent data continue to support the earlier listing and conclusion that a waterbody is impaired and/or impaired by a specific pollutant. This type of analysis aligns with 40 CFR §130.7 (b)(6)(iv)) statement that evaluation of "more recent or accurate data" is one way to delist a waterbody or from the 303(d) list. A similar understanding is used to remove individual pollutants as causes of impairment.
Non-Water Quality Data	Non-water quality data is used to determine whether or not recent findings support previous listings. For example, recent macroinvertebrate or physical habitat assessments or the presence or absence of a fish consumption advisory can be used to determine if existing listings remain applicable.
Historical Data	Examination of the original water quality data or non-water quality data that identified impairment and led specific pollutants to be listed as causing designated use impairment is used to identify data gaps, unsubstantiated assumptions, inconsistencies, or other errors in the original listings. This type of analysis provides evidence to support findings of "flaws in the original analysis that led to the water being listed," one of the "good cause justifications" endorsed in 40 CFR to support delisting a 303(d) listing or removal of individual pollutants as causes of impairment.
IRs	Examination of IRs is used to review what was understood about designated use support and pollutant causes across the decades. The IRs summarize data, describe water quality assessment, and document use support decisions.
TMDL Data	Examination of the water quality and non-water quality data referenced in TMDL documents is used to review the causes of impairment, the historical data used to assess impairment, and the historical data used to develop TMDL models and model inputs. In addition, review of the applicable WQS at the time of TMDL development can link impairment to specific violations of those WQS. In some cases, TMDL write-ups provide more information on the impairment than what is provided in the IR.

A weight of evidence analysis is developed for each delisting recommendation and/or recommendation for removal of a pollutant as a cause of impairment. This analysis uses the evidence available in the data categories described above in the aggregate to draw conclusions regarding whether entire waterbodies and/or individual pollutants merit delisting/removal. Unlike with listing pollutants as causing an impairment in the first place, there is often no immediate or simple solution available to determine whether a waterbody should be delisted and/or a pollutant should be removed. Rather, the overall accumulation of evidence backed up by best professional judgment leads to the decision to delist/remove a pollutant.

While "delisting" can only be applied to Category 5, this weight of evidence process can also be used to remove pollutant causes and/or move waterbodies to different categories based on the evidence. Waterbodies recommended for delisting from Category 5 will be documented in the IR and will be supported by a discussion or summary of the results of the weight of evidence analysis and a good cause justification (see next subsection). Similarly, pollutants removed as causes of impairment and waterbodies that change categories will be similarly documented in the IR, along with good cause justification for the changes.

Good Cause Justification

Good cause justification is developed to support weight of evidence analysis that demonstrates the merit for delisting a waterbody or removing a pollutant as a cause of impairment. The good cause justification summarizes the data and the decisions leading to the recommendations to delist and/or remove a pollutant cause and includes one or more of the "good cause justifications" outlined in 40 CFR §130.7 (b)(6)(iv)) to support the regulatory requirements of the delisting recommendation. Good cause includes, but is not limited to, more recent or accurate data; more sophisticated water quality modeling; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5); or changes in conditions, e.g., new control equipment, or elimination of discharges.

REPORTING

The assessment results for all waterbodies are reported in the biennial Integrated Report. Tabular summaries are utilized to list waterbodies placed in Categories 1 and 2 with basic information on waterbody name, waterbody ID, the designated uses supported, and, in the case of Category 2, the designated use where the data and information available is insufficient to determine use support. Tabular summaries are also utilized for Category 3, 4, and 5 listings that include the 303(d) listing year, waterbody name, waterbody ID, and pollutants or non-pollutants causing impairment (Categories 4 and 5). Other information such as the TMDL establishment date, priority rankings, and targeted TMDL development date are included where needed on a category-by-category basis. A "good cause" justification rationale is provided for each delisting and/or removal of a pollutant as a cause of impairment.

The District follows EPA guidance on reporting outlined in *Information Concerning 2022 Clean Water Act Section 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions* (EPA, 2021c). The information reported on the District's assessment methodology and assessment results are prepared in a format that allows uploading to ATTAINS. The specific information uploaded to ATTAINS is:

Assessment Methodology (ATTAINS)

- Description of data and information used to make attainment determinations (40 CFR 130.7(b)(6)(ii))
- Description of how data and information was used to make attainment determinations (40 CFR 130.7(b)(6)(i))
- A rationale for any decision to not use any existing and readily available data and information (40 CFR 130.7(b)(6)(iii))
- Description of changes in assessment methodology since the last reporting cycle

Assessment Results (ATTAINS)

- Five-part categorization of waters
- Description of water quality of all waters of the US and the extent to which the quality of waters provides for protection and propagation of a balanced population of shellfish, fish, and wildlife and allows recreational activities in and on the water (e.g., results of probability-based/statistical surveys) (40 CFR 130.8 (b)(1))
- Changes from previous CWA 303(d) list (e.g., the waterbodies/pollutants that have been added and the waterbodies/pollutants that have been delisted and the reason for their delisting)
- A list of water quality-limited waters (impaired and threatened) still requiring a TMDL, pollutants causing the impairment, priority ranking for TMDL development (including waters targeted for TMDL development within the next two years) (40 CFR 130.7(b))
- Status of TMDL development
- Summaries of designated use support
- Any other reasonable information requested by the EPA Regional Administrator (40 CFR 130.7(b)(6)(iv))

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2022
Use Support and Cause by Pollutant

Waterbody Name	Waterbody ID	Class A Swimming Use	Class B Secondary Contact Recreation Use	Class C Aquatic Life Use	Class D Fish Consumption Use	Class E Navigation Use
Kingman Lake	DCAKL00L	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: BOD DO TSS Oil & Grease	Not Supporting Causes: Fish Consumption Advisory PCBs Arsenic	Fully Supporting
Anacostia DC (Lower) Segment 01	DCANA00E SEG1	Not Supporting Causes: *E. coli* TSS	Not Supporting Causes: Trash TSS	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory PAH2 Total PCBs DDD Heptachlor Epoxide Total PCBs Arsenic	Fully Supporting
Anacostia DC (Upper) Segment 02	DCANA00E SEG2	Not Supporting Causes: *E. coli* TSS	Not Supporting Causes: Trash TSS	Not Supporting Causes: DO BOD TSS Oil & Grease Phosphorus (Total) Nitrogen (Total) Chlorophyll a DDD DDT	Not Supporting Causes: Fish Consumption Advisory Total PCBs Heptachlor Epoxide Dieldrin DDT DDD Arsenic	Fully Supporting

Waterbody Name	Waterbody ID	Class A Swimming Use	Class B Secondary Contact Recreation Use	Class C Aquatic Life Use	Class D Fish Consumption Use	Class E Navigation Use
Potomac DC (Lower) Segment 01	DCPMS00E SEG1	Not Supporting Causes: *E. coli* TSS	Fully Supporting	Fully Supporting	Not Supporting Cause: Fish Consumption Advisory PCBs Arsenic	Fully Supporting
Potomac DC (Middle) Segment 02	DCPMS00E SEG2	Not Supporting Causes: *E. coli* TSS	Not Supporting Causes: TSS	Not Supporting Causes: Chlorophyll a TSS	Not Supporting Cause: Fish Consumption Advisory Total PCBs Arsenic Dieldrin	Fully Supporting
Potomac DC (Upper) Segment 03	DCPMS00E SEG3	Not Supporting Causes: *E. coli* TSS	Not Supporting Causes: TSS	Not Supporting Causes: TSS Phosphorus (Total) Nitrogen (Total) Chlorophyll a	Not Supporting Causes: Fish Consumption Advisory Total PCBs Arsenic	Fully Supporting
Tidal Basin	DCPTB01L	Not Supporting Causes: *E. coli* pH	Not Supporting Causes: pH	Not Supporting Cause: pH	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting

Waterbody Name	Waterbody ID	Class A Swimming Use	Class B Secondary Contact Recreation Use	Class C Aquatic Life Use	Class D Fish Consumption Use	Class E Navigation Use
Washington Ship Channel	DCPWC04E	Not Supporting Causes: *E. coli*	Fully Supporting	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory Arsenic Total PCBs	Fully Supporting
Rock Creek (Lower) Segment 01	DCRCR00R SEG1	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: TSS Benthic macroinvertebrates bioassessment	Not Supporting Causes: Fish Consumption Advisory Arsenic DDE Dieldrin Heptachlor Epoxide Total PCBs	Fully Supporting
Rock Creek (Upper) Segment 02	DCRCR00R SEG2	Not Supporting Causes: *E. coli* TSS	Not Supporting Causes: TSS	Not Supporting Causes: TSS Habitat assessment	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting
Battery Kemble Creek	DCTBK01R	Not Supporting Cause: *E. coli*	Fully Supporting	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory	NDU

Waterbody Name	Waterbody ID	Class A Swimming Use	Class B Secondary Contact Recreation Use	Class C Aquatic Life Use	Class D Fish Consumption Use	Class E Navigation Use
Broad Branch	DCTBR01R	Not Supporting Cause: *E. coli*	Fully Supporting	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory Total PCBs DDT Dieldrin Heptachlor Epoxide	Fully Supporting
Chesapeake & Ohio Canal	DCTCO01L	Fully Supporting	Fully Supporting	Fully Supporting	Not Supporting Cause: Fish Consumption Advisory	Fully Supporting
Dalecarlia Tributary	DCTDA01R	Not Supporting Causes: *E. coli*	Fully Supporting	Not Supporting Cause: Benthic macroinvertebrates bioassessment	Not Supporting Causes: Fish Consumption Advisory	NDU
Dumbarton Oaks	DCTDO01R	Not Supporting Cause: *E. coli*	Fully Supporting	Not Supporting Cause: Heptachlor Epoxide	Not Supporting Causes: Fish Consumption Advisory Total PCBs Heptachlor Epoxide Chlordane Dieldrin DDT Arsenic	Fully Supporting

Waterbody Name	Waterbody ID	Class A Swimming Use	Class B Secondary Contact Recreation Use	Class C Aquatic Life Use	Class D Fish Consumption Use	Class E Navigation Use
Fort Dupont	DCTDU01R	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Cause: TSS	Not Supporting Causes: Fish Consumption Advisory Total PCBs Arsenic	NDU
Foundry Branch	DCTFB02R	Not Supporting Cause: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Cause: TSS	Not Supporting Cause: Fish Consumption Advisory	NDU
Fort Chaplin Run	DCTFC01R	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: DO TSS	Not Supporting Causes: Fish Consumption Advisory Arsenic	NDU
Fort Davis Tributary	DCTFD01R	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: TSS	Not Supporting Causes: Fish Consumption Advisory Arsenic	NDU
Fenwick Branch	DCTFE01R	Not Supporting Cause: *E. coli*	Fully Supporting	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting

Waterbody Name	Waterbody ID	Class A Swimming Use	Class B Secondary Contact Recreation Use	Class C Aquatic Life Use	Class D Fish Consumption Use	Class E Navigation Use
Fort Stanton Tributary	DCTFS01R	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: TSS	Not Supporting Causes: Fish Consumption Advisory Total PCBs Arsenic	NDU
Hickey Run	DCTHR01R	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: TSS Habitat Assessment Residual Chlorine	Not Supporting Causes: Fish Consumption Advisory	NDU
Klingle Valley	DCTKV01R	Not Supporting Cause: *E. coli*	Fully Supporting	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting
Luzon Branch	DCTLU01	Not Supporting Cause: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: Habitat Assessment	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting

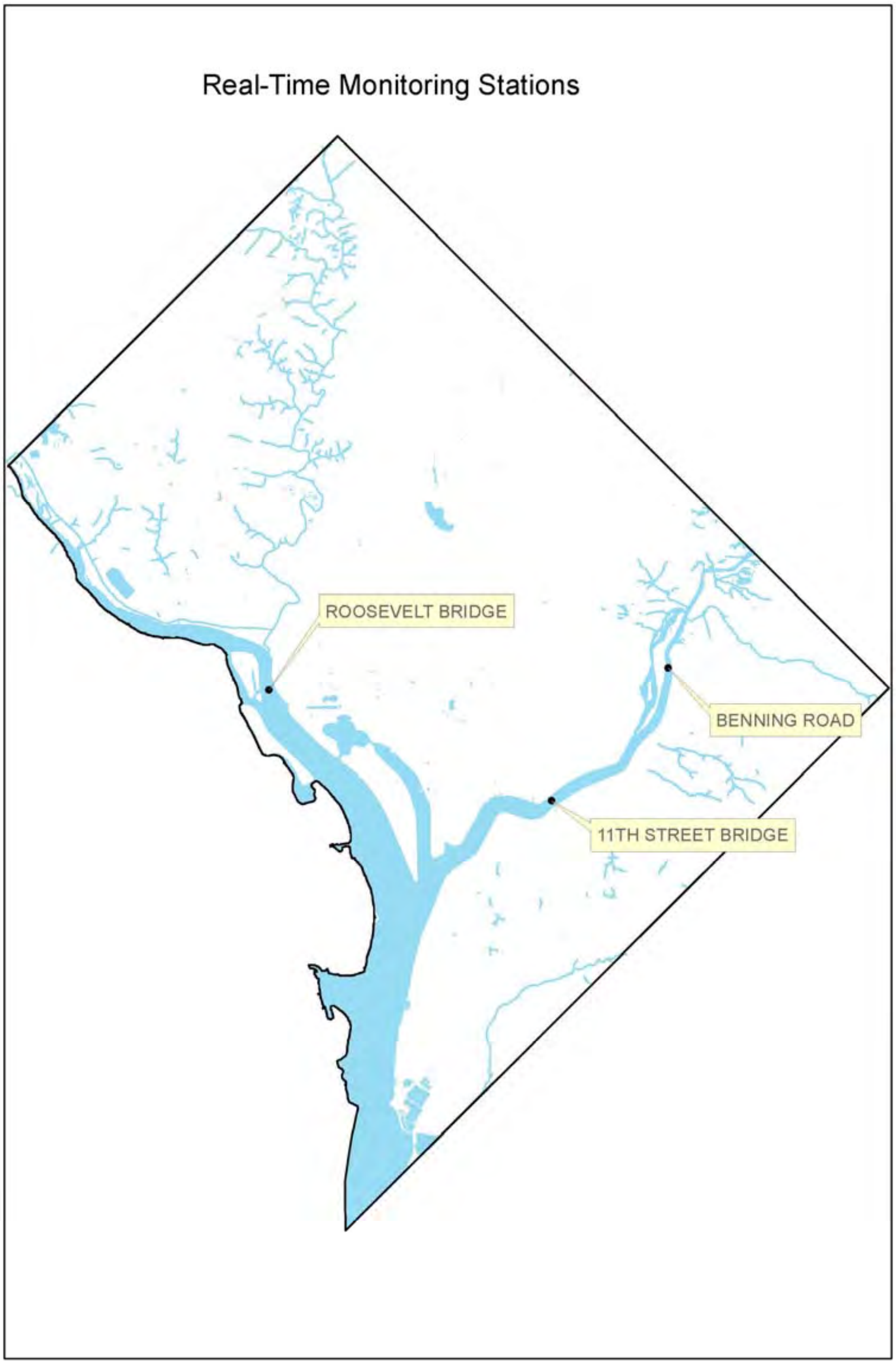
Waterbody Name	Waterbody ID	Class A Swimming Use	Class B Secondary Contact Recreation Use	Class C Aquatic Life Use	Class D Fish Consumption Use	Class E Navigation Use
Melvin Hazen Valley Branch	DCTMH01R	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: TSS	Not Supporting Causes: Fish Consumption Advisory Total PCBs Heptachlor Epoxide Dieldrin DDT Arsenic	Fully Supporting
Nash Run	DCTNA01R	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: TSS Habitat Assessment	Not Supporting Causes: Fish Consumption Advisory Arsenic	NDU
Normanstone Creek	DCTNS01R	Not Supporting Causes: *E. coli*	Fully Supporting	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting
Oxon Run	DCTOR01R	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: TSS	Not Supporting Causes: Fish Consumption Advisory	NDU
Pope Branch (Hawes Run)	DCTPB01R	Not Supporting Causes: *E. coli*	Fully Supporting	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory	NDU

Waterbody Name	Waterbody ID	Class A Swimming Use	Class B Secondary Contact Recreation Use	Class C Aquatic Life Use	Class D Fish Consumption Use	Class E Navigation Use
Pinehurst Branch	DCTPI01R	Not Supporting Causes: *E. coli*	Fully Supporting	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting
Portal Branch	DCTPO01R	Not Supporting Cause: *E. coli*	Fully Supporting	Not Supporting Cause: Habitat Assessment	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting
Piney Branch	DCTPY01R	Not Supporting Cause: *E. coli*	Fully Supporting	Not Supporting Cause: Benthic macroinvertebrates bioassessment Habitat Assessment	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting
Soapstone Creek	DCTSO01R	Not Supporting Causes: *E. coli*	Fully Supporting	Fully Supporting	Not Supporting Causes: Fish Consumption Advisory	Fully Supporting
Texas Avenue Tributary	DCTTX27R	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: TSS DDD	Not Supporting Causes: Fish Consumption Advisory Dieldrin DDD Arsenic	NDU

Waterbody Name	Waterbody ID	Class A Swimming Use	Class B Secondary Contact Recreation Use	Class C Aquatic Life Use	Class D Fish Consumption Use	Class E Navigation Use
Watts Branch DC (Lower) Seg 01	DCTWB00R SEG1	Not Supporting Causes: *E. coli* TSS	Not Supporting Cause: TSS	Not Supporting Causes: TSS	Not Supporting Causes: Fish Consumption Advisory Dieldrin Arsenic	NDU
Watts Branch DC (Upper) Seg 02	DCTWB00R SEG2	Not Supporting Causes: *E. coli* TSS	Not Supporting Causes: TSS	Not Supporting Causes: TSS Habitat Assessment	Not Supporting Causes: Fish Consumption Advisory Total PCBs Dieldrin Arsenic	NDU

FULLY = Fully supporting designated use
NOT = Not supporting designated use
NDU = Not a designated use

Appendix 3.2 Real Time Monitoring Stations


Real-Time Monitoring Stations
ROOSEVELT BRIDGE
BENNING ROAD
11TH STREET BRIDGE

2019-2020 Percentage Exceedances for Real-time Monitoring

Potomac and Anacostia Rivers Dissolved Oxygen

Instantaneous minimum - % violations - criteria standard 5.0 mg/l Feb-May, 3.2 mg/l Jun– Jan

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov	
Year	19	20	19	20	19	20	19	20	19	20	19	20	19	20	19	20	19	20
Upper Anacostia	n/a	n/a	49.5	n/a	79.8	n/a	40.0	n/a	n/a	n/a	90.0	n/a	95.0	n/a	50.4	n/a	47.7	n/a
Lower Anacostia	0.0	0.0	39.8	0.2	83.3	37.4	31.2	61.5	86.5	62.4	69.8	53.4	48.7	60.3	6.9	2.9	0.0	0.0
Upper Potomac	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Potomac and Anacostia River Turbidity

Monthly % above 20 NTU

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
Year	19	20	19	20	19	20	19	20	19	20	19	20	19	20	19	20	19	20	19	20
Upper Anacostia	n/a	n/a	90.1	n/a	56.3	n/a	30.0	n/a	n/a	n/a	38.5	n/a	34.7	n/a	n/a	n/a	89.0	n/a	56.4	n/a
Lower Anacostia	60.0	0.3	38.5	33.5	35.9	21.7	6.6	8.1	86.5	52.3	67.6	27.4	3.7	48.5	10.5	85.0	33.2	10.1	38.1	30.9
Upper Potomac	42.2	0.0	27.2	28.3	46.5	33.4	0.0	1.2	10.1	10.1	1.6	8.4	0.0	5.0	0.0	4.9	18.0	n/a	16.2	10.7

Potomac and Anacostia River pH

Monthly % greater than 8.5 or less than 6.0

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
Year	19	20	19	20	19	20	19	20	19	20	19	20	19	20	19	20	19	20	19	20
Upper Anacostia	0.0	n/a	0.0	n/a	0.0	n/a	0.0	n/a	0.0	n/a	0.0	n/a	0.0	n/a	0.0	n/a	0.0	n/a	0.0	n/a
Lower Anacostia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.0
Upper Potomac	0.0	0.0	9.5	0.0	0.0	0.0	11.3	0.0	0.0	0.0	3.5	0.0	3.6	0.0	.0.0	0.0	0.0	n/a	3.1	0.0

n/a – not assessed

Real time monitoring equipment removed in winter months (Dec – Feb) to prevent ice damage.

Appendix 3.3 2017-2021 Statistical Summary Reports

Total Statistical Summary Report

Waterbody	Station Data Used	Temp % Violation	pH % Violation	DO % Violation	Turb % Violation	Class A *E. coli* % Violation*
DCAKL00L	KNG01, KNG02	0.00	0.00	12.35	50.62	40.00
DCANA00E SEG1	ANA19, ANA21, ANA24	0.00	1.11	5.00	8.94	23.81
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	0.00	1.61	17.36	25.24	34.15
DCPMS00E SEG1	PMS37, PMS44	0.00	0.00	0.00	9.88	12.50
DCPMS00E SEG2	PMS10, PMS21	1.04	4.17	0.00	16.23	13.95
DCPMS00E SEG3	PMS01	0.00	2.50	0.00	15.00	17.50
DCPTB01L	PTB01	0.00	12.50	0.00	2.44	20.51
DCPWC04E	PWC04	0.00	7.87	0.00	1.14	14.29
DCRCR00R SEG1	RCR09	0.00	1.22	0.00	14.63	71.26
DCRCR00R SEG2	RCR01	0.00	0.76	0.00	16.15	50.00
DCTBK01R	TBK01	0.00	3.70	0.00	0.00	24.00
DCTBR01R	TBR01	0.00	4.00	0.00	0.00	65.38
DCTCO01L	TCO01, TCO06	0.00	3.45	3.23	0.00	6.25
DCTDA01R	TDA01	0.00	0.00	0.00	0.00	80.77
DCTDO01R	TDO01	0.00	0.00	0.00	3.70	28.00
DCTDU01R	TDU01	0.00	0.00	4.17	33.33	50.00
DCTFB02R	TFB02	0.00	0.00	0.00	11.54	28.00
DCTFC01R	TFC01	0.00	0.00	0.00	23.08	65.38

Waterbody	Station Data Used	Temp % Violation	pH % Violation	DO % Violation	Turb % Violation	Class A *E. coli* % Violation*
DCTFD01R	TFD01	0.00	0.00	3.70	51.85	51.85
DCTFE01R	TFE01	0.00	0.00	0.00	0.00	23.08
DCTFS01R	TFS01	0.00	0.00	0.00	29.63	48.15
DCTHR01R	THR01	0.00	0.00	2.50	32.84	96.51
DCTKV01R	TKV01	0.00	0.00	0.00	3.85	19.23
DCTLU01	TLU01	0.00	0.00	0.00	11.11	80.77
DCTMH01R	TMH01	0.00	0.00	0.00	14.81	34.62
DCTNA01R	TNA01	0.00	0.00	0.00	22.22	69.23
DCTNS01R	TNS01	0.00	0.00	0.00	0.00	72.00
DCTOR01R	TOR01	0.00	0.00	3.85	19.23	61.54
DCTPB01R	TPB01	0.00	0.00	0.00	7.41	29.63
DCTPI01R	TPI01	0.00	0.00	0.00	0.00	36.36
DCTPO01R	TPO01	0.00	3.85	0.00	0.00	52.00
DCTPY01R	TPY01	0.00	0.00	0.00	0.00	41.67
DCTSO01R	TSO01	0.00	7.41	0.00	0.00	37.50
DCTTX27R	TTX27	0.00	0.00	3.85	30.77	53.85
DCTWB00R SEG1	TWB01	0.00	0.00	0.00	22.50	68.29
DCTWB00R SEG2	TWB05, TWB06	0.00	8.33	0.00	24.17	70.54

* Criteria – 410 MPN/mL single sample value

E. coli Statistical Summary Report (MPN/100mL)

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.*
DCAKL00L	KNG01, KNG02	17.00	4840.00	728.39	1003.64	189.00	40.00
DCANA00E SEG1	ANA21	16.00	3106.00	382.15	574.61	210.30	23.81

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.*
DCANA00E SEG2	ANA01, ANA08, ANA14	14.00	2420.00	481.67	632.00	219.60	34.15
DCPMS00E SEG1	PMS37, PMS44	1.00	1842.00	160.36	332.56	25.00	12.50
DCPMS00E SEG2	PMS10, PMS21	1.00	1120.00	138.49	235.02	36.16	13.95
DCPMS00E SEG3	PMS01	1.00	4840.00	333.88	870.15	26.50	17.50
DCPTB01L	PTB01	3.00	1120.00	205.92	304.23	59.00	20.51
DCPWC04E	PWC04	1.00	2420.00	233.92	431.26	102.00	14.29
DCRCR00R SEG1	RCR09	78.00	30931.45	2678.66	4587.68	1026.65	71.26
DCRCR00R SEG2	RCR01	62.00	2420.00	626.64	640.82	403.43	50.00
DCTBK01R	TBK01	30.00	2420.00	362.00	540.22	138.00	24.00
DCTBR01R	TBR01	28.00	2420.00	1042.35	885.66	797.00	65.38
DCTCO01L	TCO01, TCO06	1.00	2420.00	198.23	488.28	49.00	6.25
DCTDA01R	TDA01	38.00	2420.00	1267.27	917.80	949.50	80.77
DCTDO01R	TDO01	7.00	1300.00	297.92	333.98	172.00	28.00
DCTDU01R	TDU01	1.00	4839.00	868.00	1172.49	384.00	50.00
DCTFB02R	TFB02	4.00	2420.00	528.16	828.47	89.00	28.00
DCTFC01R	TFC01	15.00	2420.00	1245.62	1018.71	1251.50	65.38
DCTFD01R	TFD01	1.00	4839.00	913.89	1137.59	649.00	51.85
DCTFE01R	TFE01	30.00	1733.00	341.15	406.10	200.00	23.08
DCTFS01R	TFS01	1.00	24200.00	2403.37	6332.74	345.00	48.15
DCTHR01R	THR01	158.00	128685.66	9052.73	17566.25	2420.00	96.51
DCTKV01R	TKV01	8.00	2420.00	326.85	583.12	60.00	19.23
DCTLU01R	TLU01	150.00	2420.00	1577.35	917.99	1733.00	80.77
DCTMH01R	TMH01	18.00	2420.00	697.96	977.28	129.00	34.62
DCTNA01R	TNA01	75.00	2420.00	1092.73	973.42	596.00	69.23
DCTNS01R	TNS01	13.00	2420.00	1183.84	935.30	866.00	72.00
DCTOR01R	TOR01	77.00	2420.00	1121.35	1014.53	605.00	61.54
DCTPB01R	TPB01	10.00	2420.00	576.41	861.98	115.00	29.63
DCTPI01R	TPI01	82.00	2420.00	528.95	607.60	242.00	36.36
DCTPO01R	TPO01	34.00	2420.00	774.36	903.32	502.00	52.00
DCTPY01R	TPY01	34.00	2420.00	618.58	792.02	261.00	41.67

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.*
DCTSO01R	TSO01	14.00	2420.00	588.96	732.64	269.50	37.50
DCTTX27R	TTX27	9.00	24200.00	1753.58	4661.47	617.50	53.85
DCTWB00R SEG1	TWB01	42.00	24196.00	1800.24	3748.32	707.00	68.29
DCTWB00R SEG2	TWB05, TWB06	1.00	24200.00	2376.15	3901.50	980.00	70.54

* Criteria – 410 MPN/mL single sample value

Dissolved Oxygen Statistical Summary Report (mg/L)

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCAKL00L	KNG01, KNG02	2.40	13.63	7.35	3.20	7.49	12.35
DCANA00E SEG1	ANA19, ANA21, ANA24	1.30	14.63	7.68	2.91	7.29	5.00
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	1.43	13.84	6.92	3.21	6.57	17.36
DCPMS00E SEG1	PMS37, PMS44	6.40	14.42	10.43	2.38	10.80	0.00
DCPMS00E SEG2	PMS10, PMS21	5.87	15.68	9.89	2.19	9.16	0.00
DCPMS00E SEG3	PMS01	7.64	15.28	11.24	2.45	11.07	0.00
DCPTB01L	PTB01	7.38	15.75	11.05	2.12	10.57	0.00
DCPWC04E	PWC04	4.70	15.06	9.47	2.15	9.36	0.00
DCRCR00R SEG1	RCR09	7.22	14.54	9.91	2.03	9.08	0.00
DCRCR00R SEG2	RCR01	5.60	14.50	9.14	2.20	8.11	0.00
DCTBK01R	TBK01	8.28	16.27	11.53	2.06	11.70	0.00
DCTBR01R	TBR01	7.40	16.41	11.77	2.79	11.54	0.00
DCTCO01L	TCO01, TCO06	4.20	17.88	8.56	2.99	7.81	3.23

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCTDA01R	TDA01	6.90	15.57	10.21	2.36	10.02	0.00
DCTDO01R	TDO01	7.62	13.20	10.46	1.78	10.71	0.00
DCTDU01R	TDU01	1.23	13.70	10.62	2.66	11.39	4.17
DCTFB02R	TFB02	7.34	14.80	11.11	2.43	10.40	0.00
DCTFC01R	TFC01	4.30	13.08	9.23	2.56	9.53	0.00
DCTFD01R	TFD01	1.80	12.51	8.65	2.77	8.71	3.70
DCTFE01R	TFE01	6.70	14.18	10.44	2.36	9.89	0.00
DCTFS01R	TFS01	7.60	12.83	10.55	1.84	10.70	0.00
DCTHR01R	THR01	4.00	16.22	8.80	2.73	8.57	2.50
DCTKV01R	TKV01	8.30	14.53	11.06	2.03	11.35	0.00
DCTLU01R	TLU01	8.00	13.92	10.51	1.92	10.56	0.00
DCTMH01R	TMH01	8.40	14.40	11.24	1.96	11.47	0.00
DCTNA01R	TNA01	6.20	14.75	10.44	2.03	10.54	0.00
DCTNS01R	TNS01	7.63	13.86	10.51	1.96	10.68	0.00
DCTOR01R	TOR01	4.50	15.15	10.66	2.61	11.01	3.85
DCTPB01R	TPB01	5.42	12.41	9.19	2.30	9.30	0.00
DCTPI01R	TPI01	7.70	16.43	11.87	2.79	11.95	0.00
DCTPO01R	TPO01	6.90	14.34	9.99	2.37	9.53	0.00
DCTPY01R	TPY01	7.14	14.99	10.89	2.47	10.96	0.00
DCTSO01R	TSO01	8.28	14.87	11.25	2.17	11.53	0.00
DCTTX27R	TTX27	0.69	12.79	9.67	2.60	10.07	3.85
DCTWB00R SEG1	TWB01	5.86	16.58	10.16	2.97	10.05	0.00

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCTWB00R SEG2	TWB05, TWB06	6.75	14.56	10.40	2.01	10.54	0.00

pH Statistical Summary Report

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCAKL00L	KNG01, KNG02	6.74	8.28	7.41	0.29	7.42	0.00
DCANA00E SEG1	ANA19, ANA21, ANA24	5.30	8.31	7.39	0.38	7.39	1.11
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	4.50	8.28	7.23	0.43	7.22	1.61
DCPMS00E SEG1	PMS37, PMS44	6.72	8.24	7.80	0.23	7.81	0.00
DCPMS00E SEG2	PMS10, PMS21	6.68	8.76	8.00	0.30	8.01	4.17
DCPMS00E SEG3	PMS01	7.48	8.74	7.97	0.26	7.98	2.50
DCPTB01L	PTB01	7.57	8.94	8.09	0.33	7.99	12.50
DCPWC04E	PWC04	6.10	12.30	7.95	0.73	7.88	7.87
DCRCR00R SEG1	RCR09	6.97	8.67	7.70	0.23	7.67	1.22
DCRCR00R SEG2	RCR01	7.05	12.20	7.62	0.45	7.57	0.76
DCTBK01R	TBK01	7.61	8.52	7.85	0.18	7.83	3.70
DCTBR01R	TBR01	7.50	8.51	7.93	0.29	7.87	4.00
DCTCO01L	TCO01, TCO06	7.07	8.65	7.86	0.29	7.89	3.45
DCTDA01R	TDA01	7.35	8.19	7.65	0.20	7.64	0.00
DCTDO01R	TDO01	7.38	7.97	7.64	0.18	7.63	0.00
DCTDU01R	TDU01	6.75	7.74	7.38	0.24	7.44	0.00
DCTFB02R	TFB02	7.24	8.27	7.71	0.27	7.69	0.00
DCTFC01R	TFC01	7.04	7.78	7.43	0.19	7.42	0.00
DCTFD01R	TFD01	6.52	7.67	7.13	0.30	7.20	0.00
DCTFE01R	TFE01	7.12	7.97	7.46	0.22	7.42	0.00

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCTFS01R	TFS01	6.85	8.21	7.48	0.28	7.37	0.00
DCTHR01R	THR01	6.70	7.87	7.57	0.22	7.60	0.00
DCTKV01R	TKV01	6.85	8.44	7.55	0.27	7.55	0.00
DCTLU01R	TLU01	7.16	8.44	7.63	0.24	7.61	0.00
DCTMH01R	TMH01	7.22	8.21	7.74	0.20	7.73	0.00
DCTNA01R	TNA01	7.14	8.36	7.65	0.28	7.71	0.00
DCTNS01R	TNS01	7.23	8.48	7.69	0.29	7.68	0.00
DCTOR01R	TOR01	7.15	8.45	7.63	0.33	7.55	0.00
DCTPB01R	TPB01	6.88	7.76	7.27	0.26	7.23	0.00
DCTPI01R	TPI01	7.36	8.28	7.83	0.26	7.83	0.00
DCTPO01R	TPO01	7.02	9.67	7.52	0.47	7.48	3.85
DCTPY01R	TPY01	6.98	8.24	7.46	0.28	7.46	0.00
DCTSO01R	TSO01	7.37	9.10	7.85	0.39	7.77	7.41
DCTTX27R	TTX27	6.94	7.86	7.35	0.25	7.31	0.00
DCTWB00R SEG1	TWB01	7.28	8.38	7.75	0.25	7.77	0.00
DCTWB00R SEG2	TWB05, TWB06	7.19	8.81	7.85	0.39	7.74	8.33

Temperature Statistical Summary Report (°C)

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCAKL00L	KNG01, KNG02	0.01	30.56	14.41	8.93	11.93	0.00
DCANA00E SEG1	ANA19, ANA21, ANA24	0.86	31.80	17.76	8.80	20.00	0.00
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	0.36	31.90	17.62	8.65	19.41	0.00
DCPMS00E SEG1	PMS37, PMS44	0.35	29.00	14.90	8.74	14.10	0.00
DCPMS00E SEG2	PMS10, PMS21	0.19	35.67	19.42	8.56	21.85	1.04
DCPMS00E SEG3	PMS01	0.15	29.00	14.11	8.99	13.27	0.00

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCPTB01L	PTB01	1.80	29.82	14.64	9.12	13.25	0.00
DCPWC04E	PWC04	1.34	31.70	19.33	8.72	22.10	0.00
DCRCR00R SEG1	RCR09	0.52	26.30	17.40	7.38	20.70	0.00
DCRCR00R SEG2	RCR01	0.50	26.60	16.83	7.72	20.10	0.00
DCTBK01R	TBK01	1.10	22.98	11.02	6.70	9.02	0.00
DCTBR01R	TBR01	3.80	23.65	12.88	6.35	13.01	0.00
DCTCO01L	TCO01, TCO06	5.72	31.77	21.29	7.90	24.80	0.00
DCTDA01R	TDA01	4.23	23.57	13.46	5.75	11.75	0.00
DCTDO01R	TDO01	3.64	23.97	13.44	5.77	12.01	0.00
DCTDU01R	TDU01	1.50	25.70	12.49	6.95	9.36	0.00
DCTFB02R	TFB02	3.45	22.94	12.29	6.22	10.91	0.00
DCTFC01R	TFC01	5.10	24.30	13.46	6.03	11.27	0.00
DCTFD01R	TFD01	0.74	23.40	12.16	6.68	10.46	0.00
DCTFE01R	TFE01	2.45	24.43	13.18	6.79	11.25	0.00
DCTFS01R	TFS01	2.49	23.50	12.30	6.58	10.12	0.00
DCTHR01R	THR01	0.02	25.30	14.92	6.57	14.66	0.00
DCTKV01R	TKV01	2.16	24.50	12.25	6.41	10.39	0.00
DCTLU01R	TLU01	4.36	23.79	13.85	5.12	13.16	0.00
DCTMH01R	TMH01	2.46	22.90	12.45	6.16	10.60	0.00
DCTNA01R	TNA01	6.54	26.16	14.95	6.02	13.93	0.00
DCTNS01R	TNS01	5.80	22.75	12.51	5.70	10.08	0.00
DCTOR01R	TOR01	4.38	25.90	12.23	6.93	9.68	0.00
DCTPB01R	TPB01	5.05	25.10	12.44	6.88	9.32	0.00
DCTPI01R	TPI01	4.82	23.10	12.18	6.18	9.28	0.00
DCTPO01R	TPO01	5.69	23.59	13.21	6.36	10.66	0.00
DCTPY01R	TPY01	3.72	23.70	12.11	6.78	9.10	0.00
DCTSO01R	TSO01	4.85	23.18	12.49	6.33	9.20	0.00
DCTTX27R	TTX27	5.40	21.80	12.00	5.56	10.39	0.00
DCTWB00R SEG1	TWB01	0.04	25.44	13.65	7.19	12.21	0.00
DCTWB00R SEG2	TWB05, TWB06	0.00	26.40	13.63	6.90	11.12	0.00

Turbidity Statistical Summary Report (NTU)

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCAKL00L	KNG01, KNG02	2.70	175.00	29.68	27.71	21.60	50.62
DCANA00E SEG1	ANA19, ANA21, ANA24	1.70	158.00	12.39	15.29	8.28	8.94
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	3.23	217.00	18.55	19.14	13.28	25.24
DCPMS00E SEG1	PMS37, PMS44	2.25	57.40	10.18	8.67	7.36	9.88
DCPMS00E SEG2	PMS10, PMS21	0.38	138.00	13.50	21.74	5.60	16.23
DCPMS00E SEG3	PMS01	0.20	145.00	14.81	28.00	5.65	15.00
DCPTB01L	PTB01	1.27	35.56	7.57	5.56	6.53	2.44
DCPWC04E	PWC04	0.20	21.20	4.63	3.57	3.42	1.14
DCRCR00R SEG1	RCR09	0.00	200.00	13.01	30.02	3.24	14.63
DCRCR00R SEG2	RCR01	0.00	295.60	15.12	32.28	4.83	16.15
DCTBK01R	TBK01	0.00	2.76	0.67	0.82	0.40	0.00
DCTBR01R	TBR01	0.00	3.18	0.59	0.78	0.44	0.00
DCTCO01L	TCO01, TCO06	0.71	16.23	5.79	3.67	4.84	0.00
DCTDA01R	TDA01	0.00	2.36	0.75	0.81	0.52	0.00
DCTDO01R	TDO01	0.00	32.16	2.56	6.05	1.05	3.70
DCTDU01R	TDU01	1.58	1232.00	108.80	300.42	7.23	33.33
DCTFB02R	TFB02	0.00	519.00	24.36	101.72	0.36	11.54
DCTFC01R	TFC01	1.90	121.40	20.20	29.48	7.09	23.08
DCTFD01R	TFD01	2.68	307.00	47.23	70.32	21.90	51.85
DCTFE01R	TFE01	0.00	2.93	0.60	0.68	0.40	0.00
DCTFS01R	TFS01	0.58	1885.00	130.27	417.27	6.12	29.63
DCTHR01R	THR01	1.10	110.00	20.70	22.92	10.90	32.84
DCTKV01R	TKV01	0.00	32.10	2.30	6.76	0.26	3.85
DCTLU01R	TLU01	0.00	267.08	16.71	54.18	0.66	11.11
DCTMH01R	TMH01	0.00	132.19	13.48	32.10	0.92	14.81
DCTNA01R	TNA01	0.16	48.21	11.19	14.72	4.98	22.22

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCTNS01R	TNS01	0.00	12.57	1.05	2.73	0.15	0.00
DCTOR01R	TOR01	0.00	95.70	10.87	21.03	2.50	19.23
DCTPB01R	TPB01	3.30	264.00	24.71	51.42	13.07	7.41
DCTPI01R	TPI01	0.00	5.80	0.55	1.30	0.05	0.00
DCTPO01R	TPO01	0.00	14.63	1.47	3.07	0.52	0.00
DCTPY01R	TPY01	0.00	8.87	1.31	2.38	0.31	0.00
DCTSO01R	TSO01	0.00	13.59	1.10	2.89	0.28	0.00
DCTTX27R	TTX27	3.39	134.80	20.92	25.67	12.86	30.77
DCTWB00R SEG1	TWB01	0.50	433.00	28.93	76.38	4.72	22.50
DCTWB00R SEG2	TWB05, TWB06	0.00	459.70	26.03	59.78	4.65	24.17

Appendix 3.4 Draft District of Columbia 303(d) List

Categorization of District of Columbia Waters

Category 1- All designated uses are supported, no use is threatened.

No DC waters fit this category.

Category 2- Available data and/or information indicate that some, but not all, designated uses are supported.

No DC waters fit this category.

Category 3- There is insufficient available data and/or information to make a use support determination.

Category 4- Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed.

See subcategories below:

Category 4A- TMDLs needed to result in a designated use attainment have been approved or established by EPA.

Category 4B- TMDL not required. Other pollution control requirements (such as permits, strategies) are expected to address waterbody/pollutant combinations and result in attainment of the water quality standards in a reasonable period of time.

Category 4C- Impaired or threatened waters for one or more designated uses. TMDL is not required as impairment is not caused by a pollutant.

Category 5- Available data and/or information indicate that a designated use is not being supported or is threatened, and a TMDL is needed.

Geographic Location: 02070010- Potomac watershed 02070008- Middle Potomac-Catoctin watershed

DISTRICT OF COLUMBIA

LIST OF IMPAIRED WATERBODIES

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCAKL00L_0 0	KINGMAN LAKE	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	DISSOLVED OXYGEN	Not meeting criteria	Cause	2018	N			5	5,4A	
DCAKL00L_0 0	KINGMAN LAKE	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCAKL00L_0 0	KINGMAN LAKE	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	OIL AND GREASE	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCAKL00L_0 0	KINGMAN LAKE	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCAKL00L_0 0	KINGMAN LAKE	ESTUARY	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCAKL00L_0 0	KINGMAN LAKE	ESTUARY	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A	
DCAKL00L_0 0	KINGMAN LAKE	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified
DCAKL00L_0 0	KINGMAN LAKE	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BIOCHEMICAL OXYGEN DEMAND (BOD)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCAKL00L_0 0	KINGMAN LAKE	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCAKL00L_00	KINGMAN LAKE	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCANA00E_01	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	Impairment Verified
DCANA00E_01	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	OIL AND GREASE	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCANA00E_01	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCANA00E_01	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCANA00E_01	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TRASH	Not meeting criteria	Cause	2006	N		High	5	5,4A, 2	
DCANA00E_01	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	BIOCHEMICAL OXYGEN DEMAND (BOD)	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCANA00E_01	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	PHOSPHORUS, TOTAL	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCANA00E_01	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	NITROGEN, TOTAL	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCANA00E_01	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCANA00E_0 1	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	Impairment Verified
DCANA00E_0 1	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCANA00E_0 1	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCANA00E_0 1	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	CHLOROPHYLL-A	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCANA00E_0 1	ANACOSTIA DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	DISSOLVED OXYGEN	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DDT (DICHLORODIPHENYLTRIC HLOROETHANE)	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	PHOSPHORUS, TOTAL	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DIELDRIN	Not meeting criteria	Cause	1998	N		High	5	5,4A	No WQ evidence of impairment
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DDD (DICHLORODIPHENYLDICH LOROETHANE)	Not meeting criteria	Cause	1998	N		High	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BIOCHEMICAL OXYGEN DEMAND (BOD)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCANA00E_02	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	DISSOLVED OXYGEN	Not meeting criteria	Cause	2008	N		Low	5	5,4A	Impairment Verified
DCANA00E_02	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	NITROGEN, TOTAL	Not meeting criteria	Cause	1998	N		Low	5	5,4A	Impairment Verified
DCANA00E_02	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	1998	N		High	5	5,4A	
DCANA00E_02	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A	
DCANA00E_02	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) (AQUATIC ECOSYSTEMS)	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	CHLOROPHYLL-A	Not meeting criteria	Cause	2008	N		Low	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	CHLORDANE	Not meeting criteria	Cause	1998	N		High	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	HEPTACHLOR EPOXIDE	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TRASH	Not meeting criteria	Cause	2006	N		High	5	5,4A	
DCANA00E_0 2	ANACOSTIA DC (Upper) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	OIL AND GREASE	Not meeting criteria	Cause	1998	N		Low	5	5,4A	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPMS00E_01	POTOMAC DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	DISSOLVED OXYGEN	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	New candidate for category 5
DCPMS00E_01	POTOMAC DC (Lower) Segment 01	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Fully Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCPMS00E_01	POTOMAC DC (Lower) Segment 01	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	2022	N		High	5	5,4A, 2	
DCPMS00E_01	POTOMAC DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	CHLOROPHYLL-A	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCPMS00E_01	POTOMAC DC (Lower) Segment 01	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPMS00E_01	POTOMAC DC (Lower) Segment 01	ESTUARY	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	Impairment Verified
DCPMS00E_01	POTOMAC DC (Lower) Segment 01	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCPMS00E_01	POTOMAC DC (Lower) Segment 01	ESTUARY	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCPMS00E_01	POTOMAC DC (Lower) Segment 01	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCPMS00E_02	POTOMAC DC (Middle) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DIELDRIN	Not meeting criteria	Cause	2022	N		High	5	5,4A, 2	New candidate for category 5

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPMS00E_02	POTOMAC DC (Middle) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	
DCPMS00E_02	POTOMAC DC (Middle) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	CHLOROPHYLL-A	Not meeting criteria	Cause	2008	N		Low	5	5,4A, 2	New candidate for category 5
DCPMS00E_02	POTOMAC DC (Middle) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	DISSOLVED OXYGEN	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCPMS00E_02	POTOMAC DC (Middle) Segment 02	ESTUARY	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCPMS00E_02	POTOMAC DC (Middle) Segment 02	ESTUARY	Primary Contact Recreation	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPMS00E_0 2	POTOMAC DC (Middle) Segment 02	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCPMS00E_0 2	POTOMAC DC (Middle) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	2022	N		High	5	5,4A, 2	
DCPMS00E_0 2	POTOMAC DC (Middle) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCPMS00E_0 2	POTOMAC DC (Middle) Segment 02	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	Impairment Verified
DCPMS00E_0 2	POTOMAC DC (Middle) Segment 02	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPMS00E_0 2	POTOMAC DC (Middle) Segment 02	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCPMS00E_0 2	POTOMAC DC (Middle) Segment 02	ESTUARY	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCPMS00E_0 3	POTOMAC DC (Upper) Segment 03	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	New candidate for category 5
DCPMS00E_0 3	POTOMAC DC (Upper) Segment 03	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	2022	N		High	5	5,4A, 2	
DCPMS00E_0 3	POTOMAC DC (Upper) Segment 03	ESTUARY	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPMS00E_03	POTOMAC DC (Upper) Segment 03	ESTUARY	Primary Contact Recreation	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCPMS00E_03	POTOMAC DC (Upper) Segment 03	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCPMS00E_03	POTOMAC DC (Upper) Segment 03	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	PHOSPHORUS, TOTAL	Not meeting criteria	Cause	1998	N			5	5,4A, 2	
DCPMS00E_03	POTOMAC DC (Upper) Segment 03	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCPMS00E_03	POTOMAC DC (Upper) Segment 03	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	DISSOLVED OXYGEN	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPMS00E_0 3	POTOMAC DC (Upper) Segment 03	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCPMS00E_0 3	POTOMAC DC (Upper) Segment 03	ESTUARY	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCPMS00E_0 3	POTOMAC DC (Upper) Segment 03	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	CHLOROPHYLL-A	Not meeting criteria	Cause	2008	N		Low	5	5,4A, 2	Impairment Verified
DCPMS00E_0 3	POTOMAC DC (Upper) Segment 03	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCPMS00E_0 3	POTOMAC DC (Upper) Segment 03	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPMS00E_03	POTOMAC DC (Upper) Segment 03	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	NITROGEN, TOTAL	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCPTB01L_00	TIDAL BASIN	ESTUARY	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A	
DCPTB01L_00	TIDAL BASIN	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCPTB01L_00	TIDAL BASIN	ESTUARY	Primary Contact Recreation	Not Supporting	PH	Not meeting criteria	Cause	2002	N		Medium	5	5,4A	
DCPTB01L_00	TIDAL BASIN	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	PH	Not meeting criteria	Cause	2002	N		Medium	5	5,4A	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPTB01L_00	TIDAL BASIN	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	PH	Not meeting criteria	Cause	2002	N		Medium	5	5,4A	
DCPWC04E_00	WASHINGTON SHIP CHANNEL	ESTUARY	Primary Contact Recreation	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCPWC04E_00	WASHINGTON SHIP CHANNEL	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCPWC04E_00	WASHINGTON SHIP CHANNEL	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCPWC04E_00	WASHINGTON SHIP CHANNEL	ESTUARY	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	2022	N		High	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCPWC04E_00	WASHINGTON SHIP CHANNEL	ESTUARY	Secondary Contact Recreation and Aesthetic Enjoyment	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCPWC04E_00	WASHINGTON SHIP CHANNEL	ESTUARY	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCPWC04E_00	WASHINGTON SHIP CHANNEL	ESTUARY	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCRCR00R_01	ROCK CREEK DC	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	HEPTACHLOR EPOXIDE	Not meeting criteria	Cause	2022	N		High	5	5,4A	New candidate for category 5
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DIELDRIN	Not meeting criteria	Cause	2022	N		High	5	5,4A	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A	
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DDE (DICHLORODIPHENYLDICHLOROETHYLENE)	Not meeting criteria	Cause	2022	N		High	5	5,4A	New candidate for category 5
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	2022	N		High	5	5,4A	
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	2022	N		High	5	5,4A	New candidate for category 5
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A	
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A	
DCRCR00R_01	ROCK CREEK DC (Lower) Segment 01	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Not meeting threshold	Cause	2022	N		Low	5	5,4A	
DCRCR00R_02	ROCK CREEK DC (Upper) Segment 02	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4C, 4A,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCRCR00R_02	ROCK CREEK DC (Upper) Segment 02	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4C, 4A,2	
DCRCR00R_02	ROCK CREEK DC (Upper) Segment 02	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4C, 4A,2	
DCRCR00R_02	ROCK CREEK DC (Upper) Segment 02	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4C, 4A,2	
DCRCR00R_02	ROCK CREEK DC (Upper) Segment 02	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4C, 4A,2	
DCRCR00R_02	ROCK CREEK DC (Upper) Segment 02	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Not meeting threshold	Cause	2022	N		Low	5	5,4C, 4A,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCRCR00R_02	ROCK CREEK DC (Upper) Segment 02	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4C, 4A,2	
DCTBK01R_00	BATTERY KEMBLE CREEK	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCTBK01R_00	BATTERY KEMBLE CREEK	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCTBK01R_00	BATTERY KEMBLE CREEK	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	HABITAT ASSESSMENT	Meeting threshold	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTBK01R_00	BATTERY KEMBLE CREEK	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTBR01R_0 0	BROAD BRANCH	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,4A, 2	
DCTBR01R_0 0	BROAD BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	HEPTACHLOR EPOXIDE	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCTBR01R_0 0	BROAD BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DIELDRIN	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCTBR01R_0 0	BROAD BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCTBR01R_0 0	BROAD BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTBR01R_0 0	BROAD BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DDT (DICHLORODIPHENYLTRIC HLOROETHANE)	Not meeting criteria	Cause	2022	N		High	5	5,4A, 2	New candidate for category 5
DCTBR01R_0 0	BROAD BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	HABITAT ASSESSMENT	Meeting threshold	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTBR01R_0 0	BROAD BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCTCO01L_0 0	CHESAPEAKE AND OHIO CANAL	DITCH OR CANAL	Secondary Contact Recreation and Aesthetic Enjoyment	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	
DCTCO01L_0 0	CHESAPEAKE AND OHIO CANAL	DITCH OR CANAL	Primary Contact Recreation	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTCO01L_00	CHESAPEAKE AND OHIO CANAL	DITCH OR CANAL	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	
DCTCO01L_00	CHESAPEAKE AND OHIO CANAL	DITCH OR CANAL	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,2	
DCTCO01L_00	CHESAPEAKE AND OHIO CANAL	DITCH OR CANAL	Primary Contact Recreation	Fully Supporting	ESCHERICHIA COLI (E. COLI)	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	
DCTDA01R_00	DALECARLIA TRIBUTARY	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Fully Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTDA01R_00	DALECARLIA TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTDA01R_00	DALECARLIA TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Meeting threshold	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTDA01R_00	DALECARLIA TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTDA01R_00	DALECARLIA TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Not meeting threshold	Cause	2020	N		Low	5	5,4A, 2	
DCTDA01R_00	DALECARLIA TRIBUTARY	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCTDA01R_00	DALECARLIA TRIBUTARY	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	2014	N		High	5	5,4A, 2	New candidate for category 5
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	CHLORDANE	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	HEPTACHLOR EPOXIDE	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DIELDRIN	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DDT (DICHLORODIPHENYLTRICHLOROETHANE)	Not meeting criteria	Cause	2022	N		High	5	5,4A, 2	New candidate for category 5
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HEPTACHLOR EPOXIDE	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCTDO01R_00	DUMBARTON OAKS	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,4A, 2	
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTDO01R_00	DUMBARTON OAKS	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Meeting threshold	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTDU01R_00	FORT DUPONT CREEK	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTDU01R_00	FORT DUPONT CREEK	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	2022	N		High	5	5,4A, 2	New candidate for category 5
DCTDU01R_00	FORT DUPONT CREEK	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	
DCTDU01R_00	FORT DUPONT CREEK	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTDU01R_0 0	FORT DUPONT CREEK	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCTDU01R_0 0	FORT DUPONT CREEK	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCTDU01R_0 0	FORT DUPONT CREEK	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTDU01R_0 0	FORT DUPONT CREEK	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFB02R_0 0	FOUNDRY BRANCH	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2022	N		Low	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTFB02R_00	FOUNDRY BRANCH	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCTFB02R_00	FOUNDRY BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCTFB02R_00	FOUNDRY BRANCH	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2022	N		Low	5	5,4A, 2	
DCTFB02R_00	FOUNDRY BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	
DCTFB02R_00	FOUNDRY BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	FLOW REGIME MODIFICATION	Meeting threshold	Observed effect		Y	Clarification of listing cause		5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTFB02R_0 0	FOUNDRY BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2022	N		Low	5	5,4A, 2	
DCTFC01R_0 0	FORT CHAPLIN RUN	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFC01R_0 0	FORT CHAPLIN RUN	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified
DCTFC01R_0 0	FORT CHAPLIN RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFC01R_0 0	FORT CHAPLIN RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTFC01R_00	FORT CHAPLIN RUN	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFC01R_00	FORT CHAPLIN RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	DISSOLVED OXYGEN	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFC01R_00	FORT CHAPLIN RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	PHYSICAL SUBSTRATE HABITAT ALTERATIONS	Meeting criteria	Observed effect		Y	Clarification of listing cause		5	5,4A, 2	
DCTFC01R_00	FORT CHAPLIN RUN	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCTFC01R_00	FORT CHAPLIN RUN	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTFD01R_0 0	FORT DAVIS TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	
DCTFD01R_0 0	FORT DAVIS TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCTFD01R_0 0	FORT DAVIS TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFD01R_0 0	FORT DAVIS TRIBUTARY	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFD01R_0 0	FORT DAVIS TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTFD01R_0 0	FORT DAVIS TRIBUTARY	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCTFD01R_0 0	FORT DAVIS TRIBUTARY	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFD01R_0 0	FORT DAVIS TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BIOCHEMICAL OXYGEN DEMAND (BOD)	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTFD01R_0 0	FORT DAVIS TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	DISSOLVED OXYGEN	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTFE01R_0 0	FENWICK BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting threshold	Cause	1998	N		Low	5	5,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTFE01R_0 0	FENWICK BRANCH	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Low	5	5,2	
DCTFE01R_0 0	FENWICK BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,2	
DCTFE01R_0 0	FENWICK BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	HABITAT ASSESSMENT	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	
DCTFS01R_0 0	FORT STANTON TRIBUTARY	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCTFS01R_0 0	FORT STANTON TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTFS01R_0 0	FORT STANTON TRIBUTARY	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFS01R_0 0	FORT STANTON TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFS01R_0 0	FORT STANTON TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4A, 2	
DCTFS01R_0 0	FORT STANTON TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	ALTERATION IN STREAM-SIDE OR LITTORAL VEGETATIVE COVERS	Meeting criteria	Observed effect		Y	Clarification of listing cause		5	5,4A, 2	
DCTFS01R_0 0	FORT STANTON TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTFS01R_0 0	FORT STANTON TRIBUTARY	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A, 2	
DCTFS01R_0 0	FORT STANTON TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	
DCTHR01R_0 0	HICKEY RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	DISSOLVED OXYGEN	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4C, 4A,2	
DCTHR01R_0 0	HICKEY RUN	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4C, 4A,2	
DCTHR01R_0 0	HICKEY RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Not meeting threshold	Cause	2022	N		Low	5	5,4C, 4A,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTHR01R_00	HICKEY RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4C, 4A,2	
DCTHR01R_00	HICKEY RUN	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4C, 4A,2	
DCTHR01R_00	HICKEY RUN	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4C, 4A,2	
DCTHR01R_00	HICKEY RUN	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4C, 4A,2	
DCTHR01R_00	HICKEY RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	CHLORINE, RESIDUAL (CHLORINE DEMAND)	Not meeting criteria	Cause	2002	N		Low	5	5,4C, 4A,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Delisted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTHR01R_00	HICKEY RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4C, 4A,2	
DCTKV01R_00	KLINGLE VALLEY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,2	
DCTKV01R_00	KLINGLE VALLEY	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,2	
DCTKV01R_00	KLINGLE VALLEY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	FLOW REGIME MODIFICATION	Meeting threshold	Observed effect		Y	Clarification of listing cause		5	5,2	
DCTKV01R_00	KLINGLE VALLEY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	ALTERATION IN STREAM-SIDE OR LITTORAL VEGETATIVE COVERS	Meeting threshold	Observed effect		Y	Clarification of listing cause		5	5,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTKV01R_0 0	KLINGLE VALLEY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,2	
DCTLU01R_0 0	LUZON BRANCH	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2020	N		Low	5	5,4C, 2	
DCTLU01R_0 0	LUZON BRANCH	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,4C, 2	
DCTLU01R_0 0	LUZON BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4C, 2	
DCTLU01R_0 0	LUZON BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Not meeting threshold	Cause	2022	N		Low	5	5,4C, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTLU01R_00	LUZON BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	1998	N		Low	5	5,4C, 2	
DCTLU01R_00	LUZON BRANCH	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2020	N		Low	5	5,4C, 2	
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DDT (DICHLORODIPHENYLTRICHLOROETHANE)	Not meeting criteria	Cause	2014	N		High	5	5,4A, 2	Impairment Verified
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	2014	N		High	5	5,4A, 2	New candidate for category 5
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	HEPTACHLOR EPOXIDE	Not meeting criteria	Cause	2014	N		High	5	5,4A, 2	New candidate for category 5
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,4A, 2	
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4A, 2	
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCTMH01R_00	MELVIN HAZEN VALLEY BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DIELDRIN	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	
DCTNA01R_00	NASH RUN	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4C, 4A,2	
DCTNA01R_00	NASH RUN	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	1998	N		High	5	5,4C, 4A,2	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTNA01R_0 0	NASH RUN	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4C, 4A,2	
DCTNA01R_0 0	NASH RUN	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4C, 4A,2	
DCTNA01R_0 0	NASH RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Not meeting threshold	Cause	2022	N		Low	5	5,4C, 4A,2	
DCTNA01R_0 0	NASH RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4C, 4A,2	
DCTNA01R_0 0	NASH RUN	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4C, 4A,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTNA01R_0 0	NASH RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4C, 4A,2	
DCTNS01R_0 0	NORMANSTO NE CREEK	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,2	
DCTNS01R_0 0	NORMANSTO NE CREEK	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,2	
DCTNS01R_0 0	NORMANSTO NE CREEK	RIVER	Primary Contact Recreation	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	
DCTNS01R_0 0	NORMANSTO NE CREEK	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTNS01R_0 0	NORMANSTO NE CREEK	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,2	
DCTNS01R_0 0	NORMANSTO NE CREEK	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	
DCTOR01R_0 0	OXON RUN	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	
DCTOR01R_0 0	OXON RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Meeting threshold	Meeting Criteria		Y	Applicable WQS attained, according to new assessment method		5	5,4A, 2	
DCTOR01R_0 0	OXON RUN	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTOR01R_00	OXON RUN	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCTOR01R_00	OXON RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting criteria	Meeting Criteria		N			5	5,4A, 2	
DCTOR01R_00	OXON RUN	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCTOR01R_00	OXON RUN	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2018	N		Low	5	5,4A, 2	
DCTPB01R_00	POPES BRANCH (HAWES RUN)	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTPB01R_0 0	POPES BRANCH (HAWES RUN)	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTPB01R_0 0	POPES BRANCH (HAWES RUN)	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Fully Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTPB01R_0 0	POPES BRANCH (HAWES RUN)	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTPB01R_0 0	POPES BRANCH (HAWES RUN)	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4A, 2	
DCTPB01R_0 0	POPES BRANCH (HAWES RUN)	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTPI01R_00	PINEHURST BRANCH	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,4A, 2	
DCTPI01R_00	PINEHURST BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	
DCTPI01R_00	PINEHURST BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTPI01R_00	PINEHURST BRANCH	RIVER	Primary Contact Recreation	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTPI01R_00	PINEHURST BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	No WQ evidence of impairment

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTPI01R_00	PINEHURST BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	HEPTACHLOR EPOXIDE	Not meeting criteria	Cause	1998	N		High	5	5,4A, 2	
DCTPI01R_00	PINEHURST BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	HABITAT ASSESSMENT	Meeting threshold	Meeting Criteria		N			5	5,4A, 2	
DCTPI01R_00	PINEHURST BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4A, 2	
DCTPI01R_00	PINEHURST BRANCH	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4A, 2	
DCTPO01R_0 0	PORTAL BRANCH	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4C, 2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTPO01R_00	PORTAL BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Not meeting threshold	Cause	2022	N		Low	5	5,4C, 2	
DCTPO01R_00	PORTAL BRANCH	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,4C, 2	
DCTPO01R_00	PORTAL BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4C, 2	
DCTPY01R_00	PINEY BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS	Not meeting threshold	Cause	2022	N		Low	5	5,4C	
DCTPY01R_00	PINEY BRANCH	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,4C	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTPY01R_00	PINEY BRANCH	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Not meeting threshold	Cause	2022	N		Low	5	5,4C	
DCTPY01R_00	PINEY BRANCH	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4C	
DCTSO01R_00	SOAPSTONE CREEK	RIVER	Primary Contact Recreation	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	
DCTSO01R_00	SOAPSTONE CREEK	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	2014	N		Medium	5	5,2	
DCTSO01R_00	SOAPSTONE CREEK	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTSO01R_0 0	SOAPSTONE CREEK	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	HABITAT ASSESSMENT	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained, according to new assessment method		5	5,2	
DCTSO01R_0 0	SOAPSTONE CREEK	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Fully Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,2	
DCTSO01R_0 0	SOAPSTONE CREEK	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,2	
DCTTX27R_0 0	TEXAS AVENUE TRIBUTARY	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A	
DCTTX27R_0 0	TEXAS AVENUE TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	DDD (DICHLORODIPHENYLDICH LOROETHANE)	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTTX27R_0 0	TEXAS AVENUE TRIBUTARY	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A	
DCTTX27R_0 0	TEXAS AVENUE TRIBUTARY	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A	
DCTTX27R_0 0	TEXAS AVENUE TRIBUTARY	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	2014	N		Low	5	5,4A	
DCTTX27R_0 0	TEXAS AVENUE TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified
DCTTX27R_0 0	TEXAS AVENUE TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4A	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTTX27R_00	TEXAS AVENUE TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DDD (DICHLORODIPHENYLDICHLOROETHANE)	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified
DCTTX27R_00	TEXAS AVENUE TRIBUTARY	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DIELDRIN	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified
DCTWB00R_01	WATTS BRANCH DC (Lower) Segment 01	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCTWB00R_01	WATTS BRANCH DC (Lower) Segment 01	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4A	
DCTWB00R_01	WATTS BRANCH DC (Lower) Segment 01	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4A	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTWB00R_ 01	WATTS BRANCH DC (Lower) Segment 01	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCTWB00R_ 01	WATTS BRANCH DC (Lower) Segment 01	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4A	
DCTWB00R_ 01	WATTS BRANCH DC (Lower) Segment 01	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DIELDRIN	Not meeting criteria	Cause	1998	N		High	5	5,4A	Impairment Verified
DCTWB00R_ 01	WATTS BRANCH DC (Lower) Segment 01	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	2022	N		High	5	5,4A	New candidate for category 5
DCTWB00R_ 02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4C, 4A,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTWB00R_02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Primary Contact Recreation	Not Supporting	ESCHERICHIA COLI (E. COLI)	Not meeting criteria	Cause	1998	N		Medium	5	5,4C, 4A,2	
DCTWB00R_02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4C, 4A,2	
DCTWB00R_02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4C, 4A,2	
DCTWB00R_02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	ARSENIC	Not meeting criteria	Cause	2022	N		High	5	5,4C, 4A,2	New candidate for category 5
DCTWB00R_02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Primary Contact Recreation	Not Supporting	PH	Meeting criteria	Meeting Criteria		Y	Applicable WQS attained; based on new data		5	5,4C, 4A,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTWB00R_ 02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	POLYCHLORINATED BIPHENYLS (PCBS)	Not meeting criteria	Cause	1998	N		High	5	5,4C, 4A,2	
DCTWB00R_ 02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Protection and Propagation of Fish, Shellfish and Wildlife	Not Supporting	HABITAT ASSESSMENT	Not meeting threshold	Cause	2022	N		Low	5	5,4C, 4A,2	
DCTWB00R_ 02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	DIELDRIN	Not meeting criteria	Cause	1998	N		High	5	5,4C, 4A,2	Impairment Verified
DCTWB00R_ 02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Primary Contact Recreation	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4C, 4A,2	
DCTWB00R_ 02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Secondary Contact Recreation and Aesthetic Enjoyment	Not Supporting	TOTAL SUSPENDED SOLIDS (TSS)	Not meeting criteria	Cause	1998	N		Low	5	5,4C, 4A,2	

Assessment ID	Assessment Name	Waterbody Type	Designated Use	Designated Use Attainment	Parameter Name	Parameter Attainment	Parameter Status	Cycle First Listed	Deli sted	Delisted Reason	TMDL Priority Ranking	EPA IR Cat	Mulit IR Cat	COMMENT
DCTWB00R_ 02	WATTS BRANCH DC (Upper) Segment 02	RIVER	Protection of Human Health related to Consumption of Fish and Shellfish	Not Supporting	PCBS - FISH CONSUMPTION ADVISORY	Not meeting criteria	Cause	2022	N		Low	5	5,4C, 4A,2	

Appendix 3.5 303(d) Program New Vision: Stakeholders Engagement Strategy and Prioritization Strategy

District Department of Energy and Environment (DOEE)

303(d) Program New Vision

Stakeholders Engagement Strategy (SES)

(2016-2022)

April 2016

DEPARTMENT OF ENERGY & ENVIRONMENT
GOVERNMENT OF THE DISTRICT OF COLUMBIA

Summary

- A stakeholder is an individual or group with an interest in the District's Department of Energy & Environment's (DOEE's) broader environmental management mandate, stewardship, and services.

- DOEE has a large and diverse stakeholder group. DOEE therefore recognizes that it should engage with different stakeholders for different reasons and that it should enable diverse interests and individuals to contribute to DOEE policy making, including engaging in constructive dialogue in which all voices have an opportunity to contribute.

- This stakeholder engagement strategy outlines DOEE's approach to communicating and working with stakeholders for water resource related topics. It is an integral part of developing an understanding of its stakeholders. This helps DOEE shape regulations and future plans and priorities.

- Stakeholder engagement is a key part of DOEE's regulatory activities and an important contributor to DOEE's mandate and responsibility to the residents of the District of Columbia.

- DOEE also recognizes the level of interest and the degree of influence on the agency varies among its stakeholders. Because different issues have different stakeholders, DOEE engagement will vary as appropriate. As issues emerge, DOEE will develop new relationships to better manage change in service provided to District residents.

- DOEE will publish this draft *Engagement Strategy* to solicit feedback. Public comments will be incorporated into Section 6 of this draft strategy to ensure stakeholders' contributions are not just visible, but are also items for implementation and further action.

1. Introduction

As part of the implementation of the "*Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act (CWA) Section 303(d) Program,*" the District's Department of Energy & Environment (DOEE) is required to develop a strategy to "engage" stakeholders[1]. This "Stakeholder Engagement Strategy" outlines DOEE's engagement framework, consultation approaches, and includes metrics by which outcomes will be measured.

1.1 Background[2]

On December 5, 2013, the U.S. Environmental Protection Agency (EPA) announced a new collaborative framework for managing CWA 303(d) program responsibilities, entitled *"A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program[3]"* (Vision). This new Vision reflects the successful collaboration among states and the EPA, which began in August 2011. The vision enhances the overall efficiency of the CWA 303(d) program. For example, it encourages states to focus attention on priority waters. It also provides states with the flexibility to use available tools beyond Total Maximum Daily Loads (TMDLs) to effectively restore and protect water quality. There is no "one size fits all" approach to restoring and protecting water resources; flexibility allows each state, including the District of Columbia (the District), to more efficiently develop tailored strategies to implement their CWA 303(d) Program responsibilities within the context of its own water quality goals.

Accountability is ensured through new CWA 303(d) Program measures by which the success of implementation efforts is tracked. This ensures restoration and protection of the nation's streams, rivers and lakes is achieved. While the Vision provides a new framework for implementing the CWA 303(d) Program, it does not alter state and EPA responsibilities or authorities under the CWA 303(d) regulations.

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[1] Within the meaning of this strategy, a stakeholder is an individual or group with interest in DOEE, its mandate and its services as it implements the CWA 303(d) Program, including Sections 319 and 305. Stakeholder engagement is a key part of DOEE's regulatory activities and an important contributor to DOEE's objectives. See Appendix B for a list of categories of DOEE stakeholders. See Appendix C for a "Snapshot of the District of Columbia's community."

[2] http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/programvision.cfm

[3] A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program (PDF)

2. Stakeholder Engagement Framework

2.1 Definition of Stakeholder Engagement

Stakeholder engagement is the process of involving people in the decisions that affect their lives. It lends transparency to the process and increases accountability. It illustrates the value of stakeholders and provides them with a sense of ownership and shared responsibilities for decision making. More importantly, stakeholder engagement helps build trust in the decisions DOEE makes consistent with its mandate.

Stakeholder engagement is a key part of DOEE's plan to deliver on the six goals of the Vision. DOEE will use collaboration, partnerships and innovative media initiatives to bring this plan to fruition.

2.2 The spectrum of stakeholder engagement[4]

The International Association of Public Participation (IAP2) is the gold standard framework for best management practices in planning public engagement in a decision making process. A standard approach in the IAP2 framework is that the level of engagement is determined from within the best practices spectrum. Informing is at one end of the spectrum; empowerment is at the other (Fig. 1).

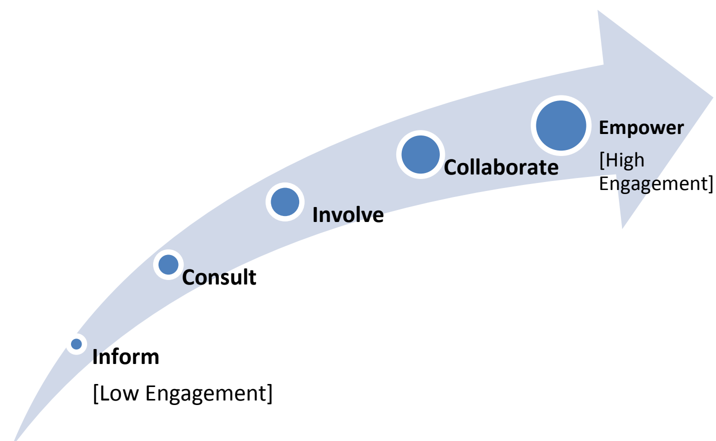

Figure 1: A diagrammatic representation of IAP2 Public Participation Spectrum.

The meaning of each level of participation in the spectrum is as follows:

- **Informing:** takes place when a decision has already been made or action is required, and the stakeholders are being informed to ensure that those affected are aware of the facts.
- **Consultation:** learning about stakeholders' views.
- **Involving:** a deepening of the consultation process, i.e., using stakeholders as advisors on an ongoing basis.
- **Collaboration:** working in partnership with the stakeholders to reach a decision.
- **Empowerment**: putting decision-making responsibility in the hands of the stakeholders.

[4] https://www.iap2.org.au/documents/item/84

In all engagement processes, DOEE will lead in determining the level of stakeholder participation. See appendix A.

3. Principles of Stakeholder Engagement

The following principles guide DOEE's approach to stakeholder engagement:

1. **Transparency:** Engagement should be clear in scope and purpose.
2. **Consistent communication:** Engagement should promote dialogue and enable genuine discussion. It should be supported by timely and accurate information, providing a space to weigh options and develop a common understanding.
3. **Enhanced understanding of program objectives:** Ensuring stakeholders are well informed increases the probability decisions in a consistent manner, rooted in scientific understanding.
4. **Influence:** Engagement should be reflected in outcomes; stakeholders should be able to identify the impact of their involvement.
5. **Inclusiveness:** Engagement should be accessible and balanced; it should capture a full range of values and perspectives. Mechanisms and frameworks that support an accessible and inclusive engagement program include:

    - Stakeholder Advisory Panel;
    - District government inter-agency forums;
    - Regularly scheduled meetings with federal agencies;
    - A range of avenues for the public to provide feedback on new policies and projects;
    - Workshops with local schools and organizations;
    - A network of neighborhood service centers that provide information on current state of engagement;
    - Targeted outreach to the broad range of cultural groups in the District; and
    - Platforms to facilitate online engagement.

These principles are informed by the IAP2 core values[5] and reflect DOEE's values of quality, partnership, integrity, and respect.

DOEE will:

1. Ensure engagement is timely, accessible, and consistent;
2. Undertake engagement activities to overcome barriers to stakeholder participation and build their capacity play a role in the decision-making process.
3. Review and evaluate, with the stakeholders, the effectiveness of this engagement strategy.
4. Implement any statutory consultation required by the District or federal laws.

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[5] http://www.iap2.org/?page=A4

4. Strategy Goal and Objectives

4.1 Goal

To ensure that DOEE stakeholders have an opportunity to contribute to the full range of the *Section 303(d) Vision Program* goals[6] (engagement, prioritization, protection, integration, alternatives, and assessment, including evaluation of accomplishments) in a manner that meets their needs.

4.2 Objective

To ensure a stakeholder's opportunity to participate is meaningful and effective.

Specific engagement objectives include:

1. Providing opportunities for stakeholders to participate in DOEE's decision-making process to ensure outcomes that benefit District residents;
2. Building a strong foundation for understanding and working with stakeholders to promote confidence in DOEE's decision-making process;
3. Developing and sustaining partnerships and utilizing modern approaches to empower stakeholders to achieve the Section 303(d) Long-Term Vision goals.

5. Stakeholder Engagement Approaches

DOEE will offer a range of opportunities and activities for stakeholders to provide feedback to help inform and improve DOEE's environmental decision-making, policies and actions.

Specific engagement opportunities and activities include:

1. Stakeholder meetings: workshops, seminars, talks, conversations, community and/or local events, drop-in sessions, and roundtables.
2. Public exhibitions, etc.
3. Information sharing using traditional and new media, e.g., websites, social media, and public libraries).
4. Online consultation portal.
5. Stakeholder/community reference groups.
6. Advisory panels, non-governmental organizations (NGOs) fora, and outreach to volunteers and other interest groups.
7. High school/college outreach workshops.
8. Stakeholders/community satisfaction surveys.
9. Notifications/signage.
10. Neighborhood service centers and community centers.

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[6] http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/vision_303d_program_dec_2013.pdf

6. This Strategy's Priorities[7]

DOEE's specific priorities to make sure that the new Vision's stakeholder engagement goal is realized in the District include the following:

1. Establishing a Stakeholder Advisory Panel (SAP).
2. Strengthening partnerships.
3. Holding community forums or open houses.
4. Providing support and services to stakeholders (e.g., gathering a task force to target a specific, ongoing issue).
5. Creating volunteer opportunities.
6. Giving public presentations.
7. Getting the word out.
8. Letting someone else open the door for us (DOEE).
9. Inviting the community to contact us (DOEE).
10. Performing stakeholder surveys to evaluate achievement and progress.
11. Developing a DOEE policy on stakeholder engagement.
12. Strengthening data collection, data quality, utilization and sharing.

7. Implementation

This strategy will be implemented by DOEE's Natural Resources Administration (NRA) Divisions: Water Quality Division (WQD), Stormwater Management Division (SWMD), and Watershed Protection Division (WPD). NRA will:

1. Coordinate the execution of this strategy's priorities (section 6 above) to ensure consistency and integration across programs and services offered by NRA in support of the Section 303d New Vision.
2. Deliver feedback to stakeholders on key outcomes of engagement through DOEE's existing communication protocols.
3. Ensure this strategy is integrated with the other goals of the Section 303(d) New Vision.
4. Review the strategy as necessary.

[7] See **Appendix D** for details on additional *Strategic Areas* under consideration.

Appendix A: Stakeholder Matrix on Engagement Processes

Engagement Level	Goal	Communication	What DOEE will do	Engagement Approach
INFORM	Inform or educate stakeholders.	One-way (DOEE to stakeholder – no invitation to reply).	DOEE will keep stakeholders informed.	Forums Periodic meetings Surveys Campaigns Digital media Social media Integrated Reports (IR) [issued every 2 years]
CONSULT	Gain information and feedback from stakeholders to inform decision made internally.	Limited two-way: DOEE will share documents, or ask questions and receive stakeholders' comments or answers.	DOEE will keep stakeholders informed, listen to their concerns, consider their insights and provide feedback on its decision.	Regulatory impact assessments Surveys One-to-one meetings Periodic meetings IR
INVOLVE	Work directly with stakeholders to ensure their concerns are fully understood and considered in decision-making.	Two-way or multi-way between DOEE and stakeholders. Learning on both sides, but each act separately.	DOEE will work with stakeholders to ensure their concerns are understood, to develop alternative proposals and provide feedback about how stakeholders' views influenced the decision-making.	Forums Periodic Meetings Surveys Campaigns Digital media Social media IR
COLLABORATE	Partner with or convene a network of stakeholders to develop mutually agreed solutions and joint plan of action.	Two-way or multi-way: Learning, negotiation and decision-making on both sides. Stakeholders work together to take action.	DOEE will look to stakeholders for direct advice and participation in finding and implementing solutions to shared challenges.	Projects; Memorandum of Understanding (MOU), IR; Memorandum of Agreement; Joint Funding Agreement; Grants; etc.
EMPOWER	Delegate decision-making on a particular issue to stakeholders.	Stakeholders have formal role in decision-making or decision-making is partly or wholly delegated to stakeholders.	DOEE will implement what stakeholders decide.	Partnerships IR

Appendix B: Categories of DOEE Stakeholders

Category	Sub-category
Employee	Senior Management Staff Consultants Staff Forum
Customer	Engineers Scientists Consultants District of Columbia Building Industry Association (DCBIA) District of Columbia Water and Sewer Authority (DC Water) Companies Public
Technical Services Providers	Vendors of materials/ services Agencies, companies, etc. Consultants/engineers
Government and Regulators	Federal government regulators (e.g., EPA) Surrounding local government departments (e.g., DC Water)
Political	Federal Government • United States Congress DC Government • Council of the District of Columbia (DC Council) • Executive Office of the Mayor (EOM)
Partners	Local Authorities (e.g., Prince George's County) Other Government Departments Awarding Organizations
Local District Wards and Communities	Community/Ward Representatives/Leader Community Job Training Centers (e.g., THEARC) Coordinators
Academic	Universities • University of District of Columbia (UDC) • University of Maryland (UM) Approved training providers (e.g., US Army Corps of Engineers)
Media	Print Broadcast Digital (Bloggers, etc.)
Industry and Trade Associations	DCBIA
Local Non-Governmental Organizations	Anacostia Riverkeeper Potomac Riverkeeper Anacostia Watershed Society (AWS) DC Environmental Network Anacostia Watershed Citizens Advisory Committee (AWACS)
National Non-Governmental Organizations (with Chapters in the District)	Earthjustice Natural Resources Defense Council (NRDC)
Non-Governmental Organizations (with Specific Regional Mandates)	Interstate Commission on Potomac River Basin (ICPRB) Metropolitan Washington Council of Governments (MWCOG)
Others	To be identified

Appendix C: A Snapshot of the District's Community[8,9]

Category	Description
National/ International Stakeholders Nexus	District of Columbia: • Has a total land area of 69 square miles. • Is the nation's (United States of America's) capital and is home to the three branches of US Federal Government (The Legislature (the House and the Senate; the Judiciary; and the Executive (under which are 16 Departments and approximately 121 agencies and quasi-agencies)). The federal footprint is approximately 30% of the total physical land area (21 square miles). The District also hosts 187 accredited foreign embassies. • Is home to over 658,000 residents and provides over 760,000 jobs. Including visitors and students, it is estimated that there are more than one (1) million people in the District during the day. • Is one of the fastest growing local government areas in Washington Metropolitan Area (WMA) in terms of residential population in the last 10 years. The July 2014 population estimate was 658,893 people. • It is also home to many national museums, creative and performing arts, and businesses. • Is the Headquarters of the United States Environmental Protection Agency (EPA). • The District bequeathed the "Daily Means Daily" mantra to the nation following the *U.S. Court of Appeals for the D.C. Circuit in Friends of the Earth, Inc. v. EPA, et al., No. 05-5015, (April 25 2006,)*).
Demographic Profile	• Median age of 33.8 years – some 2.5 years younger than the metropolitan area average. • Nearly half of city residents are aged between 18 and 44 years, compared to less than 37% in all of the United States (The 2010 Census). • 82 % of city residents live in family households with a partner and/or children or other relatives or non-relatives; over 17.7% of city residents live alone in one-person households. • 25% of city residents are currently attending an educational institution, including more than one (1) in 7 of those aged 15 and over undertaking a postsecondary course. • 55% of residents have a bachelor degree or higher and 24 % of the city resident workforce work is in a professional occupation.
Cultural Diversity	• 14% of city residents were born overseas. Residents born in Africa now comprise 2.5 % and Asia another 2.5 % of the population of the city, respectively. Currently, nearly 17 % of the city workforce was born overseas. • 18 % of the resident population speaks a language other than English. Apart from English, the most common languages spoken at home are Spanish, French, Chinese, Korean and Tagalog.
Residents, Workers and Transportation	• 66 % of residents who work do so at a location within the city. • 63 % of households in the city own a car, compared to 94% for the WMA. • The number of walk-to-work workers increased by 2.5 % and those bicycling has gone up by 2.3 % in the last 5 years.
Housing	• 42% of the city households own their dwellings (the 2010 Census).

[8] Most of the data and information were provided by DC Office of Planning (DCOP) on 06/12/15 (Courtesy: Dr. Joy Phillips).
[9] http://quickfacts.census.gov/qfd/states/11000.html

Appendix D: An Expanded "Low Hanging Fruit" Version of the Strategic Direction

1. Involving stakeholders in the planning process.
   During the design and development of problem-solving projects, WQD, SWMD and WPD personnel will engage key stakeholders as follows: holding focus groups and meetings, convening steering committees, and conducting surveys, etc. In meetings, conversations and surveys, DOEE wants to focus on getting the stakeholders talking about what they see as local resources as well as local problems and suggested responses. The goal is to inform program design and build a base of long-term support – based on trust; shared responsibility for decisions or actions; come up with solutions; cost-saving; improved working relationships; and enhanced communication and coordination.

   "Stakeholders need to be involved at each stage of the watershed planning process. Their knowledge of local social, economic, political, and ecological conditions provides the yardstick against which proposed solutions must be measured. Also, the goals, problems, and remediation strategies generated by stakeholders define what's desirable and achievable. Weaving stakeholder input, legal requirements, and resource protection strategies into an integrated tapestry for managing surface water and groundwater resources is what the watershed approach is all about."

   http://www.epa.gov/owow/watershed/outreach/documents/stakeholderguide.pdf

   Objective key measure(s):

   a. DOEE developing its own version of "Outreach" Guidance and documents, or simply incorporate by reference all relevant EPA documents.
   b. Number of outreach initiatives

2. Assembling stakeholder's advisory panel.
   Adding stakeholders' voices is often useful. A "Stakeholder Advisory Board" can be an effective vehicle for adding stakeholders' voices. A "Stakeholder Advisory" board may comprise key members who meet regularly to discuss a variety of local problems and how they are being resolved. Representatives can include Riverkeepers, other environmentalists or their representatives and volunteers, thereby ensuring accountability to District citizens and residents. This added voice brings both diversity and outside perspective into the inside and helps keep DOEE grounded and focused on the stakeholders DOEE is serving.

   Objective key measure(s):

   a. DOEE assembling a "Stakeholder Advisory Board/Panel."
   b. Number of stakeholder advisory board's meetings held.
   c. Number of advisory board recommendations that are incorporated in decision making.

3. Holding stakeholder/community forums or open houses.
Some problem-solving initiatives require holding open houses to help educate the public and to brainstorm solutions to problems. These meetings are typically held in the early evening and may have open agendas or be focused on an urgent problem (e.g., the on-going dialogue with stakeholders regarding the MS4 Implementation Plan). Stakeholders may also use these gatherings to discuss other topical public issues amongst themselves. DOEE officials may also use these opportunities to answer questions or complaints, highlight successes, address issues and begin discussions on new or emerging initiatives.

Objective key measure(s):

a. Number of "open houses" held.
b. Number of invitations received by DOEE staff to attend "open houses."
c. Number of invitations sent by DOEE staff to stakeholders to attend "open houses."

4. Gathering a task force to target a specific ongoing issue.
A task force/ Tiger Team or standing committee can successfully be used to target a specific problem. For example, DOEE can create a task force to address problems associated with illegal dumping sites. At monthly meetings, members may focus on new sites, track clean-ups, and come up with a strategic plan to prevent further dumping.

Objective key measure(s):

a. Number of task force groups/ Tiger Teams constituted.
b. Number of issues raised and resolved, or not resolved.
c. Number of invitations sent by DOEE staff to stakeholders to attend "open houses."

5. Creating opportunities for volunteers.
Volunteers can strengthen bonds between DOEE and the communities it serves. Volunteers can perform tasks, conduct surveys and act as mentors or tutors to younger and budding volunteers. Some problem-solving initiatives use volunteers to identify areas in their community in need of attention (e.g., site cleanup, illegal dumping). Here in the District, volunteers have participated in removing trash from rivers in response to trash menace and the trash TMDL. They have helped remove litter and clean up schools, streets, and parks. They have also participated in DOEE's own "all-hands-on-deck" community clean-ups. These kinds of volunteer participation are great ways of making volunteers, particularly the young, learn to take responsibility in creating a healthier environmental setting not just for them, but also for the entire District community. Volunteerism also inculcates into the participants concrete skills that people like and easily support. Learned skillsets can easily be built into practical and specific problem-solving skills, which could then be extended and integrated into deepening DOEE's community outreach.

Sample "Involving Youth in your Agency Sustainability Activities" Guidance:

http://www.ca-ilg.org/document/involving-youth-your-agencys-sustainability-activities

Objective Key Measure(s):

a. Development of a clear DOEE volunteer support strategy.
b. Number of volunteer groups supported.
c. Number of volunteer activities organized by DOEE in support of, or jointly in collaboration with, volunteers.

6. Giving presentations at public meetings and agencies.
Public meetings hosted by DOEE's technical "Administrations," such as the NRA, and Environmental Services Administration (ESA), are a great place for practitioners to talk about their programs. To get stakeholder/community buy-in, the lead technical personnel give presentations about the project's goals and objectives and then invite stakeholder/community representatives to offer their views.

Objective Key Measure(s):

a. Number of presentations held.
b. Number of public meetings held.
c. Number of project's information made available online.

7. Perform stakeholders/community surveys.
A survey gathers information from hundreds and potentially thousands of stakeholders, giving planners and practitioners a detailed picture of a community's priorities, expectations, and awareness. Survey design should be simple and as readily accessible as possible. The surveys, where appropriate, should be conducted using low-cost online survey tools (e.g., http://www.surveymonkey.com) and used to evaluate impact(s) of, say, a potential decision, on DOEE's communities/stakeholders. Assessment of impact(s) on a community is a critical input in decision-making.

Sample "Making Decision Process Visible" Guidance:

http://www.ca-ilg.org/making-decision-process-visible

http://www.ca-ilg.org/sites/main/files/file-attachments/part_2_making_the_decision_process_visible_1.pdf

Objective Key Measure(s):

a. Number of surveys conducted.
b. Number of different topics on which surveys are conducted.
c. Support for analysis of survey responses received.
d. Number of survey results incorporated in decision-making and made visible.

8. Getting the word out.

DOEE can use a number of methods to share information (e.g., success stories) with stakeholders and obtain feedback. These methods include using local media, websites, newsletters, listservs, emails, public libraries, campaigns/events, new media (Facebook, Twitter, etc.). By regular sharing information with and receiving feedback from stakeholders on problem-solving strategies, alternative solutions, implementation outcomes, and other results, DOEE can demonstrate to stakeholders that it is their real partner on issues that matter to them. For example, DOEE project staff can create an online journal (or "blog"), say, "Successes and Issues in District Watersheds" (http://whatishappeninginyourdcwatershed.blogspot.com/), that details the project's successes and failures and invites stakeholders and the general public to engage in discussions.

Sample "Getting Word out" Guidance and documents:

http://www.ca-ilg.org/getting-word-out

http://www.ca-ilg.org/sites/main/files/file-attachments/part_3_getting_the_word_out_1.pdf

Samples "Providing & Storing Detailed Information" Guidance:

http://www.ca-ilg.org/providing-storing-detailed-information

http://www.ca-ilg.org/sites/main/files/part_1_no_page_numbers.pdf

Sample "Emerging Technologies" Guidance:

http://www.ca-ilg.org/sites/main/files/file-attachments/part_5_no_page_numbers.pdf

http://www.ca-ilg.org/overview/emerging-technologies

Objective Key Measure(s):

a. Number of campaigns held.
b. Creation of a website for sharing success stories.
c. Traffic/number of visitors to the website.
d. Number of issues of newsletters shared with the stakeholders/public.
e. Setting up of listserv.
f. Number of articles/advertisements in local media.
g. Number of issues/subject matter of the advertisements.
h. Development of DOEE's own guidance documents similar to the above examples.

9. Letting someone else open the door for DOEE.

To gain credibility with District wards, neighborhoods and community groups, NRA divisions will work to form relationships with respected community members and let them introduce NRA staff to their wards and neighborhoods. For example, DC Council members or neighborhood leaders should be appropriately approached and encouraged to help introduce DOEE events at their respective Wards and neighborhood events.

Objective Key Measure(s):

a. Number of "open houses" held.
b. Number of invitations received by DOEE staff to attend "open houses."
c. Number of invitations sent by DOEE staff to stakeholders to attend "open houses."

10. Inviting Stakeholders to contact DOEE.
Make staff accessible to the stakeholders and the community at large. Include contact information and/or feedback forms on websites and in brochures.

Sample "Inviting Public Input" Guidance and documents:

http://www.ca-ilg.org/overview/inviting-public-input

http://www.ca-ilg.org/sites/main/files/file-attachments/part_4_inviting_public_input_1.pdf

Objective Key Measure(s):

a. DOEE's own version of "Inviting Public/Stakeholder Input" guidance and documents.

11. Develop DOEE policy on Stakeholder Engagement and related issues.
DOEE believes that having a stakeholder engagement policy will signal agency commitment and help strengthen and improve DOEE's overall communication and involvement with its stakeholders.

Objective Key Measure(s):

a. DOEE's own version of "Inviting Public/Stakeholder Input" Guidance and documents.

12. Strengthening data collection, data quality, utilization and sharing.
Data is or will be the new currency of communicating with DOEE's stakeholders. Many of the District's stakeholders are digitally empowered. DOEE should enhance this digital empowerment by collecting and sharing high quality data with its stakeholders. Quality enhancement should occur both in the geographic and monitoring data spaces.

Objective Key Measure(s):

a. Support and develop finer-scale mapping that meet federal geospatial data standards and to improve water resources planning.
b. Support and allocate funds to acquire modern laboratory equipment with capabilities to meet both the requirements of 40 CFR Part 136 and the "Most Sensitive Methods."
c. Support the establishment of Water Quality Exchange (WQX) and Integrated Compliance Information System–National Pollutant Discharge Elimination System (*ICIS-NPDES*) data flows to facilitate both Quality Assurance/ Quality Control (QA/QC) and public sharing of water quality monitoring data.

District of Columbia
Department of Energy & Environment

303(d) Program New Vision

Prioritization Strategy
(2016-2022)

May 2016

DEPARTMENT OF ENERGY & ENVIRONMENT
GOVERNMENT OF THE DISTRICT OF COLUMBIA

Contents

Summary

As part of the implementation of the US EPA "Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act (CWA) Section 303(d) Program" (Vision), the Department of Energy & Environment (DOEE) is required to develop a prioritization strategy to express CWA 303(d) Program priorities in the context of specific District of Columbia's (District) broader, overall water quality goals and values. This strategy provides a framework for identifying high, medium, and low priority waters for total maximum daily loads (TMDL) development efforts, and alternative actions that are best suited to the broader water quality goals and values in the District.

The Vision's Prioritization goal states that "for the 2016 integrated reporting cycle and beyond, States review, systematically prioritize, and report priority watersheds or waters for restoration and protection in their biennial integrated reports to facilitate State strategic planning for achieving water quality goals."

The intent of the Vision's *Prioritization Goal* is for states, including the District, to express their Clean Water Act's Section 303(d) Program priorities in order to ensure that the available District resources are used efficiently to achieve water quality goals.

In determining priority waters for restoration and protection in the District, a "universe" is first compiled comprising of new Category 5 listings, the existing TMDLs which are earmarked for revisions (for various reasons, e.g., court order or new information, etc.), and TMDL development projects that stakeholders would like to be prioritized.

As a first prioritization step, each item in the universe's subsets is evaluated for priority ranking by using a combination of "mechanisms" and "factors." *Mechanisms* are the primary level factors that include protection of human health and aquatic life, support non-violations of the District's water quality standards, etc. - and are rated as *high*, *medium*, or *low*. *Factors* are secondary level considerations that, amongst others, examine the severity of impairment to the designated use classification(s) – and are also rated as *high*, *medium*, or *low*. Where both mechanisms and factors are rated as high, those waters would be deemed high priority. The result of this priority ranking and similar analyses are then summarized and put in a list consistent with Section 303(d) of the CWA. Impairments that are candidates for *alternative* are also annotated in the list at this stage. In the second step, the listings of ranked priorities are assigned a schedule for TMDL development based on a matrix approach. The matrix consists of six criteria: urgency, potential impact, actionable/ feasible, resources, stakeholder interest and readiness, and integration, each of which, if ranked as high earns 3 points; medium, 2 points; and low, 1 point. The points awarded are then summed up and the project that receives the highest total points is then slated as the one to move forward first. The results of both steps one and two are then consolidated into a preliminary list called "Pre-303(d) list" and made available for an initial public comments. A revised "Pre-303(d) list" following public comments is called "draft 303(d) List." Upon completion, a draft Integrated Report (IR) incorporating "draft 303(d) List" will be made available to the public for comment for 30days. If no comments are received on the "draft 303(d) List", the list will be considered final and submitted to EPA.

Consistent with this strategy, the District's overall TMDL development priority for the fiscal year (FY) 2016 through 2022 will be dominated by the need to satisfy the 2009 TMDL consent decree.

DOEE will publish this draft *Prioritization Strategy* to solicit feedback. Comments received will be considered and used to revise the document as appropriate before submittal to EPA for approval. After EPA approval this strategy will become final and implemented

1. Introduction

As part of the implementation of the "*Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program*" (Vision)[1], the Department of Energy & Environment (DOEE) is required to develop a prioritization strategy to express CWA 303(d) Program priorities in the context of specific District of Columbia's (District) broader, overall water quality goals and values. This strategy provides a framework for identifying high, medium, and low priority waters for total maximum daily loads (TMDL) development efforts, including alternative actions that are best suited to the broader water quality goals and values in the District.

1.1. Background[2]

On December 5, 2013, the U.S. Environmental Protection Agency (EPA) announced a new collaborative framework for managing CWA 303(d) program responsibilities, entitled *"A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program[3]"* (Vision). This new Vision reflects the successful collaboration among states and the EPA, which began in August 2011. The vision enhances the overall efficiency of the CWA 303(d) program. For example, it encourages states to focus attention on priority waters. It also provides states with the flexibility to use available tools beyond TMDLs to effectively restore and protect water quality. There is no "one size fits all" approach to restoring and protecting water resources; flexibility allows each state, including the District, to more efficiently develop tailored strategies to implement their CWA 303(d) Program responsibilities within the context of its own water quality goals. While the Vision provides a new framework for implementing the CWA 303(d) Program, it does not alter state and EPA responsibilities or authorities under the CWA 303(d) regulations. The Vision's Prioritization goal states:

> "*States should review, systematically prioritize, and report priority watersheds or waters for restoration and protection in their biennial integrated reports to facilitate state strategic planning for achieving water quality goals*."

Priorities are important because they provide the foundation to guide the planning and implementation of the other Vision goals. Specifically, the CWA 303(d) program priorities are essential to ensure that the available resources are used efficiently to achieve water quality goals and that allocation is not done in an ad hoc way, but in a manner respectful of the entirety of the District's water quality values.

The Vision expects states, including the District to engage their general public and stakeholders in the establishment of CWA 303(d)-related priorities. EPA also expects states and the District to articulate how input from the public is considered and addressed as part of their rationale for supporting prioritization.

2. Definition and Principles of Prioritization

2.1. Definition

Prioritization is the process of evaluating[4] a group of projects/activities and ranking them in their order of importance or urgency.

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[1] http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/vision_303d_program_dec_2013.pdf
[2] http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/programvision.cfm
[3] A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program (PDF)
[4] Evaluation is the process of taking different possible courses of action, setting them side by side and drawing a conclusion as to their respective merits.

2.2. Principles of Prioritization

Principles are statements of *values* that guide actions. Principles are used to frame a concise set of criteria which, in turn, are used to develop priorities or ranking. The following principles guide DOEE's approach to its Vision prioritization:

1. **Transparency:** Prioritization should be clear and contain robust and transparent selection criteria developed to maximize measurable water quality improvements and positive environmental impacts.
2. **Engagement:** Constructive engagement, supported by timely and accurate information containing analysis based on reliable data, enables dialogue and genuine discussions, which, in turn, increases the chance of quality *prioritization* decision-making.
3. **Resources:** Consideration of resource implications of doing a TMDL project/activity, including, but not limited to, whether or not the resource requirements of the project are within budgetary limits; the period over which resources will be needed; DOEE's institutional and technical capacity to implement the plan; and benefits.
4. **Impact:** Prioritizing TMDLs for development starts by considering the scope and severity of water pollution and risks to public health and aquatic life[5]. Also consideration should be given to whether or not the proposed TMDL development/activity has additional strategic significance or impacts (e.g., risk to threatened or endangered species).
5. **Influence:** *Priorities* should reflect input of stakeholders' involvement.
6. **Inclusiveness:** Prioritization is effective when a wide range of stakeholders are *engaged* in their diversity, uniqueness and perspective. Accounting for all these and developing a unified set of *priorities* requires balance and judgment.
7. **Time:** Prioritization is multi-dimensional, in part, because values, which are at the core of it, are. Time is the other dimension. The time dimension involves consideration of scheduling issues (such as re-programming to meet court orders) to determine what comes first, and what follows later. Timing and phasing are key factors in aligning priorities.
8. **Alignment:** TMDL development *priorities* should fit within DOEE's overall strategic water quality improvement agenda and be in accord with the new Vision goals.
9. **Implementation Potential:** Assessing the implementation potential of a TMDL project/activity is a real challenge. Three factors that are closely related to the potential for a successful TMDL project/activity implementation include the following: assessment data reliability; organizational resources readiness; consistent application of *prioritization* appraisal criteria; and uncertainty.

2.3. Prioritization Best Practices

Best practices are effective procedures that reliably tend to lead to a desired result. They are chosen to fit with goals, including what needs to be done and how. Since not each and every best practice is related to each and every issue of interest, or necessarily aimed at the same target outcomes, they should always be reviewed and updated.

The following are some best practices that apply to the District's 303(d) prioritization.

It is good practice to:

1. Give careful consideration to the criteria for prioritizing projects and agree on them in advance;
2. Systematically evaluate all potential projects at the same time - to minimize bias;

[5] **Hall, *et. al.* (2014).** An ecological function and services approach to total maximum daily load (TMDL) prioritization. Environmental Monitoring and Assessment, Vol. 186, Issue 4, pp 2413-2433.

3. Schedule priorities;
4. Allow limited priority overrides due to executive prerogative on special cases;
5. Ensure that the people impacted by priorities are informed and know what those priorities are; and
6. Review periodically the priority status of projects.

3. Strategy Goal and Objective

3.1 Goal

The strategy goal is to ensure that DOEE and stakeholders review, systematically prioritize, and report priority watersheds or waterbodies for restoration and protection in the bi-annual Integrated Report (IR) to facilitate strategic planning for achieving water quality goals.

3.2 Objective

The strategy objective is to identify where DOEE and stakeholders should focus resources for TMDLs development in fiscal year (FY) 2016 through FY2022.

4. General 303 (d) Prioritization Framework

4.1. Framework Elements

The following are examples of how the framework elements may apply to DOEE:

1. **Mechanism for Prioritization -** Protection of human and aquatic life, consent decree.
2. **Factors Considered in Prioritization -** Funding availability, indicators used in Recovery Potential Screening, pollutants/impairments, sources.
3. **Consideration of EPA National and Regional Priorities -** An explanation of how the District collaborates with the Region on prioritization and how EPA's priorities fit into its framework. This does not mean that the District must choose EPA priorities as their designations; rather the District should recognize EPA's priorities as an important factor in the prioritization process.
4. **Plan for Where the State Will Begin Work -** This could be general, and may be based on monitoring or permitting cycles, or other appropriate processes.
5. **Statement on Flexibility -** Reflecting the District's approach to changing priorities.
6. **Description of Shifts or Changes -** Evaluate the past prioritization scheme compared to what the District will be doing under the new Vision by explaining what is different or new compared to what stays the same.

4.2. Other Considerations

1. **Public Engagement Approach -** An explanation regarding how the District will involve stakeholders in the process and share the final designated priorities. At a minimum, priorities should be clearly identified in the 2016 Integrated Report (2016 IR) for the public to provide comments. DOEE's Stakeholders' Engagement Strategy (SES) is incorporated herein by reference.
2. **Integration Approach -** Deals with how DOEE will use a combination of District-wide programs and other on-the-ground projects to achieve water quality benefits; and the extent to which water quality improvement efforts are harmonized with other relevant District and Federal programs; namely:
    a. **When and how the District will Review and Update the Prioritization Scheme -** Assessment is a critical piece of the new Vision; the District will consider and adapt new information on the status of waters, interest and engagement from stakeholders and partners, and the effectiveness of their chosen scheme.

b. **Choice of Priority Designations -** Once the District has completed the process of determining its 303(d) priorities, the information should be included as an appendix/update to the strategy document.
c. **Availability of the Prioritization Framework to the Public -** The District plans to make the prioritization documents available to the public (via DOEE's website, public notice in the DC Register, including joint public-notice with the 2016 IR) to facilitate transparency and stakeholder engagement.

5. Detailed District's Priority and Ranking Assignment Scheme

The District assigns TMDL development priority in two main steps, namely: an *Initial Ranking and Scheduling Step,* and the *Integrated Report Step*; with each step having sub-steps as follows:

Step 1: *Initial Ranking and Scheduling Step*

a. Assessment:

Assessment identifies water bodies requiring TMDLs and consolidates these into an IR form pursuant to Sections 303(d), 305(b), 314 and 319 of the Clean Water Act.

Section 303(d) and the implementing regulations at 40 CFR 130.7 require states and the District to identify those water bodies that are not meeting surface water quality standards and to prioritize and schedule them for the development of TMDLs. The 303(d) listing process classifies waters impaired by point and non-point sources of pollutants into the following categories.

- *Category 1*: Waters with the status that all designated uses are being met.
- *Category 2*: Waters that meet some (at least three) of their designated uses, but there is insufficient data to determine if remaining designated uses are met.
- *Category 3*: Waters for which insufficient data exists to determine whether any designated uses are met.
- *Category 4*: Waters that are impaired or threatened but a TMDL is not needed. (*This category and its sub-categories may include TMDLs that may or may not need to be revised for one reason or another, including court orders, consent decrees, availability of new information.)*
- *Category 5*: Waters that are impaired or threatened and need new TMDLs to be developed. (*The development of new TMDLs is the primary driver for prioritization and ranking*.)

Section 305(b) codifies the process in which water bodies are evaluated with respect to their capacity to support designated uses as defined in each of the states'/District's surface water quality standards. These uses include aquatic life support, fish and shellfish consumption, and primary (e.g., swimming) and secondary (e.g., boating) contact recreation. Where possible, the causes and sources of use impairment are also identified.

Section 314 is mostly concerned with lakes and reservoirs and has little or no relevance in the District's assessment scheme.

Section 319 grants and State Revolving Funds (SRF) are given to watershed clean-up projects that are consistent with TMDL Program requirements.

a (i). Priority Assignment Process

The District defines its Section 303(d) list *initial* priority assignment in terms of broader programmatic primary factors (or *mechanisms*) and secondary factors (hereinafter referred to simply as *factors*).

Mechanisms are based on consideration of primary factors such as severity of impairment to the designated use classification(s) for a water body. There are also secondary factors (or simply, "*factors*") which are used to modify the initial prioritization to an overall or final prioritization. *Factors* may either elevate a water body into a higher priority group (e.g., public interest, executive prerogative needs) or reduce the priority ranking (e.g., funding availability, cleanup action in progress). Together, both mechanisms and factors help to provide structure to the prioritization process by explaining, for example, the extent or complexity of impairment. They help to describe the availability of information (e.g., monitoring data, models), and thus indicate whether or not priority decisions are made based on substantial or scanty information. At the same time, factors are meant to be:

- Flexible for each water body;
- Subject to periodic review to reflect new scientific information, newly developed water quality criteria;
- Accommodative of changing stakeholder considerations or concerns; and
- Cognizant of efficient and effective use and allocation of resources.

Mechanisms' and factors' levels are rated as *high, medium,* and *low* as briefly described below:

Mechanisms' Rating Levels and Description:

- **High level**: Includes protection of human health and aquatic life; factors supporting non-violations of the District's water quality standards, recreational use; programmatic geographic focus; funding.
- **Medium level**: Includes, partnership with stakeholders e.g., federal agencies; issue complexities; national water quality initiatives; environmental justice.
- **Low level**: Includes, a variety of technical screening tools (e.g., EPA's Recovery Potential Tool).

Factors' Rating Levels and Description:

- **High level**: Includes, funding availability; specific pollutant that is causing or contributing to water quality impairment; data availability; restoration potential.
- **Medium level**: e.g., straight-to-implementation via NPDES Permit; water quality trends.
- **Low level**: e.g., pollutant source.

A list of *mechanisms* and *factors* and their ratings that DOEE uses to prioritize District's waters, is provided in Appendix A, Table 1 and Table 2.

A generalized ranking scheme based on combining *mechanisms* and *factors* information into an initial priority designation for TMDL projects, is shown in Table 3.

Table 3: Combination of *Mechanisms* and *Factors* to assign overall priority level

		Levels of Factor(s) (Complexity/Cost/Other Considerations)		
Levels of Prioritization Mechanisms		High	Medium	Low
	High	High	High	Medium
	Medium	High	Medium	Low
	Low	Medium	Low	Low

a (ii). Rank Schedule Assignment Process

This strategy uses a prioritization matrix approach to evaluate the relative order of importance of candidate TMDL development projects by deriving a criteria-based numerical value for the priority (rank) of each project or activity. See Appendix B.

b. Pre-303(d) List development

Pre-303(d) list is developed by consolidating *priority* and *ranking/ scheduling* information into a single list. The list will be shared with stakeholders. The comments received, and any additional information will be considered and the Pre-303(d) list may be revised, as appropriate. Stakeholders can identify specific projects of interest through a process outlined in Appendix F. The revised Pre-303(d) list will be used to develop the *draft 303(d) list* to be incorporated into the draft Integrated Report.

Step 2: *Integrated Report Step*

Upon completion, the draft IR incorporating the revised Pre-303(d)[6] list will be made available to the public for comment. If a comment is received on the priority and schedule assignment, consultation, or in some cases the prioritization matrix scheme (Appendix B), will be used to resolve the issue(s). If no comments are received on the "draft 303(d) List", the list will be considered final and will be submitted to EPA.

Appendix C shows a detailed process flow diagram (scheme) of the two steps discussed herein. The diagram also indicates that stakeholder input is considered in the prioritization process.

6. Changes and Shifts from Past Efforts

6.1. Past TMDL Development Efforts in the District

Before the Vision, the District managed its TMDL development priority process based on "Pace" framework; consent decree requirements; and to meet the Chesapeake Bay (Bay) TMDL Program needs.

6.1.1. The "Pace" Framework

"Pace" refers to the number of TMDLs that needed to be established consistent with national policy[7], i.e. generally within 8-13 years of listing of a waterbody as impaired. Under the "pace" framework, the District's priority was based on human health concerns, risk to aquatic life, programmatic needs (e.g., waste load allocations needed for permits), and availability of EPA-approved models and other technical

[6] A revised "Pre-303(d) list" that is incorporated in the IR is called a "draft 303(d) List."

[7] Perciasepe, R. 1997. New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs). http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/ratepace.cfm. *Last Accessed June 2011*. *Last Accessed June 2015.*

tools. Also within the "pace" framework, high priority TMDLs are typically developed within two years, medium priority within two to five years, and low priority more than five years.

Issues with the "pace" framework include the following:

1. It fails to properly reflect significant variability in types of TMDLs, or state/District listing methods.
2. It does not give credit to more robust TMDLs that better support implementation and water quality outcomes, i.e., "implementation-ready."
3. It does not take into account water quality improvement (output vs. outcome).
4. It improperly conveys the notion that states and the District require litigations to drive TMDLs development; i.e., the development of new TMDLs will not occur without litigation.
5. It incorrectly implies that as historic litigation driven TMDL consent decrees taper off, that TMDL "pace" (i.e. rate at which at which TMDLs are developed) will diminish.
6. It puts less emphasis on robust consultation of stakeholders and systematically incorporating their views in TMDL development process.
7. It places little emphasis on the integration among the CWA programs (303(d), 305(b), 314 and 319), or other collaborations.
8. It is weak in flexibly aligning TMDLs development with available resources.

DOEE is working collaboratively with stakeholders and EPA to develop strategies for each of the six Vision goals to address these issues – in order to improve the TMDLs development environment in the District.

6.1.2. Consent Decree

From FY2010 through FY2022, DOEE set its TMDL work load priority to revisions to satisfy the requirements of the settlement agreement reached between EPA and Anacostia Riverkeepers, Friends of the Earth, and Potomac Riverkeepers (Case No.: 1:09-cv-00098-JDB of January 15, 2009) that certain District TMDLs did not have a daily load expression established as required by *Friends of the Earth vs. the Environmental Protection Agency, 446 F.3d 140, 144* (D.C. Cir. 2006). The consent decree deadline is January 1, 2017.

Meeting consent decree dates remain a top priority in the District.

6.1.3. The Chesapeake Bay (Bay)TMDL Program Framework

The Bay TMDL is required under the federal Clean Water Act and responds to consent decrees in Virginia and the District of Columbia from the late 1990s. It represents a keystone commitment of a federal strategy to restore and protect the Bay, and covers approximately 64,000-square-mile watershed that includes all the jurisdiction partners (the District of Columbia and large sections of six states: Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia.

The TMDL set limits that are necessary to meet applicable water quality standards in the Bay and its tidal rivers. The limits (for total nitrogen (TN), total phosphorus (TP), and sediment) are based on state-of-the-art modeling tools, and involve extensive monitoring data, peer-reviewed science, and close interaction with jurisdiction partners.

Because the Bay TMDLs are an important part of the District's water quality improvement strategy, no changes are expected on the District's commitments to the Bay TMDL programs and efforts.

6.2. Shifts and Changes

This strategy shifts the prioritization process from past practice in the following ways:

1. It places greater emphasis on systematic coordination of watershed and Municipal Separate Storm System (MS4) implementation action plans (collaborative non-point source management and implementation plans) by:
    a. Incorporating 319 Program elements into TMDL implementation plans (Appendix D).
    b. Programmatic needs (e.g., waste load allocations needed for MS4 permits).
    c. Increased number of stakeholder meetings to discuss and review water quality improvement (e.g., meeting stakeholders to review the District's performance against the Bay commitments, MS4 implementation plans).
2. It enhances the current 303(d) list development and TMDL development priority planning process by incorporating a new two-step public solicitations and notices:
    a. Step 1- which involves an initial publication of a *Pre-Draft 303(d) List* for public comment gives stakeholders a chance to familiarize themselves with what the 303(d) list will look like. It also ensures that stakeholders are made part of the 303(d) process as early as possible.
    b. Step 2 - which comprises using initial comments received following the publication of the *Pre-Draft 303(d) list* to refine the draft IR, provides stakeholders a second opportunity to re-engage, and also to verify that their views have been considered.
3. It includes an *alternative* provision, which allows for "*direct-to-implementation*" projects. This makes it easier to deal with those impairment cases where the development of a TMDL would be inappropriate.
4. It introduces a pathway to "*direct prioritization*" in which stakeholders can petition the Director of DOEE in special cases to have a project included in the priority list at any stage in the process (Appendix F). This provides additional opportunities to stakeholders to engage management on specific priority outcomes. Stakeholders can submit their priorities of interest(s) at any time, however, they will only be considered for the next IR.

7. Statement on Flexibility

This prioritization strategy term runs from 2016 to 2022 and will be flexible in the following respects (to account for new listings in the intervening period before 2022, including court orders and consent decrees, exercise of executive prerogative, and/or local public demand):

1. Aware that the development of this prioritization strategy in support of the Vision in the District will NOT be completed in time for adoption for the 2016 Listing Methodology, DOEE will:
    a. Include language in the 2016 Listing Methodology to recognize the shift in focus to the Vision's new prioritization approach; and that the changes that emerge following the adoption of the Vision's new prioritization approach will be applied in full in the 2018 listing/delisting.
        - The rationale: At this time, the District's TMDLs development priority is dominated by the need to satisfy the consent decree (see Appendix E). Under this scenario, it is clear that even if the District were to use the Vision prioritization approach, the final priority outcome would not change.
2. New 303(d) listings concerning pollutants that threaten human health and aquatic life will be added and prioritized in each IR's cycle.

3. Applicable new federal regulations, criteria or guidance will be incorporated as they become available. For waters with impairments related to new national and regional concerns, monitoring and assessment will be adjusted and, if necessary, re-prioritized to protect and restore the District's waters.

4. Adaptive management:
   In consultation with stakeholders and EPA, DOEE will incorporate the principles of adaptive management so that lessons learned are used to inform the next steps of prioritization plans.

8. Plan for Where the District Will Begin Work

In order of priority, DOEE will begin work by addressing TMDLs:

1. That are subject to court order deadlines or consent decree agreement(s);
2. TMDL projects in which DOEE's and EPA's national and/or regional priorities intersect and where opportunities for collaboration exist.

Collaboration enhances efficiency and resources mobilization, and helps ensure that successful restoration will be more likely.

9. Implementation

This strategy will be implemented by DOEE's Natural Resources Administration (NRA) Divisions: Water Quality Division (WQD), Stormwater Management Division (SWMD), and Watershed Protection Division (WPD). Implementation will be coordinated:

1. To ensure prioritization consistency and integration across (CWA's 303(d), 305(b), and 319) programs in support of the new Vision;
2. To provide feedback to stakeholders on key outcomes of prioritization through robust engagement and other DOEE's existing communication protocols.

10. This Strategy's Priorities

This strategy's priorities include:

1. The District's FY2016-to-FY2022 Priority List (Appendix E).
2. Anacostia River Watershed in the District as the geographic focus for TMDL development.
3. Improving DOEE's data infrastructure by developing:
   - Data Management Plan.
   - Data Analysis Plan.
   - Data Sharing Plan.

APPENDICES

APPENDIX A

Table 1: Prioritization Mechanisms

	MECHANISM	MECHANISM LEVEL		
		High	Medium	Low
1.	Protection of human health and aquatic life	✓		
2.	Supporting DOEE's implementation and or revision of existing TMDLs and water quality improvement plans	✓		
	a) Court order/consent decree TMDLs			
	b) The Long-Term Control Plan (LTCP) and the Green Infrastructure (GI) projects			
	c) The MS4 TMDL Implementation Plan (MS4 TMDL-IP)			
	d) Implementation of the Chesapeake Bay TMDL WIPs			
	e) Anacostia River watershed and related restoration plan(s)			
3.	Geographic focus	✓		
	a) Anacostia River watershed			
4.	Partnerships and stakeholder interests		✓	
	a) Federal agency partnerships			
	b) Other partnerships			
5.	Issue complexity (e.g., modeling)		✓	
6.	Participation of volunteers and watershed groups		✓	
7.	National Water Quality Initiatives (NWQI)		✓	
	a) General			
	b) Specific national priorities			
	i. Nutrients			
8.	Regional priorities		✓	
	a) The Chesapeake Bay TMDLs			
9.	Protections of the District's waterbodies with sources upstream (i.e., watersheds in Maryland)		✓	
10.	Other strategic frameworks		✓	
	a) Environmental Justice (EJ)			
11.	Screening Tools			✓
	a) Recovery Potential Tool			
	b) USGS' SPARROW			
	c) WATERSCAPE			
12.	Emerging mechanisms			✓

Table 2: Prioritization Factors

	FACTOR	FACTOR LEVEL		
		High	Medium	Low
1.	Funding availability	✓		
2.	Pollutant causing impairment	✓		
3.	Available quality data	✓		
4.	Restoration potential	✓		
5.	Regulatory tools		✓	
6.	Straight to implementation		✓	
7.	Water quality and watershed related programs activities		✓	
8.	Water quality standards		✓	
9.	Water quality characteristics and trends		✓	
10.	Watershed characteristics		✓	
11.	Water quality/watershed models		✓	
12.	Pollutant sources			✓
13.	Other strategic frameworks			✓
14.	Screening tools			✓
15.	Emerging mechanisms			✓
16.	Funding availability			✓

APPENDIX B

GENERAL PRIORITIZATION MATRIX
for
Use with Stakeholders on TMDLs Development

How to Use this Prioritization Analysis Matrix

The Process:

1. As a group freely discuss all the project activities/projects that need to be prioritized.
2. Review list of activities/projects to determine relevance to disparities, reduce redundancy or duplication and clarify meaning. Consolidate activities/projects, if appropriate.
3. As a group, use the Prioritization Matrix below to rank order activities/projects. Rank activities/projects for each criterion using the following scale:

   High = 3 points; Medium = 2 points; Low = 1 point
   [This scale range is deliberately kept small because the line between high, medium, or low can be very thin]

4. Assign total points for each activities/projects.
5. Sum up all the total points for each project/activity to determine the priority score. Record the results in the provided worksheet.
6. Analyze the results and identify the top three activities/projects.
7. Continue discussions until DOEE and stakeholders achieve a consensus on the top three activities/projects.
8. Document the results of the consensus on priority, if consensus is achieved. If not, keep trying.

Criteria:

1. **Urgency:**
   a. Is this a priority project/activity that needs to be addressed in the next 1 year?
   b. Is this a priority project/activity that needs to be addressed in the next 2 years?
   c. Is this a priority project/activity that needs to be addressed in the next 3 years, or longer?
2. **Potential Impact:**
   a. Is it likely that addressing this critical issue will have a significant impact on one or more stakeholders?
   b. Is there a reason or reasons to believe you can be successful on this issue?
   c. Is it likely that addressing this critical issue will have a significant impact on one or more specific populations?
3. **Actionable/Feasible:**
   a. Are there opportunities for action to address the critical issue?
   b. Is there room to make meaningful improvement on the issue?
   c. Is this a priority issue subject to a court order/consent decree?
4. **Resources** (*funds, staff, water quality values/technical complexity interface, and expertise*)**:**
   a. Are resources readily available or likely resources can be obtained to address the critical issue?
   b. Are there stakeholder resources to work on the issue?
   c. If not, are there alternative ways to get the needed resources?
5. **Stakeholder Interest and Readiness:**
   a. Is this a critical issue identified as important by stakeholders?
   b. Are people in the community interested in the issue?
   c. Is there stakeholder definitive push to move this initiative forward?
6. **Integration:**
   a. Is there opportunity for collaboration?
   b. Is there opportunity to build on existing initiatives?
   c. Will this duplicate efforts?

Prioritization Analysis Matrix
(An Example)

<u>Issue(s) to be Ranked/Scheduled</u>:

Revision of consent decree TMDLs and their priority/ranking

<u>Goal</u>:

DOEE is collaborating with EPA and other stakeholders to revise toxic TMDLs to satisfy the requirements of the settlement agreement reached between the United States Environmental Protection Agency (EPA) and Anacostia Riverkeepers, Friends of the Earth, and Potomac Riverkeepers (Case No.: 1:09-cv-00098-JDB of January 15, 2009) that certain District TMDLs did not have a daily load expression established as required by *Friends of the Earth vs. the Environmental Protection Agency, 446 F.3d 140, 144* (D.C. Cir. 2006).

The settlement agreement requires the establishment of daily loads in District TMDLs by January 1, 2017.

Activity	Urgency	Potential Impact	Actionable/ Feasible	Resources	Stakeholder Readiness	Integration	Total Points
<u>Sample Project/Activity #1:</u> Toxics TMDLs revision	3	2	3	1	3	2	**14**
<u>Sample Project/Activity #2:</u> TSS TMDL revision.	3	2	3	2	3	3	**16**
<u>Sample Project/Activity #3:</u> Bacteria TMDLs revision	3	3	3	2	3	3	**17**

Note: High = 3 points; Medium = 2 points; Low = 1 point

Prioritization Analysis Matrix Sample Worksheet

Critical Issue: ______________________________

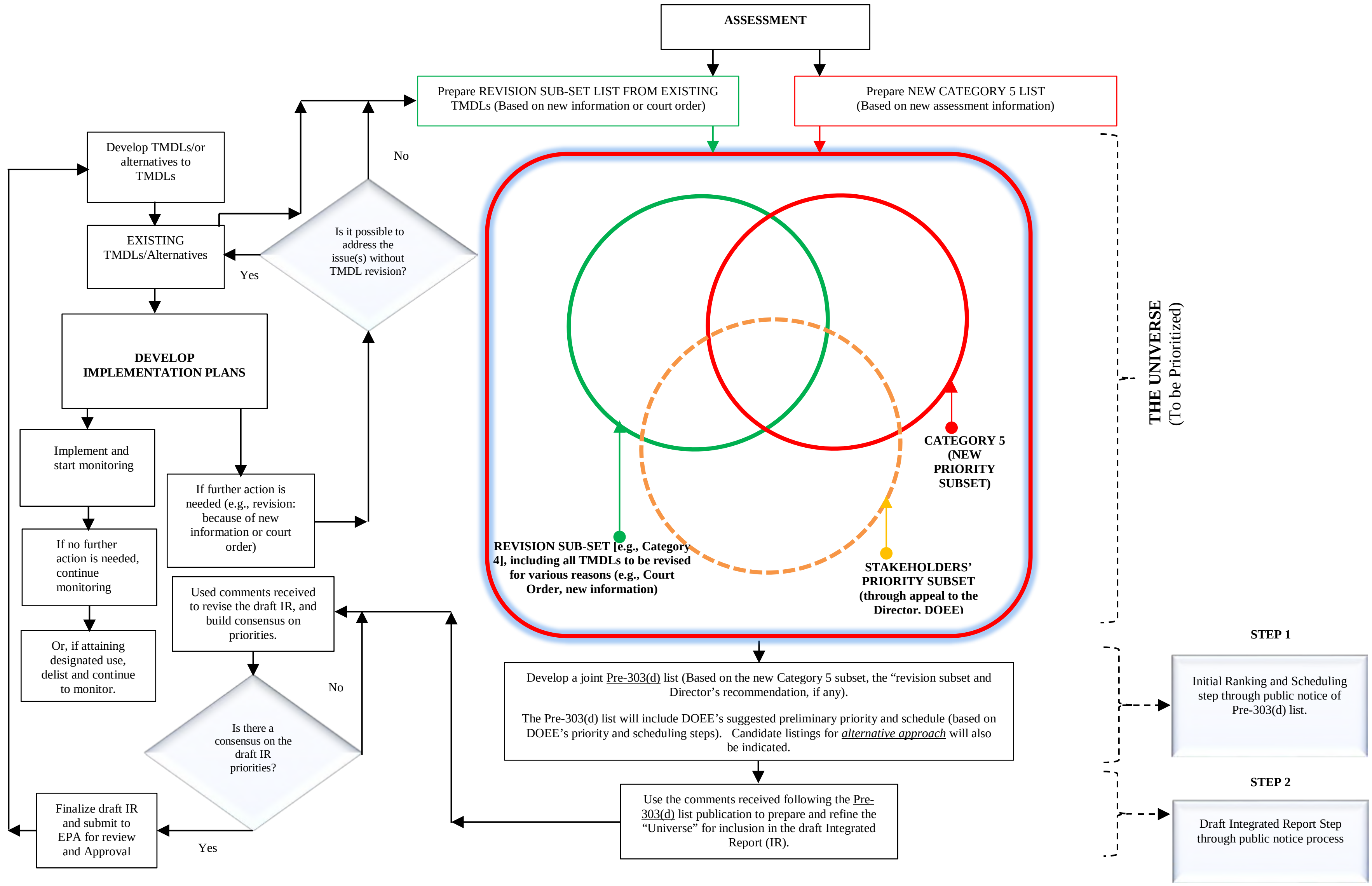
Goal: ______________________________

Activity	Urgency	Potential Impact	Actionable /Feasible	Resources	Stakeholder Readiness	Integration	Total Points
Project/Activity #1:							
Project/Activity #2:							
Project/Activity #3:							
Project/Activity #4:							
Project/Activity # n:							

Note: High = 3 points; Medium = 2 points; Low = 1 point

APPENDIX C

DOEE's PROPOSED SCHEME TO IMPLEMENT THE 303(D) NEW VISION'S PRIORITIZATION GOAL



APPENDIX D

The 319 Program Elements, Integration and Reporting

Table 4: Key Elements of an effective Section 319 & DOEE's Non-Point Source (NPS) program

Key Elements of an Effective NPS Program	How NPS addresses them in the District
1. Explicit short- and long-term goals, objectives, and strategies	• Annual grant solicitation for actions on high priority waters and District- wide stewardship goals. • 5 year goals in NPS Strategy.
2. Strengthened partnerships	• WPD process is a joint effort of multiple programs within DOEE (WQD, SWMD & WPD). • Grants are provided to local, community groups, NGOs. • WPD process is used to facilitate partnerships with federal agencies either through coordinating environmental projects for waters of common interest (e.g., NWQI, or by use of pass through funding to other agencies.
3. Integration of programs	• WPD factors in approved TMDLs. Partnerships include federal programs such as NWQI.
4. Resource allocation for protection and restoration	• Performance Partnership Agreement/ Performance Partnership Grant (PPA/PPG) annual commitments. • NPS Five-Year priority. • WPD annual process for allocating resources. DOEE's decisions regarding funding of the CWA Sections 303(d) are also considered.
5. Identification and prioritization of waters	• NPS Strategy – Five-year priority for waterbodies and actions. • b) Use WPD process for prioritizing waterbodies and identifying actions.
6. Adaptive management to achieve and maintain water quality standards	• WPD annual actions development considers previous activities and data collection and uses these to decide on best next steps to address areas of concern.
7. Efficient and effective implementation	WPD has an established process that effectively identifies priority waterbodies needing actions. Implementation occurs through: • PPA/PPG commitments • EPA grant administration • WPD/DOEE project funding mechanisms
8. Review, evaluation, and revision using measures of success	WPD process includes review and analysis step prior to annual grant solicitation. Projects are also subject to revision depending on ongoing communication and quarterly reporting.

Table 5: 303(d) New Vision's Goals & 319 Program Integration Interface

Schedule	The New 303(d) Vision Goal	How the District's WPD Addresses the Goal
2014	**Engagement** – inclusive, transparent, feedback loops	WPD selects priority watersheds based on community interest and restoration opportunities. Final WPD/Nonpoint Source (NPS) priorities and actions shared with stakeholders online.
	Assessment – initiate ongoing statewide statistical surveys	**Alternative approach:** WPD process targets water quality assessments reported in DOEE's Integrated Report and DOEE TMDL plan. Additional WPD's assessment and evaluation are also used.
2016	**Integration** – coordinate actions with other CWA programs; other agencies	WQD and SWMD participate in the WPD process. Increased internal CWA program integration including permitting, compliance, and water quality standards programs are also used.
	Prioritization – Priorities identified in the Integrated Report	WPD process provides for an annual review of priority waters and actions. Results of this review are incorporated in the NPS strategy and Integrated Report.
	Protection – Identify protection planning priorities and schedules for healthy waters consistent with the high priorities identified	Currently, no water body in District falls under the "Protection" goal. Instead, the WPD targeting process identifies water bodies for purposes of restoration. Restoration actions on waterbodies are identified in the NPS Strategy and posted on the DOEE's web page.
2018	**Alternatives –** Incorporate adaptive management and use alternative approaches to develop TMDLs implementation plans.	WPD actions are annually reviewed and are water body specific; includes elements of TMDL implementation.
2022	**Assessment** – Identify the extent of impaired and healthy waters within the District of Columbia	Assessment results and reviews are components of DOEE's Integrated Report. The Integrated Report's assessments results are subsequently incorporated in the NPS strategy.

Section 319 Reporting and Accountability

DOEE's NPS Program is accountable for implementing the District's requirements under CWA Sections 303(d) and 319. WPD demonstrates this accountability through numerous reports and obligations, including the following:

- Grants Reporting and Tracking System (GRTS)[8] reporting on WPD grants, contracts.
- PPA and PPG work plans and reports.
- Annual NPS Report.
- Integrated Report.
- Web posting of TMDLs, BMPs, Project Reports, Annual WPD priorities in grant solicitation, and other Nonpoint Source pages on DOEE's website.
- Annual EPA 319 Progress Evaluation.
- PPA and PPA work plan development and grant review process.
- Participation in annual WPD process.
- EPA review and approval of DOEE's 303(d) impaired waters list.
- Public participation:
    - Outreach events – public presentations/fairs/ Questions &Answers (Q&A) sessions at community meetings.
    - WPD water body targeting is based on active community engagement and restoration opportunities.
    - Chesapeake Bay Program participation.

[8] http://iaspub.epa.gov/apex/grts/f?p=110%3A199

APPENDIX E

Table 6: District's FY2016-to-FY2022 Priority List (The Consent Decree is incorporated herein by reference for specific schedules).

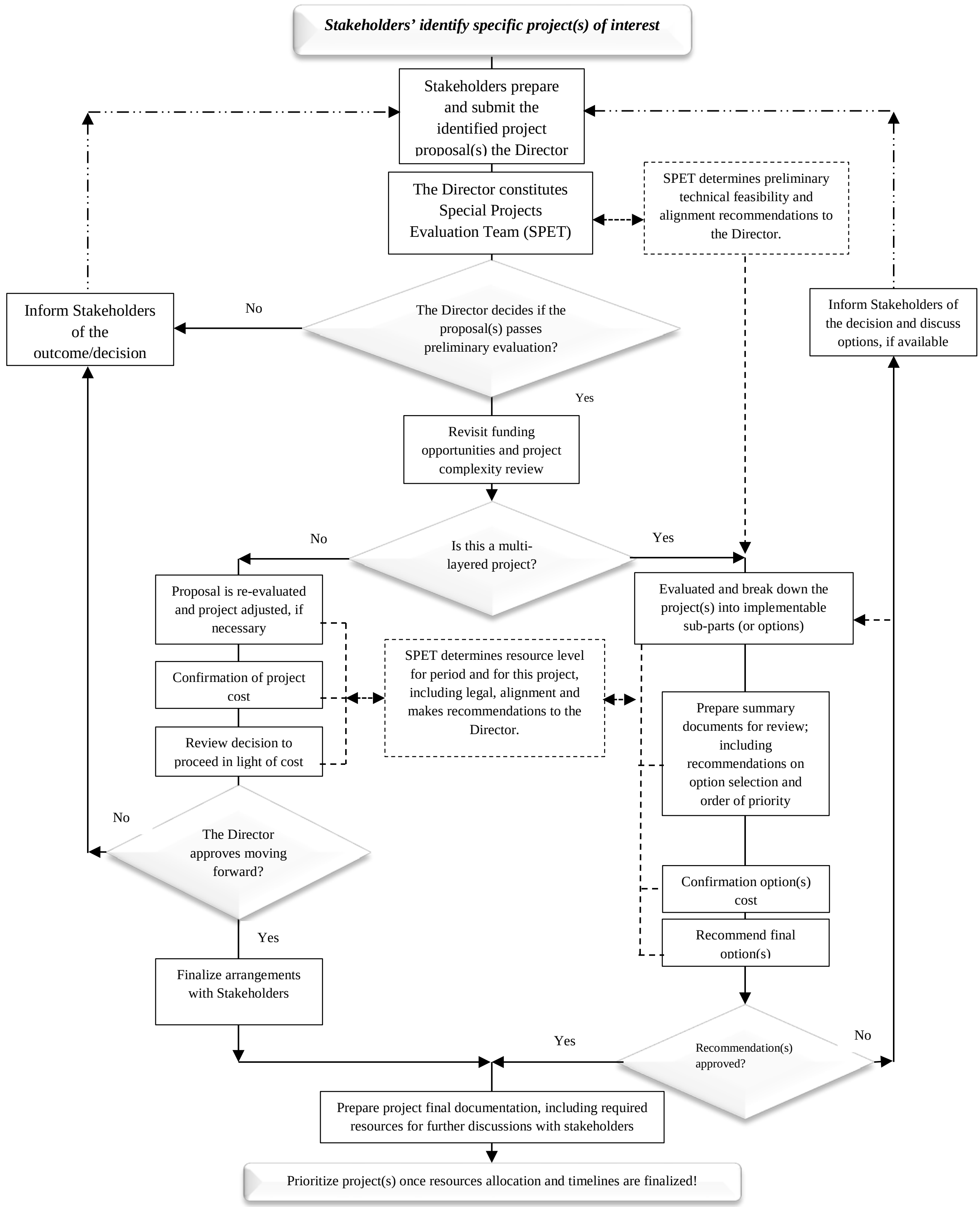
Assessment Unit ID	Assessment Unit Name	Cause Name
DCAKL00L_00	Kingman Lake	Arsenic
DCAKL00L_00	Kingman Lake	Chlordane
DCAKL00L_00	Kingman Lake	DDT
DCAKL00L_00	Kingman Lake	Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)
DCANA00E_01	Anacostia River	Arsenic
DCANA00E_01	Anacostia River	Chlordane
DCANA00E_01	Anacostia River	Copper
DCANA00E_01	Anacostia River	DDD
DCANA00E_01	Anacostia River	DDE
DCANA00E_01	Anacostia River	DDT
DCANA00E_01	Anacostia River	Dieldrin
DCANA00E_01	Anacostia River	Heptachlor Epoxide
DCANA00E_01	Anacostia River	Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)
DCANA00E_01	Anacostia River	Zinc
DCANA00E_02	Anacostia River	Arsenic
DCANA00E_02	Anacostia River	Chlordane
DCANA00E_02	Anacostia River	Copper
DCANA00E_02	Anacostia River	DDD
DCANA00E_02	Anacostia River	DDE
DCANA00E_02	Anacostia River	DDT
DCANA00E_02	Anacostia River	Dieldrin
DCANA00E_02	Anacostia River	Heptachlor Epoxide
DCANA00E_02	Anacostia River	Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)
DCANA00E_02	Anacostia River	Zinc
DCRCR00R_01	Rock Creek	Copper
DCRCR00R_01	Rock Creek	Lead
DCRCR00R_01	Rock Creek	Mercury
DCRCR00R_01	Rock Creek	Zinc
DCRCR00R_02	Rock Creek	Copper
DCRCR00R_02	Rock Creek	Lead
DCRCR00R_02	Rock Creek	Mercury
DCRCR00R_02	Rock Creek	Zinc
DCTBR01R_00	Broad Branch	Chlordane
DCTBR01R_00	Broad Branch	Dieldrin
DCTBR01R_00	Broad Branch	Heptachlor Epoxide
DCTBR01R_00	Broad Branch	Polychlorinated Biphenyls (PCBs)
DCTDA01R_00	Dalecarlia Tributary	Dieldrin
DCTDA01R_00	Dalecarlia Tributary	Heptachlor Epoxide
DCTDO01R_00	Dumbarton Oaks	Chlordane
DCTDO01R_00	Dumbarton Oaks	Dieldrin
DCTDO01R_00	Dumbarton Oaks	Heptachlor Epoxide
DCTDO01R_00	Dumbarton Oaks	Polychlorinated Biphenyls (PCBs)
DCTDU01R_00	Fort Dupont Creek	Arsenic
DCTFC01R_00	Fort Chaplin Run	Arsenic
DCTFD01R_00	Fort Davis Tributary	Arsenic

Assessment Unit ID	Assessment Unit Name	Cause Name
DCTFE01R_00	Fenwick Branch	DDT
DCTFE01R_00	Fenwick Branch	Dieldrin
DCTFE01R_00	Fenwick Branch	Heptachlor Epoxide
DCTFE01R_00	Fenwick Branch	Polychlorinated Biphenyls (PCBs)
DCTFS01R_00	Fort Stanton Tributary	Arsenic
DCTFS01R_00	Fort Stanton Tributary	Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)
DCTHR01R_00	Hickey Run	Chlordane
DCTHR01R_00	Hickey Run	DDE
DCTHR01R_00	Hickey Run	Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)
DCTKV01R_00	Klingle Valley	Dieldrin
DCTKV01R_00	Klingle Valley	Heptachlor Epoxide
DCTKV01R_00	Klingle Valley	Polychlorinated Biphenyls (PCBs)
DCTLU01R_00	Luzon Branch	Chlordane
DCTLU01R_00	Luzon Branch	Dieldrin
DCTLU01R_00	Luzon Branch	Heptachlor Epoxide
DCTLU01R_00	Luzon Branch	Polychlorinated Biphenyls (PCBs)
DCTMH01R_00	Melvin Hazen Valley Branch	Dieldrin
DCTMH01R_00	Melvin Hazen Valley Branch	Polychlorinated Biphenyls (PCBs)
DCTNA01R_00	Nash Run	Arsenic
DCTNA01R_00	Nash Run	Chlordane
DCTNA01R_00	Nash Run	Dieldrin
DCTNA01R_00	Nash Run	Heptachlor Epoxide
DCTNA01R_00	Nash Run	Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)
DCTNS01R_00	Normanstone Creek	Dieldrin
DCTNS01R_00	Normanstone Creek	Heptachlor Epoxide
DCTNS01R_00	Normanstone Creek	Polychlorinated Biphenyls (PCBs)
DCTOR01R_00	Oxon Run	Dieldrin
DCTPB01R_00	Popes Branch (Hawes Run)	Chlordane
DCTPB01R_00	Popes Branch (Hawes Run)	DDE
DCTPB01R_00	Popes Branch (Hawes Run)	Heptachlor Epoxide
DCTPB01R_00	Popes Branch (Hawes Run)	Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)
DCTPI01R_00	Pinehurst Branch	Dieldrin
DCTPI01R_00	Pinehurst Branch	Heptachlor Epoxide
DCTPI01R_00	Pinehurst Branch	Polychlorinated Biphenyls (PCBs)
DCTPO01R_00	Portal Branch	Dieldrin
DCTPO01R_00	Portal Branch	Heptachlor Epoxide
DCTPO01R_00	Portal Branch	Polychlorinated Biphenyls (PCBs)
DCTPY01R_00	Piney Branch	Chlordane
DCTPY01R_00	Piney Branch	Dieldrin
DCTPY01R_00	Piney Branch	Heptachlor Epoxide
DCTPY01R_00	Piney Branch	Polychlorinated Biphenyls (PCBs)
DCTSO01R_00	Soapstone Creek	Chlordane
DCTSO01R_00	Soapstone Creek	Dieldrin

Assessment Unit ID	Assessment Unit Name	Cause Name
DCTSO01R_00	Soapstone Creek	Heptachlor Epoxide
DCTSO01R_00	Soapstone Creek	Polychlorinated Biphenyls (PCBs)
DCTTX27R_00	Texas Avenue Tributary	Arsenic
DCTTX27R_00	Texas Avenue Tributary	Chlordane
DCTTX27R_00	Texas Avenue Tributary	DDD
DCTTX27R_00	Texas Avenue Tributary	DDE
DCTTX27R_00	Texas Avenue Tributary	DDT
DCTTX27R_00	Texas Avenue Tributary	Dieldrin
DCTTX27R_00	Texas Avenue Tributary	Heptachlor Epoxide
DCTTX27R_00	Texas Avenue Tributary	Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)
DCTWB00R_01	Watts Branch	Chlordane
DCTWB00R_01	Watts Branch	Dieldrin
DCTWB00R_02	Watts Branch	Chlordane
DCTWB00R_02	Watts Branch	Dieldrin

APPENDIX F

Process for Stakeholders to Submit TMDL Priority of their interest to the Director



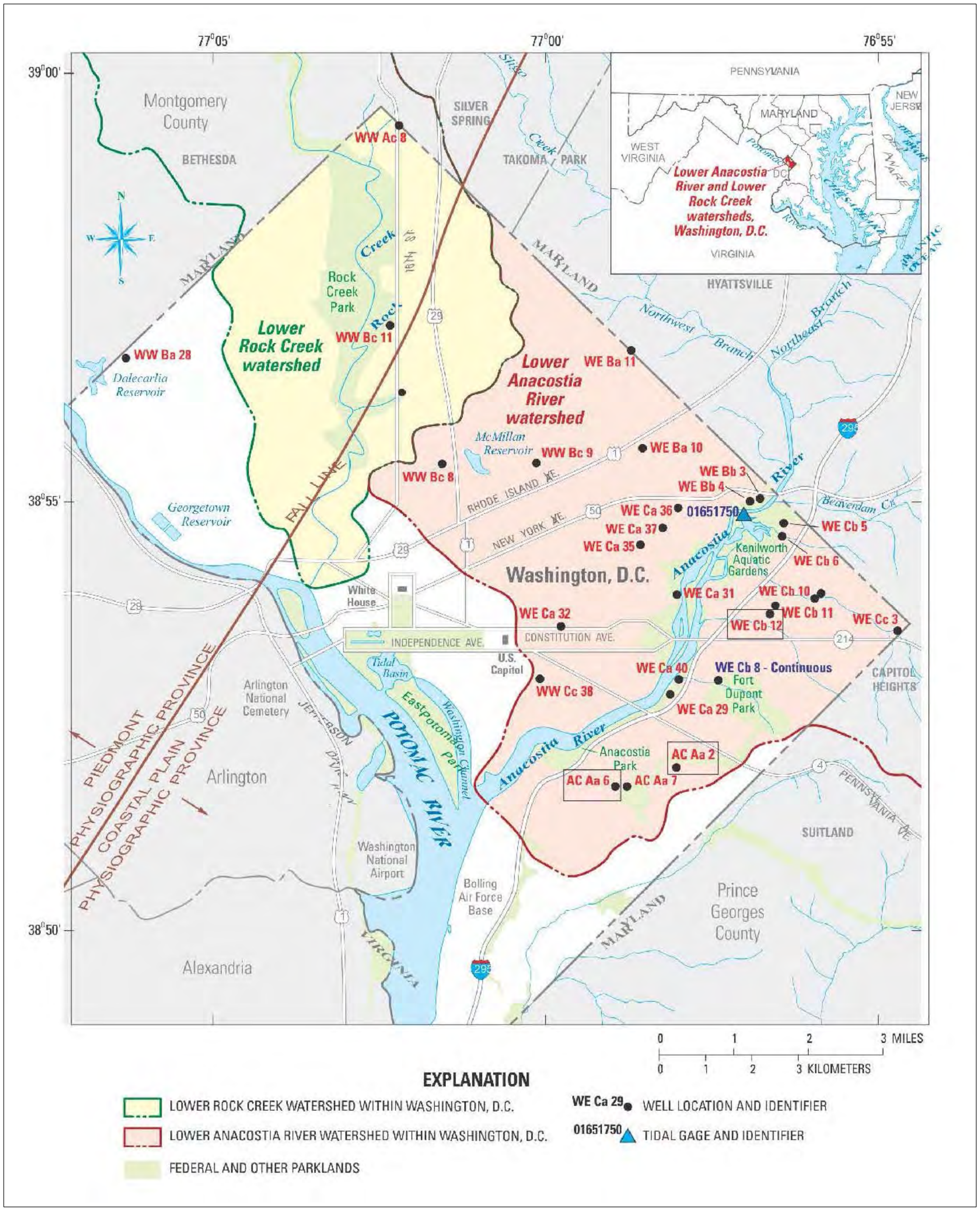
Appendix 5.1 Groundwater Monitoring Wells

USGS Site Name	USGS Site Number	DOEE Well Number	Site Location
AC Aa 1**	385225076590101	DCMW001-03	Anacostia Park Recreation Center
AC Aa 2	385157076580301	DCMW010-05	28th Street SE (near Hillcrest and Park Drives)
AC Aa 6	385138076585901	DCMW001-08	Fort Stanton Park (shallow)
AC Aa 7	385138076585902	DCMW002-08	Fort Stanton Park (deep)
AX Ac 1**	385219077002201	DCMW006-04	Earth Conservation Corps
WE Ba 9	385606076584101	DCMW012-05	Taft Recreation Center
WE Ba 10	385534076582101	DCMW007-05	Langdon Park
WE Ba 11*	385649076584201	DCMW003-08	Ft. Totten
WE Bb 3	385504076563801	DCMW001-02	New York Avenue (shallow)
WE Bb 4	385504076563802	DCMW004-02	New York Avenue (deep)
WE Ca 29	385238076581501	DCMW005-02	Anacostia Park
WE Ca 31	385355076575901	DCMW002-03	Langston Golf Course
WE Ca 32	385332076594701	DCMW001-04	Massachusetts Avenue and 7th Street
WE Ca 33	385349076592801	DCMW006-05	Reservation 210 (Maryland and F Streets)
WE Ca 34**	385245076583501	DCMW005-05	RFK near Barney Circle
WE Ca 35	385429076583601	DCMW004-04	U.S. National Arboretum Azalea Hill
WE Ca 36	385460076574801	DCMW003-04	U.S. National Arboretum Weather Station
WE Ca 37	385446076581001	DCMW005-04	U.S. National Arboretum Administration Building
WE Ca 39	385241076580901	DCMW001-14	DOEE Aquatic Education Center
WE Cb 5	385443076562801	DCMW002-02	Kenilworth Aquatic Gardens (shallow)
WE Cb 6	385443076562802	DCMW003-02	Kenilworth Aquatic Gardens (deep)
WE Cb 8	385252076572801	DCMW002-04	Fort DuPont Park
WE Cb 9**	385355076555501	DCMW001-05	Lederer Gardens #1
WE Cb 10	385354076555901	DCMW002-05	Lederer Gardens #2
WE Cb 11	385332076564101	DCMW003-05	Clay and Flint (shallow)
WE Cb 12	385332076564102	DCMW004-05	Clay and Flint (deep)
WE Cc 3	385327076544801	DCMW008-05	Watts Branch Park
WW Ac 8*	385929077020901	DCMW004-08	16th Street NW and Eastern Avenue

USGS Site Name	USGS Site Number	DOEE Well Number	Site Location
WW Ba 28*	385644077061101	DCMW007-08	Dalecarlia Parkway NW at Warren Place NW
WW Bc 8	385519077012601	DCMW009-05	Banneker Recreation Center
WW Bc 9	385527077000701	DCMW011-05	Edgewood Recreation Center
WW Bc 10*	385619077020701	DCMW005-08	Piney Branch Parkway
WW Bc 11*	385707077021801	DCMW006-08	Carter Barron Amphitheater
WW Cc 38	385257077001101	DCMW001-13	Capitol Hill Day School

*Well installed as part of the DC Pesticides project but monitored as part of the District Groundwater Network.
**Well no longer exists.

Appendix 5.2 Map of Groundwater Monitoring Network



Location of study area, including lower portions of the Anacostia River and Rock Creek watersheds, and Federal and other parklands in Washington, D.C. Wells enclosed with a rectangle designate locations where water quality samples were collected in 2017. Well WE Cb 8 which is screened in the Patuxent Aquifer and is continuously monitored is shown in blue text.

Appendix 5.3 Groundwater Quality Data

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
1	Dissolved oxygen, water, unfiltered, mg/L	(00300)	--	--	0.4	--	0.2	--	--
2	pH, water, unfiltered, field, standard units	(00400)	--	--	7.1	--	6.3	--	--
3	pH, water, unfiltered, laboratory, standard units	(00403)	E5.9	--	7.8	7.8	7.2	--	E6.1
4	Specific conductance, water, unfiltered, laboratory, microsiemens per centimeter at 25 degrees Celsius	(90095)	<5	--	212	222	195	--	<5
5	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	(00095)	--	--	195	--	225	--	--
6	Temperature, water, degrees Celsius	(00010)	--	--	18.2	--	17.2	--	--
7	Turbidity, water, unfiltered, broad band light source (400-680 nm), detection angle 90 +-30 degrees to incident light, nephelometric turbidity units (NTU)	(63675)	--	--	3.8	--	2.2	--	--
8	Oxidation reduction potential, relative to the standard hydrogen electrode (SHE), millivolts	(63002)	--	--	-50	--	0	--	--
49	Dissolved solids dried at 180 degrees Celsius, water, filtered, mg/L	(70300)	<20	--	123	135	156	--	<20
50	Calcium, water, filtered, mg/L	(00915)	<0.022	--	20.6	22.7	12.7	--	<0.022
51	Magnesium, water, filtered, mg/L	(00925)	<0.011	--	8.99	10	7.51	--	<0.011
52	Potassium, water, filtered, mg/L	(00935)	<0.30	--	5.96	5.84	4.71	--	<0.30

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
53	Sodium, water, filtered, mg/L	(00930)	<0.40	--	6.12	6.67	8.01	--	<0.40
54	Bromide, water, filtered, mg/L	(71870)	<0.010	--	0.018	0.016	0.079	--	<0.010
55	Chloride, water, filtered, mg/L	(00940)	<0.02	--	5	5.5	37.2	--	<0.02
56	Fluoride, water, filtered, mg/L	(00950)	<0.01	--	0.1	0.11	0.05	--	0.07
57	Hydrogen sulfide, water, unfiltered, mg/L	(71875)	--	--	U	--	U	--	--
58	Silica, water, filtered, mg/L as SiO2	(00955)	<0.050	--	17.8	17.5	19.5	--	<0.050
59	Sulfate, water, filtered, mg/L	(00945)	<0.02	--	9.61	9.84	2.58	--	<0.02
60	Ammonia (NH3 + NH4+), water, filtered, mg/L as nitrogen	(00608)	<0.01	--	0.03	0.03	0.2	--	<0.01
61	Nitrate plus nitrite, water, filtered, mg/L as nitrogen	(00631)	<0.01	--	0.08	0.05	<0.01	--	<0.01
62	Nitrite, water, filtered, mg/L as nitrogen	(00613)	<0.001	--	0.005	0.003	<0.001	--	<0.001
63	Orthophosphate, water, filtered, mg/L as phosphorus	(00671)	<0.004	--	0.093	0.114	<0.004	--	<0.004
64	Phosphorus, water, filtered, mg/L as phosphorus	(00666)	<0.003	--	0.125	0.162	0.114	--	<0.003
65	Fecal coliforms, M-FC MF (0.45 micron) method, water, colony forming units per 100 milliliters	(31616)	20	--	<20	<20	<20	<20	--
66	Aluminum, water, filtered, ug/L	(01106)	<3.0	--	<3.0	<3.0	<3.0	--	<3.0
67	Barium, water, filtered, ug/L	(01005)	<0.10	--	119	119	203	--	<0.10
68	Beryllium, water, filtered, ug/L	(01010)	<0.010	--	0.012	<0.010	0.048	--	<0.010

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
69	Cadmium, water, filtered, ug/L	(01025)	<0.030	--	<0.030	<0.030	<0.030	--	<0.030
70	Chromium, water, filtered, ug/L	(01030)	<0.50	--	<0.50	<0.50	<0.50	--	<0.50
71	Cobalt, water, filtered, ug/L	(01035)	0.367	--	0.04	0.083	0.058	--	<0.030
72	Copper, water, filtered, ug/L	(01040)	0.55	--	<0.40	<0.40	<0.40	--	<0.40
73	Iron, water, filtered, ug/L	(01046)	<10.0	--	2,340	2,220	12,000	--	<10.0
74	Lead, water, filtered, ug/L	(01049)	0.097	--	<0.020	<0.020	<0.020	--	<0.020
75	Lithium, water, filtered, ug/L	(01130)	<0.15	--	6.45	6.38	5.41	--	<0.15
76	Manganese, water, filtered, ug/L	(01056)	0.57	--	138	143	232	--	<0.40
77	Molybdenum, water, filtered, ug/L	(01060)	<0.050	--	0.687	0.878	0.058	--	<0.050
78	Nickel, water, filtered, ug/L	(01065)	0.23	--	0.58	0.79	<0.20	--	<0.20
79	Silver, water, filtered, ug/L	(01075)	<1.00	--	<1.00	<1.00	<1.00	--	<1.00
80	Strontium, water, filtered, ug/L	(01080)	<0.50	--	169	173	128	--	<0.50
81	Thallium, water, filtered, ug/L	(01057)	<0.020	--	<0.040	<0.040	<0.020	--	<0.020
82	Vanadium, water, filtered, ug/L	(01085)	<0.10	--	<0.10	<0.10	0.11	--	<0.10
83	Zinc, water, filtered, ug/L	(01090)	<2.0	--	<2.0	<2.0	4.9	--	<2.0
84	Antimony, water, filtered, ug/L	(01095)	<0.060	--	<0.060	<0.060	<0.060	--	<0.060

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
85	Arsenic, water, filtered, ug/L	(01000)	<0.10	--	<0.10	<0.10	<0.10	--	<0.10
86	Boron, water, filtered, ug/L	(01020)	<5	--	20	22	11	--	<5
87	Selenium, water, filtered, ug/L	(01145)	<0.05	--	<0.05	<0.05	<0.05	--	<0.05
88	1,2,3-Trichloropropane, water, total, ug/L	(77443)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
89	1,2-Dibromo-3-chloropropane, water, total, ug/L	(82625)	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0
90	1,2-Dibromoethane, water, total, ug/L	(77651)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
91	1,2-Dichloroethane, water, total, ug/L	(32103)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
92	1,2-Dichloropropane, water, total, ug/L	(34541)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
93	1,3-Dichloropropane, water, total, ug/L	(77173)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
94	1,4-Dichlorobenzene, water, total, ug/L	(34571)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
95	1H-1,2,4-Triazole, water, filtered, recoverable, ng/L	(68498)	<50.0	--	<40.0	<40.0	<50.0	--	<50.0
96	2-(1-Hydroxyethyl)-6-methylaniline, water, filtered, recoverable, ng/L	(68611)	<94.0	--	<54.0	<54.0	<94.0	--	<94.0
97	2,3,3-Trichloro-2-propene-1-sulfonic acid (sodium salt), water, filtered, recoverable, ng/L	(68691)	<54.0	--	<55.0	<55.0	<54.0	--	<54.0
98	2,4,5-Trichlorophenol, water, total, ug/L	(77687)	--	--	<5.0	<5.0	<4.5	--	<4.5
99	2,4,6-Trichlorophenol, water, total, ug/L	(34621)	--	--	<5.0	<5.0	<4.5	--	<4.5
100	2,4-D, water, filtered, recoverable, ng/L	(68500)	<62.0	--	<62.0	<62.0	<62.0	--	<62.0

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
101	2,4-Dichlorophenol, water, total, ug/L	(34601)	--	--	<2.0	<2.0	<1.8	--	<1.8
102	2,4-Dimethylphenol, water, total, ug/L	(34606)	--	--	<5.0	<5.0	<4.5	--	<4.5
103	2-[(2-Ethyl-6-methylphenyl) amino]-1-propanol, water, filtered, recoverable, ng/L	(68595)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
104	2-Aminobenzimidazole, water, filtered, recoverable, ng/L	(68502)	<9.00	--	<10.0	<10.0	<9.00	--	<9.00
105	2-Amino-N-isopropylbenzamide, water, filtered, recoverable, ng/L	(68503)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
106	2-Chloro-2',6'-diethylacetanilide, water, filtered, recoverable, ng/L	(68525)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
107	2-Chloro-4-isopropylamino-6-amino-s-triazine, water, filtered, recoverable, ng/L	(68552)	<25.0	--	<11.0	<11.0	<25.0	--	<25.0
108	2-Chloro-6-ethylamino-4-amino-s-triazine, water, filtered, recoverable, ng/L	(68550)	<20.0	--	<20.0	<20.0	<20.0	--	<20.0
109	2-Chloro-N-(2-ethyl-6-methylphenyl) acetamide, water, filtered, recoverable, ng/L	(68521)	<10.0	--	<5.00	<5.00	<10.0	--	<10.0
110	2-Hydroxy-4-isopropylamino-6-amino-s-triazine, water, filtered, recoverable, ng/L	(68659)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
111	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine, water, filtered, recoverable, ng/L	(68660)	<8.00	--	<8.00	<8.00	<8.00	--	<8.00
112	2-Hydroxy-6-ethylamino-4-amino-s-triazine, water, filtered, recoverable, ng/L	(68656)	<100	--	<100	<100	<100	--	<100
113	2-Isopropyl-6-methyl-4-pyrimidinol, water, filtered, recoverable, ng/L	(68505)	<20.0	--	<8.0	<8.0	<20.0	--	<20.0
114	2-Methyl-4,6-dinitrophenol, water, total, ug/L	(30204)	--	--	<5.0	<5.0	<4.5	--	<4.5
115	3,4-Dichlorophenylurea, water, filtered, recoverable, ng/L	(68226)	<144	--	<108	<108	<144	--	<144
116	3-Hydroxy carbofuran, water, filtered, recoverable, ng/L	(68508)	<250	--	<250	<250	<250	--	<250

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
117	3-Phenoxybenzoic acid, water, filtered, recoverable, ng/L	(68873)	<100	--	<61.0	<61.0	<100	--	<100
118	4-(Hydroxymethyl) pendimethalin, water, filtered, recoverable, ng/L	(68511)	<213	--	<114	<114	<213	--	<213
119	4-Chloro-3-methylphenol, water, total, ug/L	(34452)	--	--	<5.0	<5.0	<4.5	--	<4.5
120	4-Chloroaniline, water, total, ug/L	(30343)	--	--	<5.0	<5.0	<4.5	--	<4.5
121	4-Chlorobenzylmethyl sulfoxide, water, filtered, recoverable, ng/L	(68514)	<3.20	--	<3.20	<3.20	<3.20	--	<3.20
122	4-Hydroxy molinate, water, filtered, recoverable, ng/L	(68515)	<7.00	--	<7.00	<7.00	<7.00	--	<7.00
123	4-Hydroxychlorothalonil, water, filtered, recoverable, ng/L	(68336)	<98.0	--	<98.0	<98.0	<98.0	--	<98.0
124	4-Hydroxyhexazinone A, water, filtered, recoverable, ng/L	(68517)	<3.00	--	<3.00	<3.00	<3.00	--	<3.00
125	4-Nitrophenol, water, total, ug/L	(34646)	--	--	<10	<10	<9	--	<9
126	Acephate, water, filtered, recoverable, ng/L	(68519)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
127	Acetochlor oxanilic acid, water, filtered, recoverable, ng/L	(68522)	<90.0	--	<65.0	<65.0	<90.0	--	<90.0
128	Acetochlor sulfinylacetic acid, water, filtered, recoverable, ng/L	(68524)	<176	--	<176	<176	<176	--	<176
129	Acetochlor sulfonic acid, water, filtered, recoverable, ng/L	(68523)	<320	--	<320	<320	<320	--	<320
130	Acetochlor, water, filtered, recoverable, ng/L	(68520)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
131	Alachlor oxanilic acid, water, filtered, recoverable, ng/L	(68526)	<84.0	--	<60.0	<60.0	<84.0	--	<84.0
132	Alachlor sulfinylacetic acid, water, filtered, recoverable, ng/L	(68527)	<169	--	<128	<128	<169	--	<169

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
133	Alachlor, water, filtered, recoverable, ng/L	(65064)	<10.0	--	<27.0	<27.0	<10.0	--	<10.0
134	Aldicarb sulfone, water, filtered, recoverable, ng/L	(68529)	<250	--	<250	<250	<250	--	<250
135	Aldicarb sulfoxide, water, filtered, recoverable, ng/L	(68530)	<2.20	--	<2.20	<2.20	<2.20	--	<2.20
136	Aldicarb, water, filtered, recoverable, ng/L	(68528)	<8.00	--	<8.00	<8.00	<8.00	--	<8.00
137	Ametryn, water, filtered, recoverable, ng/L	(68533)	<2.60	--	<2.60	<2.60	<2.60	--	<2.60
138	Asulam, water, filtered, recoverable, ng/L	(68536)	<250	--	<50.0	<50.0	<250	--	<250
139	Atrazine, water, filtered, recoverable, ng/L	(65065)	<6.80	--	<6.80	<6.80	<6.80	--	<6.80
140	Azinphos-methyl oxygen analog, water, filtered, recoverable, ng/L	(68211)	<25.0	--	<15.0	<15.0	<25.0	--	<25.0
141	Azinphos-methyl, water, filtered, recoverable, ng/L	(65066)	<8.00	--	<8.00	<8.00	<8.00	--	<8.00
142	Azoxystrobin, water, filtered, recoverable, ng/L	(66589)	<3.00	--	<3.00	<3.00	<3.00	--	<3.00
143	Bentazon, water, filtered, recoverable, ng/L	(68538)	<9.00	--	<9.00	<9.00	<9.00	--	<9.00
144	Bifenthrin, water, filtered, recoverable, ng/L	(65067)	<19.0	--	<19.0	<19.0	<19.0	--	<19.0
145	Bromacil, water, filtered, recoverable, ng/L	(68542)	<5.60	--	<10.0	<10.0	<5.60	--	<5.60
146	Bromomethane, water, total, ug/L	(34413)	<2.0	<2.0	<2.0	<2.0	<2.0	--	<2.0
147	Bromoxynil, water, filtered, recoverable, ng/L	(68543)	<79.0	--	<60.0	<60.0	<79.0	--	<79.0
148	Butralin, water, filtered, recoverable, ng/L	(68545)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
149	Butylate, water, filtered, recoverable, ng/L	(65068)	<25.0	--	<10.0	<10.0	<25.0	--	<25.0
150	Carbaryl, water, filtered, recoverable, ng/L	(65069)	<5.60	--	<10.0	<10.0	<5.60	--	<5.60
151	Carbazole, water, total, ug/L	(77571)	--	--	<1.0	<1.0	<0.9	--	<0.9
152	Carbendazim, water, filtered, recoverable, ng/L	(68548)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
153	Carbofuran, water, filtered, recoverable, ng/L	(65070)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
154	Carbon disulfide, water, unfiltered, ug/L	(77041)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
155	Carboxy molinate, water, filtered, recoverable, ng/L	(68549)	<50.0	--	<54.0	<54.0	<50.0	--	<50.0
156	Chlorimuron-ethyl, water, filtered, recoverable, ng/L	(68872)	<8.80	--	<10.0	<10.0	<8.80	--	<8.80
157	Chlorodiamino-s-triazine, water, filtered, recoverable, ng/L	(68547)	<25.0	--	<25.0	<25.0	<25.0	--	<25.0
158	Chlorosulfonamide acid, water, filtered, recoverable, ng/L	(68551)	<75.0	--	<60.0	<60.0	<75.0	--	<75.0
159	Chlorpyrifos oxon, water, filtered, recoverable, ng/L	(68216)	<2.00	--	<4.40	<4.40	<2.00	--	<2.00
160	Chlorpyrifos, water, filtered, recoverable, ng/L	(65072)	<3.00	--	<3.00	<3.00	<3.00	--	<3.00
161	Chlorsulfuron, water, filtered, recoverable, ng/L	(61678)	<50.0	--	<250	<250	<50.0	--	<50.0
162	cis-1,3-Dichloropropene, water, total, ug/L	(34704)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
163	cis-Cyhalothric acid, water, filtered, recoverable, ng/L	(68553)	<250	--	<200	<200	<250	--	<250
164	cis-Permethrin, water, filtered, recoverable, ng/L	(68769)	<4.2	--	<4.2	<4.2	<4.2	--	<4.2

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
165	Cyanazine, water, filtered, recoverable, ng/L	(66592)	<50.0	--	<50.0	<50.0	<50.0	--	<50.0
166	DCPA monoacid, water, filtered, recoverable, ng/L	(68560)	<2,700	--	<2,700	<2,700	<2,700	--	<2,700
167	Dechlorofipronil, water, filtered, recoverable, ng/L	(68561)	<3.8	--	<3.8	<3.8	<3.8	--	<3.8
168	Dechlorometolachlor, water, filtered, recoverable, ng/L	(68562)	<2.00	--	<2.00	<2.00	<2.00	--	<2.00
169	Deiodo flubendiamide, water, filtered, recoverable, ng/L	(68563)	<10.0	--	<250	<250	<10.0	--	<10.0
170	Deisopropyl prometryn, water, filtered, recoverable, ng/L	(68564)	<2.80	--	<2.80	<2.80	<2.80	--	<2.80
171	Demethyl fluometuron, water, filtered, recoverable, ng/L	(68591)	<3.60	--	<3.60	<3.60	<3.60	--	<3.60
172	Demethyl hexazinone B, water, filtered, recoverable, ng/L	(68566)	<3.00	--	<3.00	<3.00	<3.00	--	<3.00
173	Demethyl norflurazon, water, filtered, recoverable, ng/L	(68567)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
174	Desamino metribuzin, water, filtered, recoverable, ng/L	(68568)	<9.00	--	<9.00	<9.00	<9.00	--	<9.00
175	Desamino-diketo metribuzin, water, filtered, recoverable, ng/L	(68569)	<200	--	<200	<200	<200	--	<200
176	Desulfinylfipronil amide, water, filtered, recoverable, ng/L	(68570)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
177	Desulfinylfipronil, water, filtered, recoverable, ng/L	(66607)	<3.80	--	<3.80	<3.80	<3.80	--	<3.80
178	Diazinon, water, filtered, recoverable, ng/L	(65078)	<2.80	--	<2.80	<2.80	<2.80	--	<2.80
179	Diazoxon, water, filtered, recoverable, ng/L	(68236)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
180	Dicamba, water, filtered, recoverable, ng/L	(68571)	<2,400	--	<800	<800	<2,400	--	<2,400

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
181	Dichlorvos, water, filtered, recoverable, ng/L	(68572)	<52.0	--	<52.0	<52.0	<52.0	--	<52.0
182	Dicrotophos, water, filtered, recoverable, ng/L	(68573)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
183	Didemethyl hexazinone F, water, filtered, recoverable, ng/L	(68574)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
184	Diflubenzuron, water, filtered, recoverable, ng/L	(68576)	<6.00	--	<6.00	<6.00	<6.00	--	<6.00
185	Diflufenzopyr, water, filtered, recoverable, ng/L	(68577)	<72.0	--	<72.0	<72.0	<72.0	--	<72.0
186	Diketonitrile-isoxaflutole, water, filtered, recoverable, ng/L	(68578)	<62.0	--	<24.0	<24.0	<62.0	--	<62.0
187	Dimethenamid oxanilic acid, water, filtered, recoverable, ng/L	(68581)	<85.0	--	<85.0	<85.0	<85.0	--	<85.0
188	Dimethenamid sulfinylacetic acid, water, filtered, recoverable, ng/L	(68583)	<189	--	<189	<189	<189	--	<189
189	Dimethenamid sulfonic acid, water, filtered, recoverable, ng/L	(68582)	<79.0	--	<79.0	<79.0	<79.0	--	<79.0
190	Dimethenamid, water, filtered, recoverable, ng/L	(68580)	<3.00	--	<3.00	<3.00	<3.00	--	<3.28
191	Dimethoate, water, filtered, recoverable, ng/L	(66596)	<4.60	--	<4.60	<4.60	<4.60	--	<4.60
192	Disulfoton oxon sulfone, water, filtered, recoverable, ng/L	(68588)	<6.00	--	<6.00	<6.00	<6.00	--	<6.00
193	Disulfoton oxon sulfoxide, water, filtered, recoverable, ng/L	(68587)	<6.00	--	<6.00	<6.00	<6.00	--	<6.00
194	Disulfoton oxon, water, filtered, recoverable, ng/L	(68586)	<2.00	--	<2.00	<2.00	<2.00	--	<2.00
195	Disulfoton sulfone, water, filtered, recoverable, ng/L	(68589)	<250	--	<9.00	<9.00	<250	--	<250
196	Disulfoton sulfoxide, water, filtered, recoverable, ng/L	(68590)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
197	Disulfoton, water, filtered, recoverable, ng/L	(67595)	<11.0	--	<11.0	<11.0	<11.0	--	<11.0
198	Diuron, water, filtered, recoverable, ng/L	(66598)	<10.0	--	<5.00	<5.00	<10.0	--	<10.0
199	EPTC degradate R248722, water, filtered, recoverable, ng/L	(68594)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
200	EPTC, water, filtered, recoverable, ng/L	(65080)	<206	--	<206	<206	<206	--	<206
201	Ethoprop, water, filtered, recoverable, ng/L	(68596)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
202	Etoxazole, water, filtered, recoverable, ng/L	(68598)	<4.20	--	<4.20	<4.20	<4.20	--	<4.20
203	Fenamiphos sulfone, water, filtered, recoverable, ng/L	(68600)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
204	Fenamiphos sulfoxide, water, filtered, recoverable, ng/L	(68601)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
205	Fenamiphos, water, filtered, recoverable, ng/L	(68599)	<2.00	--	<4.60	<4.60	<2.00	--	<2.00
206	Fenbutatin oxide, water, filtered, recoverable, ng/L	(68602)	<100	--	<120	<120	<100	--	<100
207	Fentin, water, filtered, recoverable, ng/L	(68603)	<30.0	--	<30.0	<30.0	<30.0	--	<30.0
208	Fipronil amide, water, filtered, recoverable, ng/L	(68604)	<9.20	--	<9.20	<9.20	<9.20	--	<9.20
209	Fipronil sulfide, water, filtered, recoverable, ng/L	(66610)	<4.20	--	<4.20	<4.20	<4.20	--	<4.20
210	Fipronil sulfonate, water, filtered, recoverable, ng/L	(68605)	<96.0	--	<96.0	<96.0	<96.0	--	<96.0
211	Fipronil sulfone, water, filtered, recoverable, ng/L	(66613)	<5.60	--	<5.60	<5.60	<5.60	--	<5.60
212	Fipronil, water, filtered, recoverable, ng/L	(66604)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
213	Flubendiamide, water, filtered, recoverable, ng/L	(68606)	<4.40	--	<4.40	<4.40	<4.40	--	<4.40
214	Flumetsulam, water, filtered, recoverable, ng/L	(61679)	<17.0	--	<17.0	<17.0	<17.0	--	<17.0
215	Fluometuron, water, filtered, recoverable, ng/L	(68608)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
216	Fonofos, water, filtered, recoverable, ng/L	(65084)	<11.0	--	<11.0	<11.0	<11.0	--	<11.0
217	Halosulfuron methyl, water, filtered, recoverable, ng/L	(61680)	<25.0	--	<12.0	<12.0	<25.0	--	<25.0
218	Hexachlorobenzene, water, total, ug/L	(39700)	--	--	<1.0	<1.0	<0.9	--	<0.9
219	Hexachlorodibenzo-p-dioxins (all isomers), water, total, picograms per liter	(62219)	<1.2	--	<1.3	<1.0	<1.6	--	<1.2
220	Hexazinone Transformation Product C, water, filtered, recoverable, ng/L	(68612)	<2.00	--	<2.00	<2.00	<2.00	--	<2.00
221	Hexazinone Transformation Product D, water, filtered, recoverable, ng/L	(68613)	<294	--	<294	<294	<294	--	<294
222	Hexazinone Transformation Product E, water, filtered, recoverable, ng/L	(68614)	<76.0	--	<76.0	<76.0	<76.0	--	<76.0
223	Hexazinone Transformation Product G, water, filtered, recoverable, ng/L	(68713)	<22.0	--	<22.0	<22.0	<22.0	--	<22.0
224	Hexazinone, water, filtered, recoverable, ng/L	(65085)	<3.60	--	<3.60	<3.60	<3.60	--	<3.60
225	Hydroxy didemethyl fluometuron, water, filtered, recoverable, ng/L	(68619)	<50.0	--	<50.0	<50.0	<50.0	--	<50.0
226	Hydroxy monodemethyl fluometuron, water, filtered, recoverable, ng/L	(68617)	<12.0	--	--	--	<12.0	--	<12.0
227	Hydroxyacetochlor, water, filtered, recoverable, ng/L	(68615)	<25.0	--	<20.0	<20.0	<25.0	--	<25.0
228	Hydroxyalachlor, water, filtered, recoverable, ng/L	(68616)	<6.00	--	<10.0	<10.0	<6.00	--	<6.00

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
229	Hydroxydiazinon, water, filtered, recoverable, ng/L	(68618)	<11.0	--	<11.0	<11.0	<11.0	--	<11.0
230	Hydroxyfluometuron, water, filtered, recoverable, ng/L	(68620)	<10.0	--	--	--	<10.0	--	<10.0
231	Hydroxymetolachlor, water, filtered, recoverable, ng/L	(68622)	<2.40	--	<2.50	<2.50	<2.40	--	<2.40
232	Hydroxyphthalazinone, water, filtered, recoverable, ng/L	(68623)	<46.0	--	<28.0	<28.0	<46.0	--	<46.0
233	Hydroxysimazine, water, filtered, recoverable, ng/L	(68624)	<100	--	<120	<120	<100	--	<100
234	Imazamox, water, filtered, recoverable, ng/L	(68625)	<28.0	--	<30.0	<30.0	<28.0	--	<28.0
235	Imazaquin, water, filtered, recoverable, ng/L	(61682)	<18.0	--	<18.0	<18.0	<18.0	--	<18.0
236	Imazethapyr, water, filtered, recoverable, ng/L	(61683)	<20.0	--	<8.00	<8.00	<20.0	--	<20.0
237	Imidacloprid, water, filtered, recoverable, ng/L	(68426)	<16.0	--	<16.0	<16.0	<16.0	--	<16.0
238	Indoxacarb, water, filtered, recoverable, ng/L	(68627)	<250	--	<5.20	<5.20	<250	--	<250
239	Isoxaflutole acid metabolite RPA 203328, water, filtered, recoverable, ng/L	(68633)	<9.20	--	<9.20	<9.20	<9.20	--	<9.20
240	Isoxaflutole, water, filtered, recoverable, ng/L	(68632)	<25.0	--	<18.0	<18.0	<25.0	--	<25.0
241	Kresoxim-methyl, water, filtered, recoverable, ng/L	(67670)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
242	Lactofen, water, filtered, recoverable, ng/L	(68638)	<250	--	<10.0	<10.0	<250	--	<250
243	Linuron, water, filtered, recoverable, ng/L	(68639)	<5.60	--	<5.60	<5.60	<5.60	--	<5.60
244	Malaoxon, water, filtered, recoverable, ng/L	(68240)	<250	--	<2.40	<2.40	<250	--	<250

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
245	Malathion, water, filtered, recoverable, ng/L	(65087)	<5.40	--	<5.40	<5.40	<5.40	--	<5.40
246	MCPA, water, filtered, recoverable, ng/L	(68641)	<95.0	--	<95.0	<95.0	<95.0	--	<95.0
247	Metalaxyl, water, filtered, recoverable, ng/L	(68437)	<6.00	--	<10.0	<10.0	<6.00	--	<6.00
248	Metconazole, water, filtered, recoverable, ng/L	(66620)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
249	Methamidophos, water, filtered, recoverable, ng/L	(68644)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
250	Methidathion, water, filtered, recoverable, ng/L	(65088)	<8.40	--	<8.40	<8.40	<8.40	--	<8.40
251	Methomyl oxime, water, filtered, recoverable, ng/L	(68646)	<2,000	--	<8,000	<8,000	<2,000	--	<2,000
252	Methomyl, water, filtered, recoverable, ng/L	(68645)	<3.00	--	<3.00	<3.00	<3.00	--	<3.00
253	Methoxyfenozide, water, filtered, recoverable, ng/L	(68647)	<2.20	--	<2.20	<2.20	<2.20	--	<2.20
254	Methyl paraoxon, water, filtered, recoverable, ng/L	(68648)	<19.0	--	<25.0	<25.0	<19.0	--	<19.0
255	Metolachlor hydroxy morpholinone, water, filtered, recoverable, ng/L	(68649)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
256	Metolachlor oxanilic acid, water, filtered, recoverable, ng/L	(68650)	<149	--	<149	<149	<149	--	<149
257	Metolachlor sulfonic acid, water, filtered, recoverable, ng/L	(68651)	<68.0	--	<68.0	<68.0	<68.0	--	<68.0
258	Metolachlor, water, filtered, recoverable, ng/L	(65090)	<9.0	--	<3.2	<3.2	<9.0	--	<9.0
259	Metribuzin DK, water, filtered, recoverable, ng/L	(68653)	<236	--	<236	<236	<236	--	<236
260	Metribuzin, water, filtered, recoverable, ng/L	(68652)	<20.0	--	<20.0	<20.0	<20.0	--	<20.0

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
261	Molinate, water, filtered, recoverable, ng/L	(65091)	<50.0	--	<28.0	<28.0	<50.0	--	<50.0
262	Myclobutanil, water, filtered, recoverable, ng/L	(66632)	<7.00	--	<7.00	<7.00	<7.00	--	<7.00
263	N-(3,4-Dichlorophenyl)-N'-methylurea, water, filtered, recoverable, ng/L	(68231)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
264	Naled, water, filtered, recoverable, ng/L	(68654)	<250	--	<250	<250	<250	--	<250
265	Nicosulfuron, water, filtered, recoverable, ng/L	(61685)	<12.0	--	<12.0	<12.0	<12.0	--	<12.0
266	Norflurazon, water, filtered, recoverable, ng/L	(67685)	<3.40	--	<3.40	<3.40	<3.40	--	<3.40
267	Novaluron, water, filtered, recoverable, ng/L	(68655)	<250	--	<50.0	<50.0	<250	--	<250
268	o-Cresol, water, total, ug/L	(77152)	--	--	<2.0	<2.0	<1.8	--	<1.8
269	O-Ethyl O-methyl S-propyl phosphorothioate, water, filtered, recoverable, ng/L	(68597)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
270	O-Ethyl S-methyl S-propyl phosphorodithioate, water, filtered, recoverable, ng/L	(68657)	<3.00	--	<3.00	<3.00	<3.00	--	<3.00
271	O-Ethyl S-propyl phosphorothioate, water, filtered, recoverable, ng/L	(68658)	<64.0	--	<64.0	<64.0	<64.0	--	<64.0
272	Omethoate, water, filtered, recoverable, ng/L	(68661)	<2.00	--	<2.00	<2.00	<2.00	--	<2.00
273	Orthosulfamuron, water, filtered, recoverable, ng/L	(68662)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
274	Oryzalin, water, filtered, recoverable, ng/L	(68663)	<12.0	--	<12.0	<12.0	<12.0	--	<12.0
275	Oxamyl oxime, water, filtered, recoverable, ng/L	(68665)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
276	Oxamyl, water, filtered, recoverable, ng/L	(68664)	<250	--	<2.00	<2.00	<250	--	<250

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
277	Oxyfluorfen, water, filtered, recoverable, ng/L	(65093)	<1,000	--	<500	<500	<1,000	--	<1,000
278	Paraoxon, water, filtered, recoverable, ng/L	(68666)	<3.40	--	<3.40	<3.40	<3.40	--	<3.40
279	Pendimethalin, water, filtered, recoverable, ng/L	(65098)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
280	Pentachlorophenol, water, total, ug/L	(39032)	--	--	<4.0	<4.0	<3.6	--	<3.6
281	Phorate oxon sulfoxide, water, filtered, recoverable, ng/L	(68671)	<7.00	--	<7.00	<7.00	<7.00	--	<7.00
282	Phorate oxygen analog sulfone, water, filtered, recoverable, ng/L	(68670)	<50.0	--	<20.0	<20.0	<50.0	--	<50.0
283	Phorate oxygen analog, water, filtered, recoverable, ng/L	(68669)	<100	--	<55.0	<55.0	<100	--	<100
284	Phorate sulfone, water, filtered, recoverable, ng/L	(68672)	<25.0	--	<36.0	<36.0	<25.0	--	<25.0
285	Phorate sulfoxide, water, filtered, recoverable, ng/L	(68673)	<4.60	--	<4.60	<4.60	<4.60	--	<4.60
286	Phorate, water, filtered, recoverable, ng/L	(68668)	<11.0	--	<11.0	<11.0	<11.0	--	<11.0
287	Phthalazinone, water, filtered, recoverable, ng/L	(68675)	<50.0	--	<25.0	<25.0	<50.0	--	<50.0
288	Piperonyl butoxide, water, filtered, recoverable, ng/L	(65102)	<60.0	--	<60.0	<60.0	<60.0	--	<60.0
289	Profenofos, water, filtered, recoverable, ng/L	(68676)	<3.00	--	<3.00	<3.00	<3.00	--	<3.00
290	Prometon, water, filtered, recoverable, ng/L	(67702)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
291	Prometryn, water, filtered, recoverable, ng/L	(65103)	<4.20	--	<4.20	<4.20	<4.20	--	<4.20
292	Propanil, water, filtered, recoverable, ng/L	(66641)	<12.0	--	<12.0	<12.0	<12.0	--	<12.0

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
293	Propargite, water, filtered, recoverable, ng/L	(68677)	<2.00	--	<2.00	<2.00	<2.00	--	<2.00
294	Propazine, water, filtered, recoverable, ng/L	(68678)	<3.20	--	<3.20	<3.20	<3.20	--	<3.20
295	Propiconazole, water, filtered, recoverable, ng/L	(66643)	<6.00	--	<6.00	<6.00	<6.00	--	<6.00
296	Propoxur, water, filtered, recoverable, ng/L	(68679)	<250	--	<3.20	<3.20	<250	--	<250
297	Propyzamide, water, filtered, recoverable, ng/L	(67706)	<2.40	--	<2.40	<2.40	<2.40	--	<2.40
298	Prosulfuron, water, filtered, recoverable, ng/L	(61687)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
299	Pyraclostrobin, water, filtered, recoverable, ng/L	(66646)	<2.40	--	<2.40	<2.40	<2.40	--	<2.40
300	Pyridaben, water, filtered, recoverable, ng/L	(68682)	<2.40	--	<2.40	<2.40	<2.40	--	<2.40
301	Pyriproxyfen, water, filtered, recoverable, ng/L	(68683)	<3.0	--	<3.0	<3.0	<3.0	--	<3.0
302	sec-Acetochlor oxanilic acid, water, filtered, recoverable, ng/L	(68684)	<100	--	<200	<200	<100	--	<100
303	sec-Alachlor oxanilic acid, water, filtered, recoverable, ng/L	(68685)	<135	--	<110	<110	<135	--	<135
304	Siduron, water, filtered, recoverable, ng/L	(68686)	<5.00	--	<5.00	<5.00	<5.00	--	<5.00
305	Simazine, water, filtered, recoverable, ng/L	(65105)	<7.20	--	<10.0	<10.0	<7.20	--	<7.20
306	Sulfentrazone, water, filtered, recoverable, ng/L	(68687)	<18.0	--	<18.0	<18.0	<18.0	--	<18.0
307	Sulfometuron-methyl, water, filtered, recoverable, ng/L	(68688)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
308	Sulfosulfuron ethyl sulfone, water, filtered, recoverable, ng/L	(68690)	<2.80	--	<2.80	<2.80	<2.80	--	<2.80

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
309	Sulfosulfuron, water, filtered, recoverable, ng/L	(68689)	<11.0	--	<25.0	<25.0	<11.0	--	<11.0
310	Tebuconazole, water, filtered, recoverable, ng/L	(66649)	<5.00	--	<15.0	<15.0	<5.00	--	<5.00
311	Tebufenozide, water, filtered, recoverable, ng/L	(68692)	<2.00	--	<2.00	<2.00	<2.00	--	<2.00
312	Tebupirimfos oxon, water, filtered, recoverable, ng/L	(68694)	<2.00	--	<2.00	<2.00	<2.00	--	<2.00
313	Tebupirimfos, water, filtered, recoverable, ng/L	(68693)	<2.00	--	<2.00	<2.00	<2.00	--	<2.00
314	Tebuthiuron Transformation Product 104, water, filtered, recoverable, ng/L	(68575)	<5.60	--	<5.60	<5.60	<5.60	--	<5.60
315	Tebuthiuron Transformation Product 106, water, filtered, recoverable, ng/L	(68714)	<76.0	--	<32.0	<32.0	<76.0	--	<76.0
316	Tebuthiuron Transformation Product 108, water, filtered, recoverable, ng/L	(68696)	<10.0	--	<10.0	<10.0	<10.0	--	<10.0
317	Tebuthiuron Transformation Product 109 (OH), water, filtered, recoverable, ng/L	(68697)	<38.0	--	<250	<250	<38.0	--	<38.0
318	Tebuthiuron Transformation Product 109, water, filtered, recoverable, ng/L	(68621)	<11.0	--	<11.0	<11.0	<11.0	--	<11.0
319	Tebuthiuron, water, filtered, recoverable, ng/L	(68695)	<3.00	--	<3.00	<3.00	<3.00	--	<3.00
320	Terbacil, water, filtered, recoverable, ng/L	(68698)	<21.0	--	<25.0	<25.0	<21.0	--	<21.0
321	Terbufos oxon sulfoxide, water, filtered, recoverable, ng/L	(68702)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
322	Terbufos oxon, water, filtered, recoverable, ng/L	(68700)	<4.00	--	<4.00	<4.00	<4.00	--	<4.00
323	Terbufos oxygen analog sulfone, water, filtered, recoverable, ng/L	(68701)	<11.0	--	<11.0	<11.0	<11.0	--	<11.0
324	Terbufos sulfone, water, filtered, recoverable, ng/L	(68703)	<25.0	--	<11.0	<11.0	<25.0	--	<25.0

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
325	Terbufos sulfoxide, water, filtered, recoverable, ng/L	(68704)	<3.00	--	<3.00	<3.00	<3.00	--	<3.00
326	Terbufos, water, filtered, recoverable, ng/L	(68699)	<6.80	--	<6.80	<6.80	<6.80	--	<6.80
327	Terbuthylazine, water, filtered, recoverable, ng/L	(66651)	<3.60	--	<3.60	<3.60	<3.60	--	<3.60
328	Tetraconazole, water, filtered, recoverable, ng/L	(66654)	<10.0	--	<7.00	<7.00	<10.0	--	<10.0
329	Thiobencarb, water, filtered, recoverable, ng/L	(65107)	<4.20	--	<4.20	<4.20	<4.20	--	<4.20
330	trans-1,3-Dichloropropene, water, total, ug/L	(34699)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
331	trans-Permethrin, water, filtered, recoverable, ng/L	(68708)	<3.80	--	<3.80	<3.80	<3.80	--	<3.80
332	Triallate, water, filtered, recoverable, ng/L	(68710)	<12.0	--	<12.0	<12.0	<12.0	--	<12.0
333	Tribufos, water, filtered, recoverable, ng/L	(68711)	<2.00	--	<2.00	<2.00	<2.00	--	<2.00
334	Triclopyr, water, filtered, recoverable, ng/L	(68712)	<88.0	--	36.8	29.3	<88.0	--	<88.0
335	Trifloxystrobin, water, filtered, recoverable, ng/L	(66660)	<2.80	--	<2.80	<2.80	<2.80	--	<2.80
336	Aroclor 1016, water, total, ug/L	(34671)	<0.1	--	<0.1	<0.1	<0.1	--	<0.1
337	Aroclor 1221, water, total, ug/L	(39488)	<0.1	--	<0.1	<0.1	<0.1	--	<0.1
338	Aroclor 1232, water, total, ug/L	(39492)	<0.1	--	<0.1	<0.1	<0.1	--	<0.1
339	Aroclor 1242, water, total, ug/L	(39496)	<0.1	--	<0.1	<0.1	<0.1	--	<0.1
340	Aroclor 1248, water, total, ug/L	(39500)	<0.1	--	<0.1	<0.1	<0.1	--	<0.1

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
341	Aroclor 1254, water, total, ug/L	(39504)	<0.1	--	<0.1	<0.1	<0.1	--	<0.1
342	Aroclor 1260, water, total, ug/L	(39508)	<0.1	--	<0.1	<0.1	<0.1	--	<0.1
343	Aroclor 1262, water, total, ug/L	(81649)	<0.09	--	<0.09	<0.09	<0.09	--	<0.09
344	Aroclor 1268, water, total, ug/L	(81650)	<0.093	--	<0.093	<0.093	<0.094	--	<0.093
345	Total Aroclors, water, total, ug/L	(63691)	<0.09	--	<0.09	<0.09	<0.09	--	<0.09
346	1,1,1,2-Tetrachloroethane, water, total, ug/L	(77562)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
347	1,1,1-Trichloroethane, water, total, ug/L	(34506)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
348	1,1,2,2-Tetrachloroethane, water, total, ug/L	(34516)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
349	1,1,2-Trichloro-1,2,2-trifluoroethane, water, total, ug/L	(77652)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
350	1,1,2-Trichloroethane, water, total, ug/L	(34511)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
351	1,1-Dichloroethane, water, total, ug/L	(34496)	<2.0	<2.0	<2.0	<2.0	<2.0	--	<2.0
352	1,1-Dichloroethene, water, total, ug/L	(34501)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
353	1,1-Dichloropropene, water, total, ug/L	(77168)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
354	1,2,3,4,6,7,8,9-Octachlorodibenzofuran, water, total, picograms per liter	(62216)	<4.5	--	<5.0	<4.0	<4.9	--	<3.7
355	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin, water, total, picograms per liter	(62206)	<3.4	--	<3.8	<3.0	<3.4	--	<3.1
356	1,2,3,4,6,7,8-Heptachlorodibenzofuran, water, total, picograms per liter	(62214)	<1.2	--	<1.0	<0.7	<0.9	--	<1.0

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
357	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin, water, total, picograms per liter	(62205)	<2.0	--	<1.9	<2.0	<2.5	--	<2.4
358	1,2,3,4,7,8,9-Heptachlorodibenzofuran, water, total, picograms per liter	(62215)	<1.6	--	<1.3	<0.9	<1.3	--	<1.3
359	1,2,3,4,7,8-Hexachlorodibenzofuran, water, total, picograms per liter	(62210)	<1.0	--	<1.0	<0.8	<1.0	--	<1.0
360	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin, water, total, picograms per liter	(62202)	<1.4	--	<1.5	<1.2	<1.9	--	<1.4
361	1,2,3,6,7,8-Hexachlorodibenzofuran, water, total, picograms per liter	(62211)	<0.8	--	<0.9	<0.7	<0.8	--	<0.9
362	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin, water, total, picograms per liter	(62203)	<1.2	--	<1.3	<1.0	<1.6	--	<1.2
363	1,2,3,7,8,9-Hexachlorodibenzofuran, water, total, picograms per liter	(62212)	<1.2	--	<1.2	<1.0	<1.2	--	<1.3
364	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin, water, total, picograms per liter	(62204)	<1.3	--	<1.5	<1.2	<1.8	--	<1.4
365	1,2,3,7,8-Pentachlorodibenzofuran, water, total, picograms per liter	(62208)	<1.2	--	<1.1	<1.2	<1.1	--	<0.9
366	1,2,3,7,8-Pentachlorodibenzo-p-dioxin, water, total, picograms per liter	(62201)	<1.1	--	<1.1	<0.7	<1.1	--	<1.0
367	1,2,3-Trichlorobenzene, water, total, ug/L	(77613)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
368	1,2,4-Trichlorobenzene, water, total, ug/L	(34551)	<1.0	<1.0	<0.001	<1.0	<1.0	--	<1.0
369	1,2,4-Trimethylbenzene, water, total, ug/L	(77222)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
370	1,2-Dichlorobenzene, water, total, ug/L	(34536)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
371	1,2-Dichloroethene (cis & trans), water, total, ug/L	(45617)	<2.0	<2.0	<2.0	<2.0	<2.0	--	<2.0
372	1,3,5-Trimethylbenzene, water, total, ug/L	(77226)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
373	1,3-Dichlorobenzene, water, total, ug/L	(34566)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
374	2,2-Dichloropropane, water, total, ug/L	(77170)	<2.0	<2.0	<2.0	<2.0	<2.0	--	<2.0
375	2,3,4,6,7,8-Hexachlorodibenzofuran, water, total, picograms per liter	(62213)	<0.9	--	<1.0	<0.8	<0.9	--	<1.0
376	2,3,4,7,8-Pentachlorodibenzofuran, water, total, picograms per liter	(62209)	<1.0	--	<1.0	<1.0	<1.0	--	<0.8
377	2,3,7,8-Tetrachlorodibenzofuran, water, total, picograms per liter	(62207)	<1.7	--	<1.6	<1.5	<1.7	--	<1.5
378	2,3,7,8-Tetrachlorodibenzo-p-dioxin, water, total, picograms per liter	(62200)	<1.4	--	<1.4	<1.1	<1.3	--	<1.1
379	2,4-Dinitrophenol, water, total, ug/L	(34616)	--	--	<5	<5	--	--	<4
380	2,4-Dinitrotoluene, water, total, ug/L	(34611)	--	--	<1.0	<1.0	<0.9	--	<0.9
381	2,6-Dinitrotoluene, water, total, ug/L	(34626)	--	--	<1.0	<1.0	<0.9	--	<0.9
382	2-Chloronaphthalene, water, total, ug/L	(34581)	--	--	<2.0	<2.0	<1.8	--	<1.8
383	2-Chlorophenol, water, total, ug/L	(34586)	--	--	<5.0	<5.0	<4.5	--	<4.5
384	2-Chlorotoluene, water, total, ug/L	(77275)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
385	2-Methylnaphthalene, water, total, ug/L	(30194)	--	--	<1.0	<1.0	<0.9	--	<0.9
386	2-Nitroaniline, water, total, ug/L	(30195)	--	--	<5.0	<5.0	<4.5	--	<4.5
387	2-Nitrophenol, water, total, ug/L	(34591)	--	--	<5.0	<5.0	<4.5	--	<4.5
388	3,3'-Dichlorobenzidine, water, total, ug/L	(34631)	--	--	<2	<2	<2	--	<2

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
389	3-Nitroaniline, water, total, ug/L	(78300)	--	--	<5.0	<5.0	<4.5	--	<4.5
390	4-Bromophenyl phenyl ether, water, total, ug/L	(34636)	--	--	<2.0	<2.0	<1.8	--	<1.8
391	4-Chlorophenyl phenyl ether, water, total, ug/L	(34641)	--	--	<2.0	<2.0	<1.8	--	<1.8
392	4-Chlorotoluene, water, total, ug/L	(77277)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
393	4-Isopropyltoluene, water, total, ug/L	(77356)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
394	4-Nitroaniline, water, total, ug/L	(30196)	--	--	<5.0	<5.0	<4.5	--	<4.5
395	9H-Fluorene, water, total, ug/L	(34381)	--	--	<1.0	<1.0	<0.9	--	<0.9
396	Acenaphthene, water, total, ug/L	(34205)	--	--	<1.0	<1.0	<0.9	--	<0.9
397	Acenaphthylene, water, total, ug/L	(34200)	--	--	<1.0	<1.0	<0.9	--	<0.9
398	Acetone, water, total, ug/L	(81552)	43	41	29	27	18	--	19
399	Alachlor sulfonic acid, water, filtered, recoverable, ng/L	(68871)	<360	--	<800	<800	<360	--	<360
400	Anthracene, water, total, ug/L	(34220)	--	--	<1.0	<1.0	<0.9	--	<0.9
401	Benzene, water, total, ug/L	(34030)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
402	Benzo[a]anthracene, water, total, ug/L	(34526)	--	--	<1.0	<1.0	<0.9	--	<0.9
403	Benzo[a]pyrene, water, total, ug/L	(34247)	--	--	<1.0	<1.0	<0.9	--	<0.9
404	Benzo[b]fluoranthene, water, total, ug/L	(34230)	--	--	<1.0	<1.0	<0.9	--	<0.9

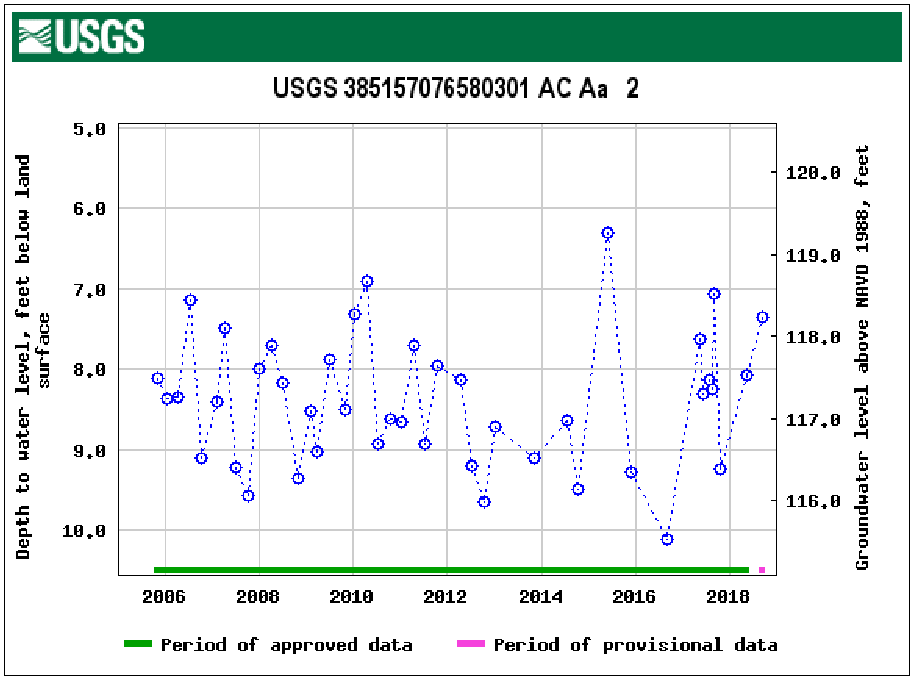
	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
405	Benzo[ghi]perylene, water, total, ug/L	(34521)	--	--	<1.0	<1.0	<0.9	--	<0.9
406	Benzo[k]fluoranthene, water, total, ug/L	(34242)	--	--	<1.0	<1.0	<0.9	--	<0.9
407	Benzoic acid, water, total, ug/L	(77247)	--	--	<2	<2	<2	--	<2
408	Benzyl alcohol, water, total, ug/L	(77147)	--	--	<2.0	<2.0	<1.8	--	<1.8
409	Benzyl n-butyl phthalate, water, total, ug/L	(34292)	--	--	<2.0	<2.0	<1.8	--	<1.8
410	Bis(2-chloro-1-methylethyl) ether, water, total, ug/L	(68200)	--	--	<2.00	<2.00	--	--	<1.80
411	Bis(2-chloroethoxy) methane, water, total, ug/L	(34278)	--	--	<2.0	<2.0	<1.8	--	<1.8
412	Bis(2-chloroethyl) ether, water, total, ug/L	(34273)	--	--	<2.0	<2.0	<1.8	--	<1.8
413	Bis(2-ethylhexyl) phthalate, water, total, ug/L	(39100)	--	--	<2.0	<2.0	<1.8	--	<1.8
414	Bromobenzene, water, total, ug/L	(81555)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
415	Bromochloromethane, water, total, ug/L	(77297)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
416	Bromodichloromethane, water, total, ug/L	(32101)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
417	Chlorobenzene, water, total, ug/L	(34301)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
418	Chloroethane, water, total, ug/L	(34311)	<2.0	<2.0	<2.0	<2.0	<2.0	--	<2.0
419	Chloromethane, water, total, ug/L	(34418)	<1.0	0.9	0.8	0.8	<1.0	--	0.8
420	Chrysene, water, total, ug/L	(34320)	--	--	<1	<1	<0.91	--	<0.91

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
421	cis-1,2-Dichloroethene, water, total, ug/L	(77093)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
422	Dibenzo[a, h]anthracene, water, total, ug/L	(34556)	--	--	<1.0	<1.0	<0.9	--	<0.9
423	Dibenzofuran, water, total, ug/L	(81302)	--	--	<5.0	<5.0	<4.5	--	<4.5
424	Dibromochloromethane, water, total, ug/L	(32105)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
425	Dibromomethane, water, total, ug/L	(30217)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
426	Dichlorodifluoromethane, water, total, ug/L	(34668)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
427	Dichloromethane, water, total, ug/L	(34423)	0.4	0.5	0.3	<5.0	<5.0	--	0.4
428	Diesel range organic compounds (C10-C28), water, total, ug/L	(52138)	<190	--	<190	<190	<200	--	<190
429	Diethyl phthalate, water, total, ug/L	(34336)	--	--	<2.0	<2.0	<1.8	--	<1.8
430	Dimethyl phthalate, water, total, ug/L	(34341)	--	--	<2.0	<2.0	<1.8	--	<1.8
431	Di-n-butyl phthalate, water, total, ug/L	(39110)	--	--	<2.0	<2.0	<1.8	--	<1.8
432	Di-n-octyl phthalate, water, total, ug/L	(34596)	--	--	<2.0	<2.0	<1.8	--	<1.8
433	Ethylbenzene, water, total, ug/L	(34371)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
434	Fluoranthene, water, total, ug/L	(34376)	--	--	<1.0	<1.0	<0.9	--	<0.9
435	Gasoline range organic compounds, water, total, ug/L	(49892)	71	--	65	62	61	--	48
436	Heptachlorodibenzofurans (all isomers), water, total, picograms per liter	(62224)	<1.2	--	<0.989	<0.684	<0.936	--	<0.967
437	Heptachlorodibenzo-p-dioxins (all isomers), water, total, picograms per liter	(62220)	<2.0	--	<1.9	<2.0	<2.5	--	<2.4
438	Hexachlorobutadiene, water, total, ug/L	(39702)	<2.0	<2.0	<2.0	<2.0	<2.0	--	<2.0
439	Hexachlorocyclopentadiene, water, total, ug/L	(34386)	--	--	<10	<10	<9.1	--	<9.1

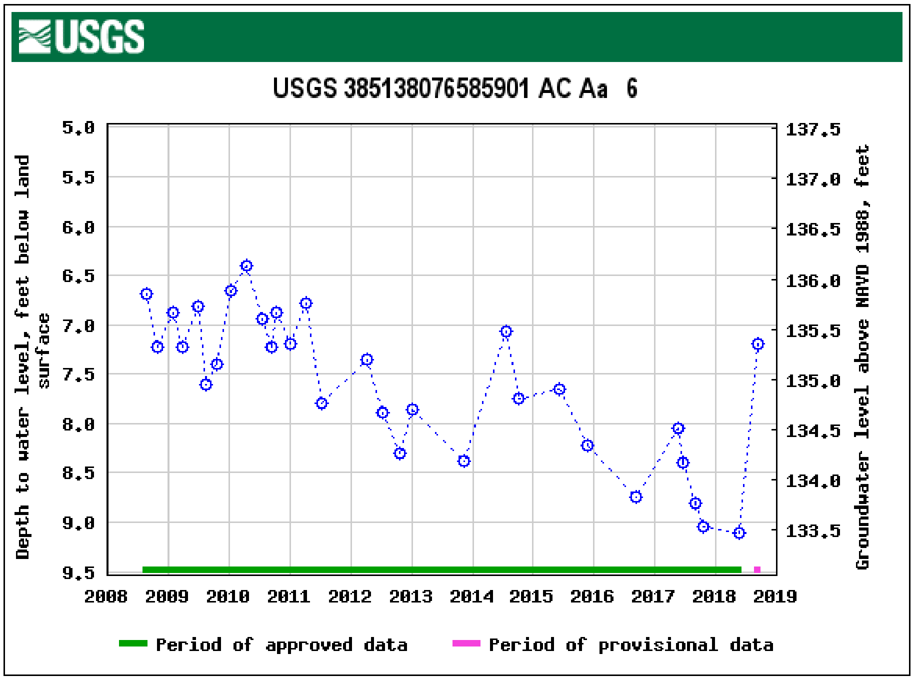
	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
440	Hexachlorodibenzofurans (all isomers), water, total, picograms per liter	(62223)	<0.825	--	<0.852	<0.719	<0.826	--	<0.903
441	Hexachloroethane, water, total, ug/L	(34396)	--	--	<2.0	<2.0	<1.8	--	<1.8
442	Indeno[1,2,3-cd] pyrene, water, total, ug/L	(34403)	--	--	<1.0	<1.0	<0.9	--	<0.9
443	Isobutyl methyl ketone, water, total, ug/L	(78133)	1.4	1.3	1.4	1.3	1	--	1.3
444	Isophorone, water, total, ug/L	(34408)	--	--	<2	<2	<2	--	<2
445	Isopropylbenzene, water, total, ug/L	(77223)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
446	Methyl ethyl ketone, water, total, ug/L	(81595)	<10	<10	<10	<10	<10	--	<10
447	Methyl tert-butyl ether, water, total, ug/L	(78032)	<1.0	<1.0	<1.0	<1.0	1.3	--	<1.0
448	m-Xylene plus p-xylene, water, total, ug/L	(85795)	<2.0	<2.0	<2.0	<2.0	<2.0	--	<2.0
449	Naphthalene, water, total, ug/L	(34696)	<1.0	<1.0	<0.001	<1.0	<1.0	--	<1.0
450	n-Butyl methyl ketone, water, total, ug/L	(77103)	<2.0	<2.0	<2.0	<2.0	<2.0	--	<2.0
451	n-Butylbenzene, water, total, ug/L	(77342)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
452	Nitrobenzene, water, total, ug/L	(34447)	--	--	<1.0	<1.0	<0.9	--	<0.9
453	N-Nitrosodimethylamine (NDMA), water, total, ug/L	(34438)	--	--	<2.0	<2.0	<1.8	--	<1.8
454	N-Nitrosodi-n-propylamine, water, total, ug/L	(34428)	--	--	<2.0	<2.0	<1.8	--	<1.8
455	N-Nitrosodiphenylamine, water, total, ug/L	(34433)	--	--	<5.0	<5.0	<4.5	--	<4.5
456	n-Propylbenzene, water, total, ug/L	(77224)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
457	Organic carbon, water, filtered, mg/L	(00681)	0.23	--	0.6	0.55	0.24	--	0.75
458	o-Xylene, water, total, ug/L	(77135)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
459	Pentachlorodibenzofurans (all isomers), water, total, picograms per liter	(62222)	<0.888	--	<1.0	<0.845	<0.860	--	<0.834
460	Pentachlorodibenzo-p-dioxins (all isomers), water, total, picograms per liter	(62218)	<1.1	--	<1.1	<0.710	<1.1	--	<1.0
461	Phenanthrene, water, total, ug/L	(34461)	--	--	<1	<1	<0.91	--	<0.91
462	Phenol, water, total, ug/L	(34694)	--	--	<2.0	<2.0	<1.8	--	<1.8
463	Pyrene, water, total, ug/L	(34469)	--	--	<1.0	<1.0	<0.9	--	<0.9
464	sec-Butylbenzene, water, total, ug/L	(77350)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
465	Styrene, water, total, ug/L	(77128)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
466	tert-Butylbenzene, water, total, ug/L	(77353)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
467	Tetrachlorodibenzo-p-dioxins (all isomers), water, total, picograms per liter	(62217)	<1.4	--	<1.4	<1.1	<1.3	--	<1.1
468	Tetrachloroethene, water, total, ug/L	(34475)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
469	Tetrachloromethane, water, total, ug/L	(32102)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
470	Toluene, water, total, ug/L	(34010)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0

	Station name	Parameter	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 39	WE Ca 40	WE Ca 40	USGS TEST Main Lab at Research Park Dr
	Date	Code	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018	9/25/2018	9/18/2018
	Sample start time		1000	1400	1540	1545	1215	1500	1445
			Field Blank	Trip Blank	Environmental	Replicate	Environmental		Equipment Blank
471	trans-1,2-Dichloroethene, water, total, ug/L	(34546)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
472	Tribromomethane, water, total, ug/L	(32104)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
473	Trichloroethene, water, total, ug/L	(39180)	<1	<1	<1	<1	<1	--	<1
474	Trichlorofluoromethane, water, total, ug/L	(34488)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
475	Trichloromethane, water, total, ug/L	(32106)	1.9	2.2	<1.0	<1.0	<1.0	--	<1.0
476	Vinyl chloride, water, total, ug/L	(39175)	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
477	Xylene (all isomers), water, total, ug/L	(81551)	<3.0	<3.0	<3.0	<3.0	<3.0	--	<3.0
478	Radium-224, water, filtered, picocuries per liter	(50833)	R0.01	--	0.46	0.47	0.38	--	R-0.03
479	Radium-226, water, filtered, picocuries per liter	(09503)	R-0.004	--	0.36	0.33	0.48	--	R0.004
480	Radium-228, water, filtered, picocuries per liter	(81366)	R0.22	--	R0.36	0.41	0.8	--	0.4
481	Uranium (natural), water, filtered, ug/L	(22703)	<0.030	--	0.073	0.096	<0.030	--	<0.030

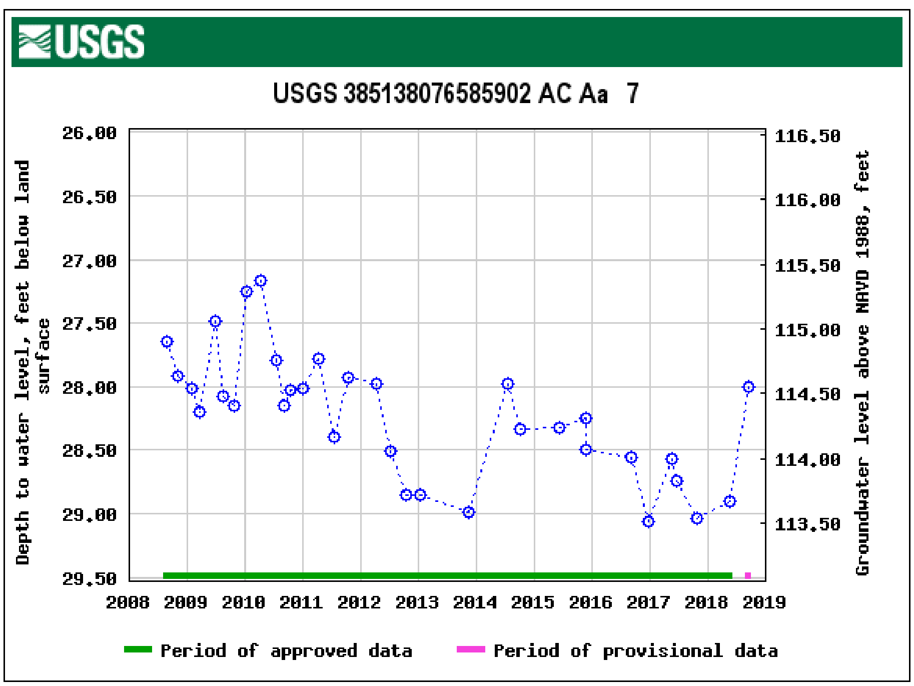
Appendix 5.4 Water Level Measurements for Monitoring Wells



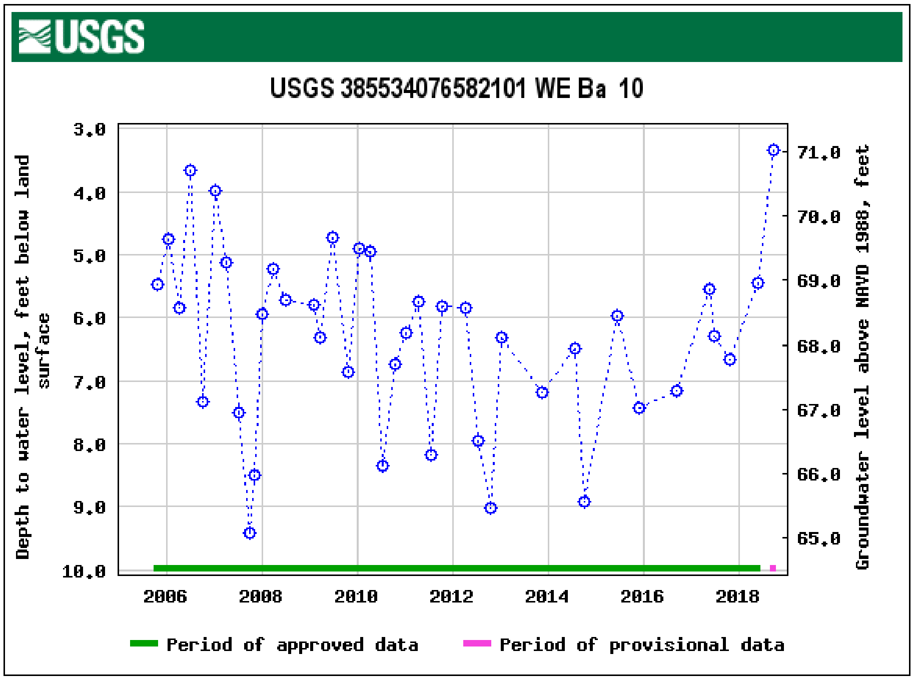
Graph of manual water-level measurements for well DCMW010-05 (AC Aa 2).



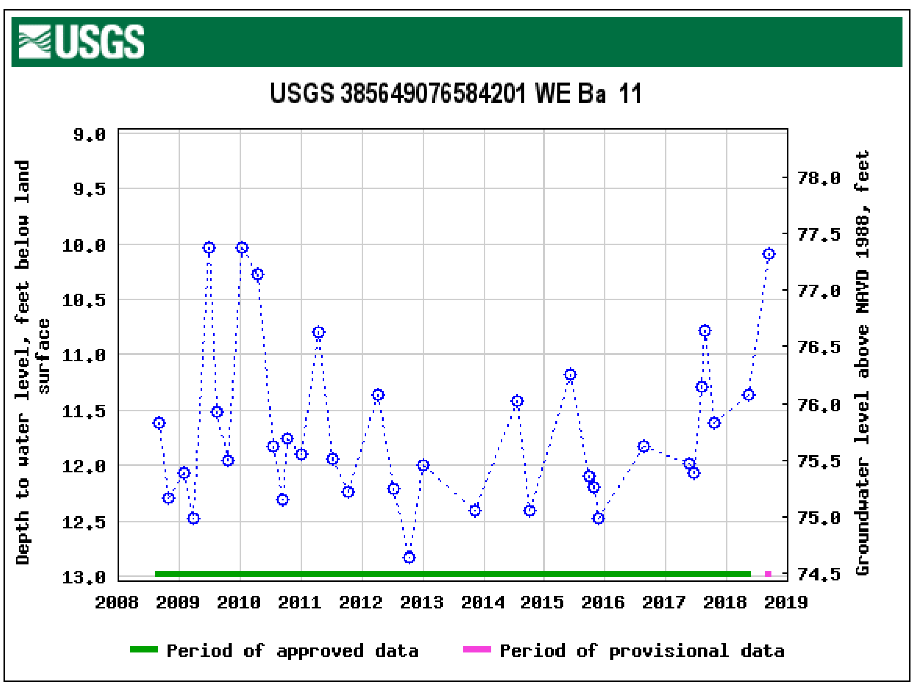
Graph of manual water-level measurements for well DCMW001-08 (AC Aa 6).



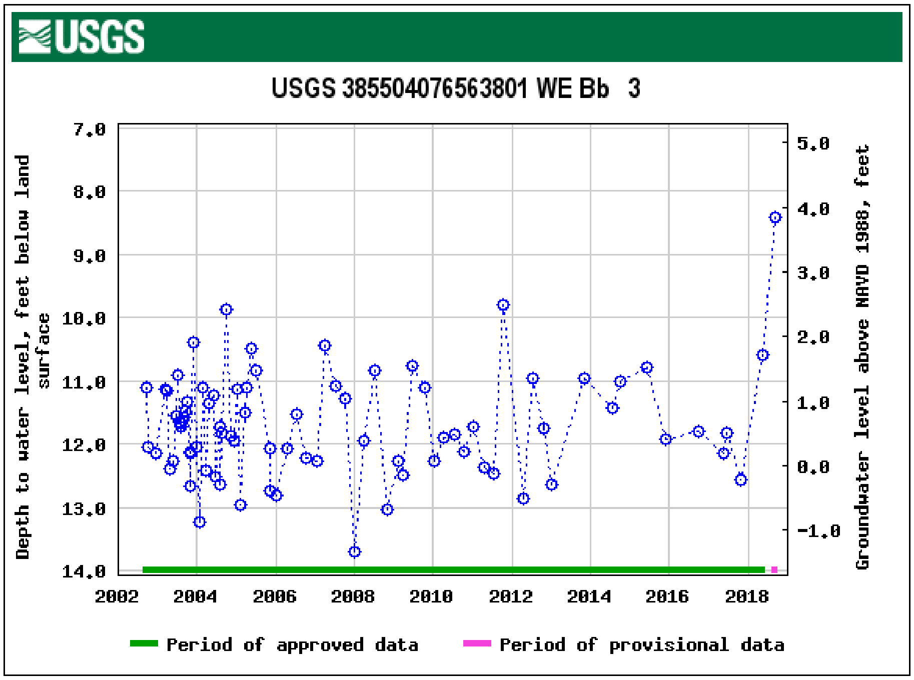
Graph of manual water-level measurements for well DCMW002-08 (AC Aa 7).



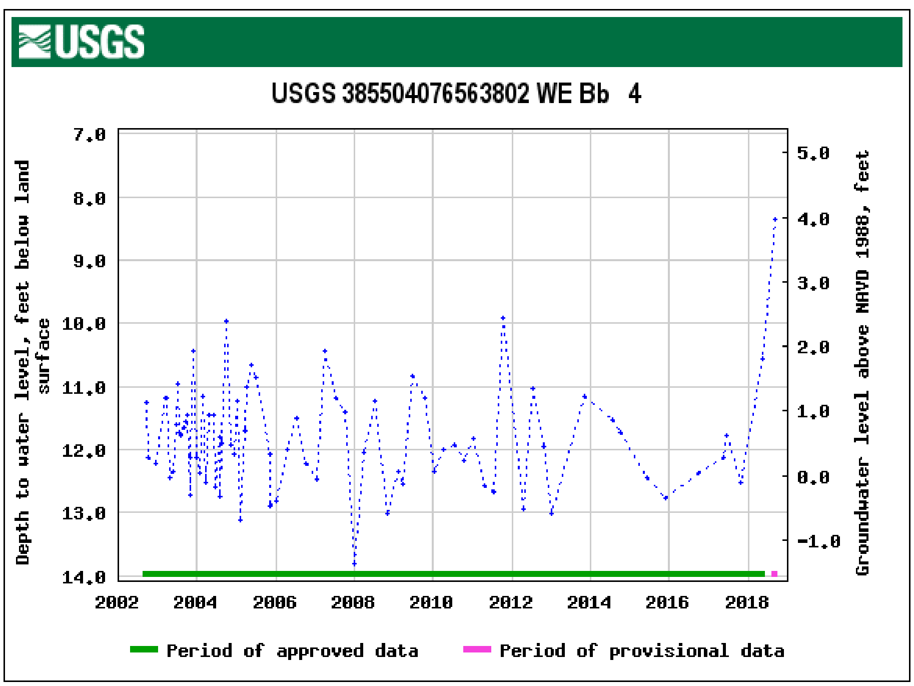
Graph of manual water-level measurements for well DCMW007-05 (WE Ba 10).



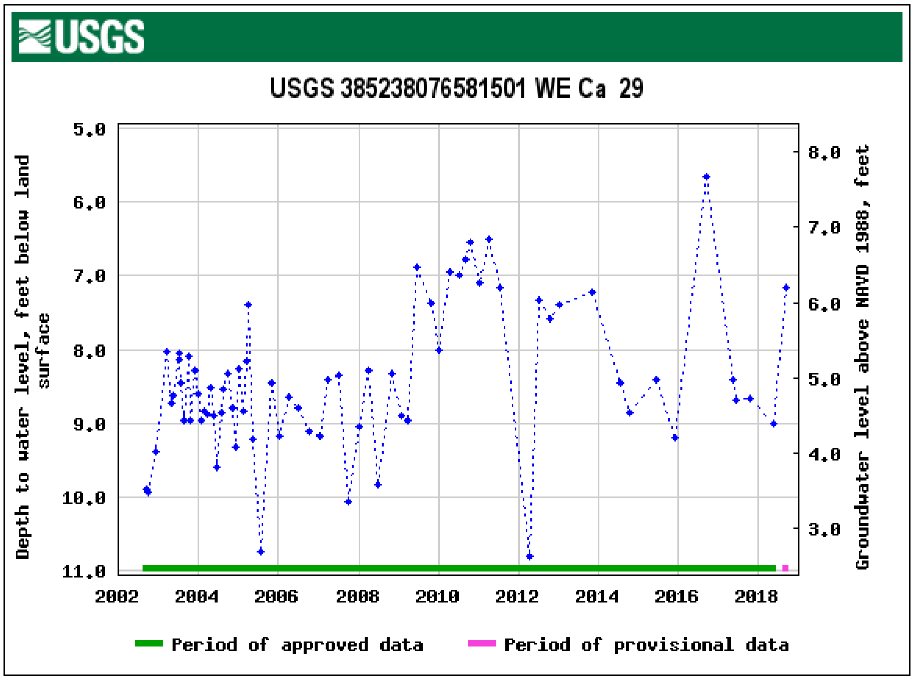
Graph of manual water-level measurements for well DCM003-8 (WE Ba 11).



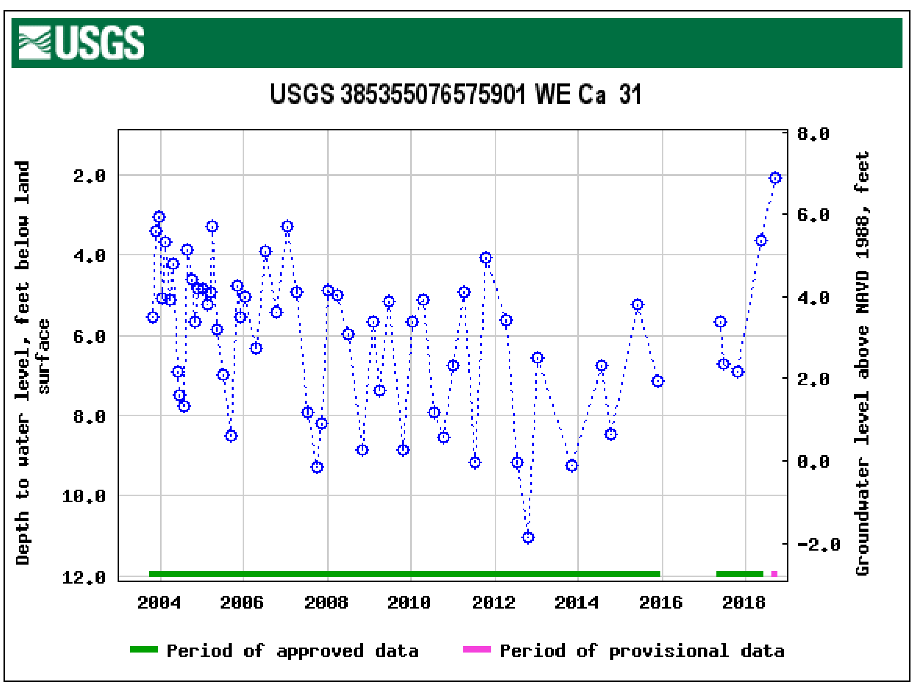
Graph of manual water-level measurements for well DCMW001-02 (WE Bb 3).



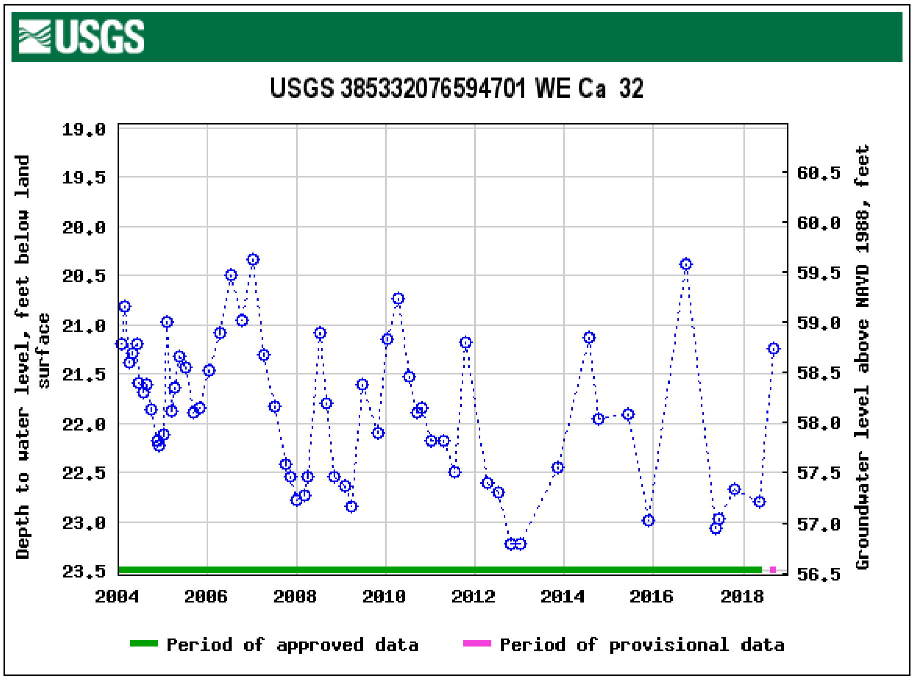
Graph of manual water-level measurements for well DCMW004-02 (WE Bb 4).



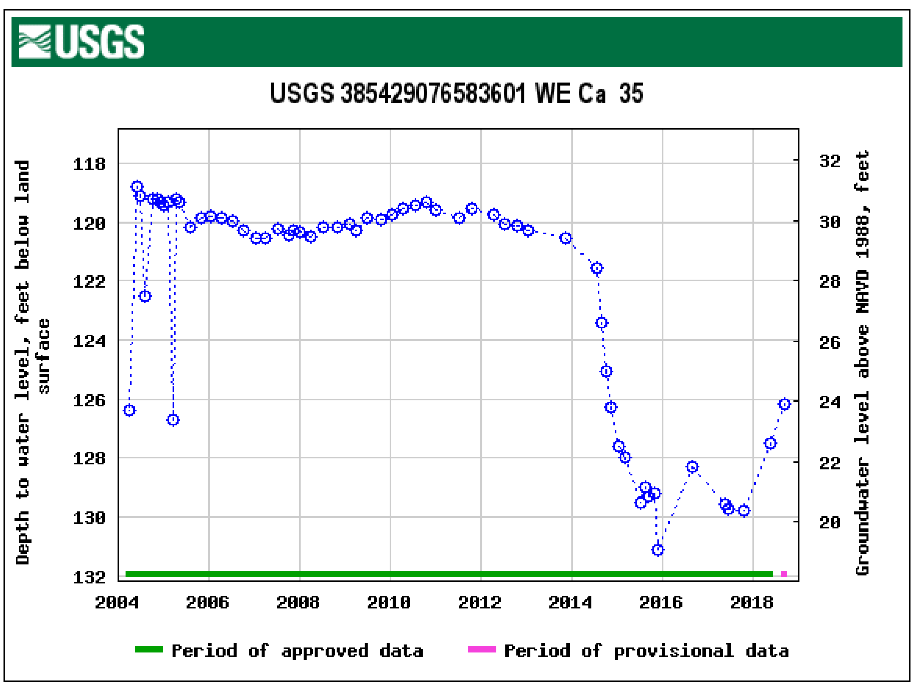
Graph of manual water-level measurements for well DCMW005-02 (WE Ca 29).



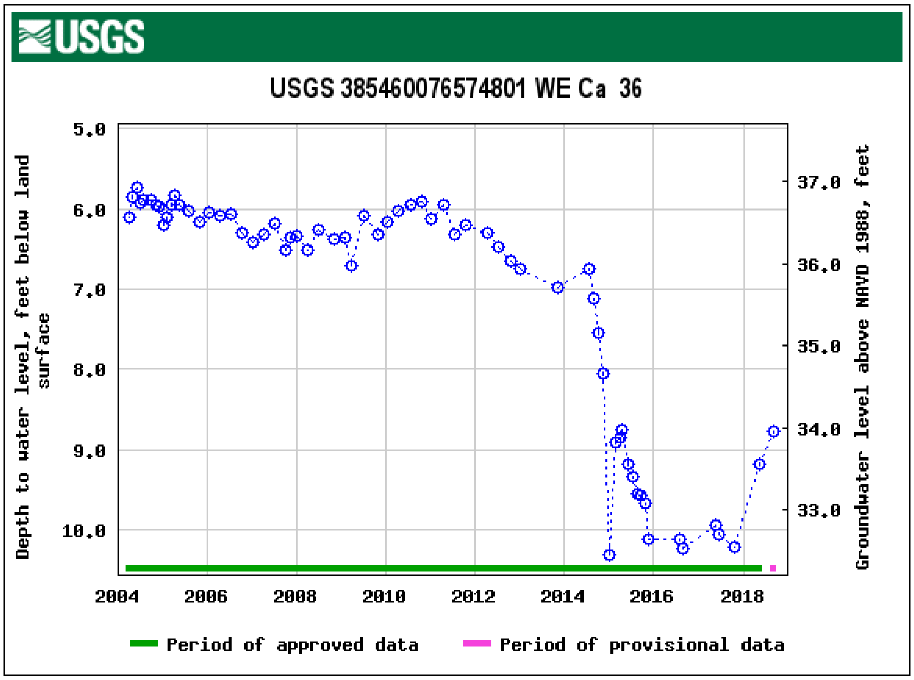
Graph of manual water-level measurements for well DCMW002-03 (WE Ca 31).



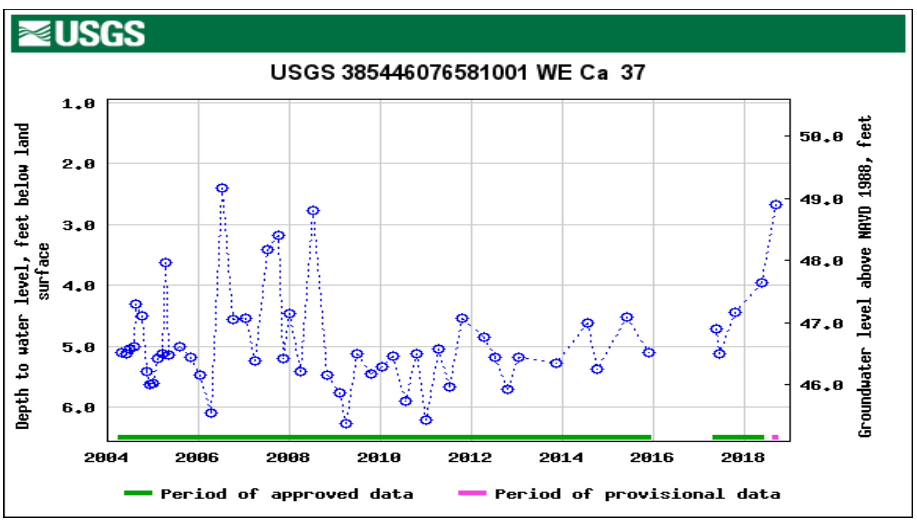
Graph of manual water-level measurements for well DCMW001-04 (WE Ca 32).



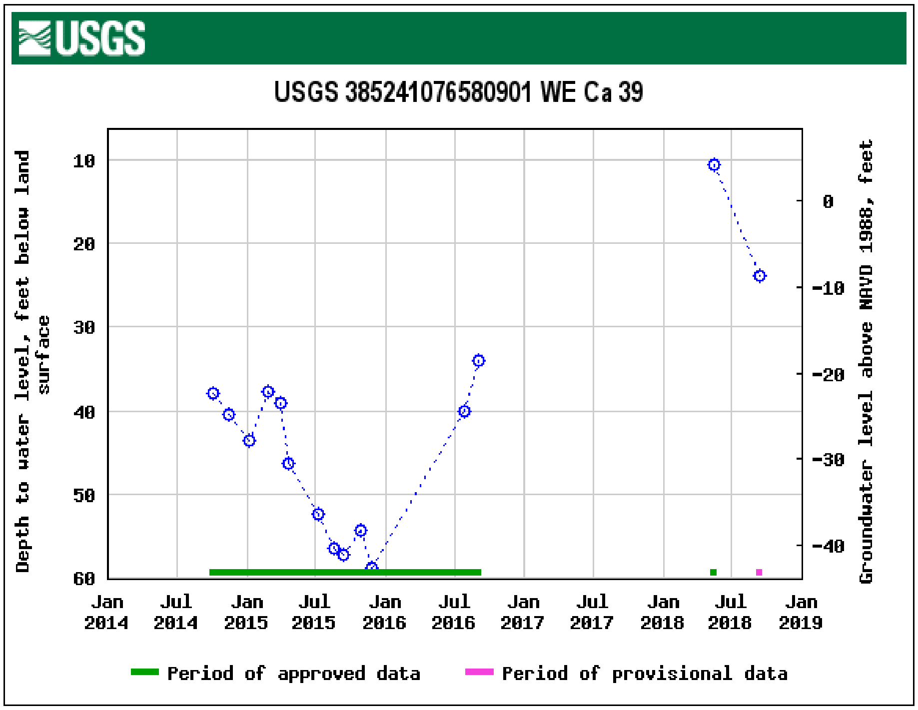
Graph of manual water-level measurements for well DCMW004-04 (WE Ca 35).



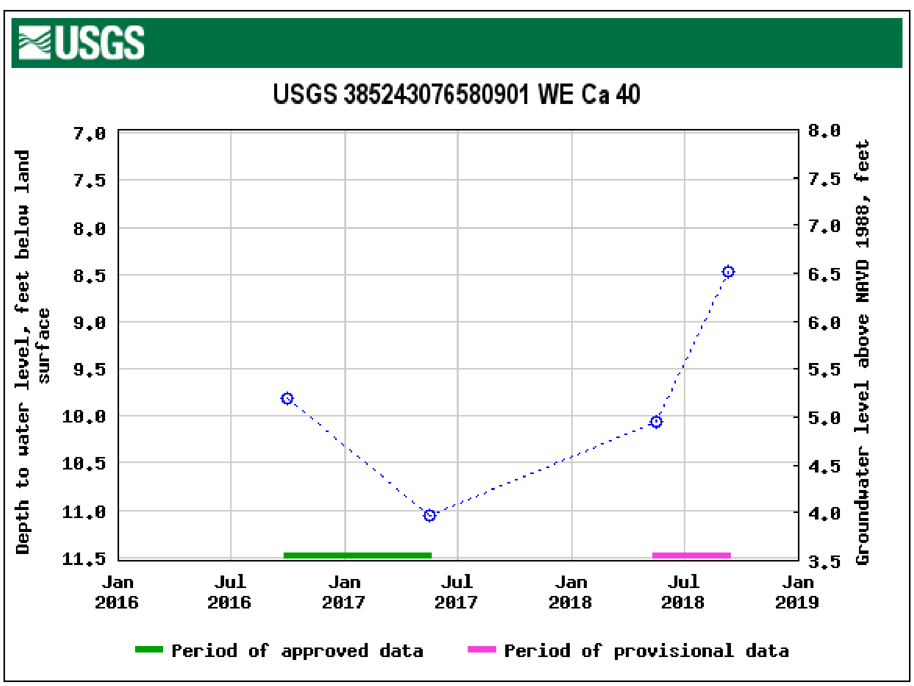
Graph of manual water-level measurements for well DCMW003-04 (WE Ca 36).



Graph of manual water-level measurements for well DCMW005-04 (WE Ca 37)



Graph of manual water-level measurements for well DCMW001-14 (WE Ca 39)



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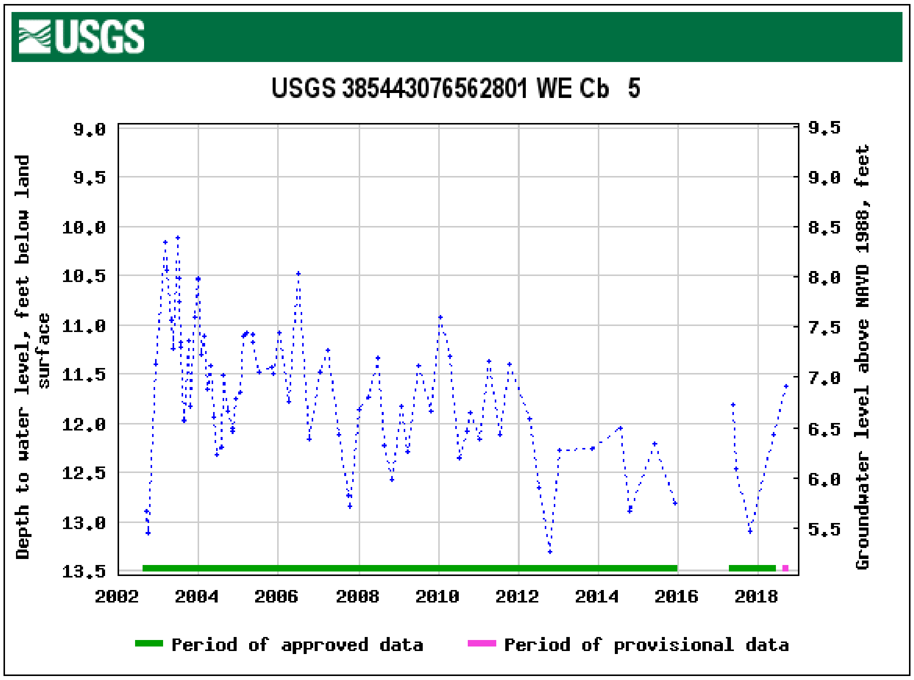
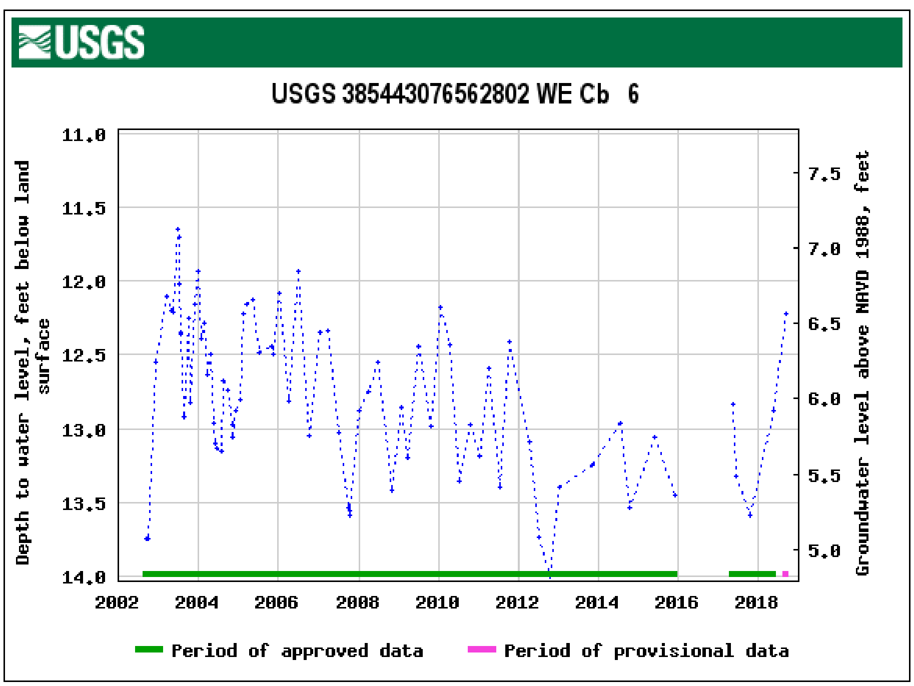


Graph of manual water-level measurements for well DCMW002-02 (WE Cb 5).



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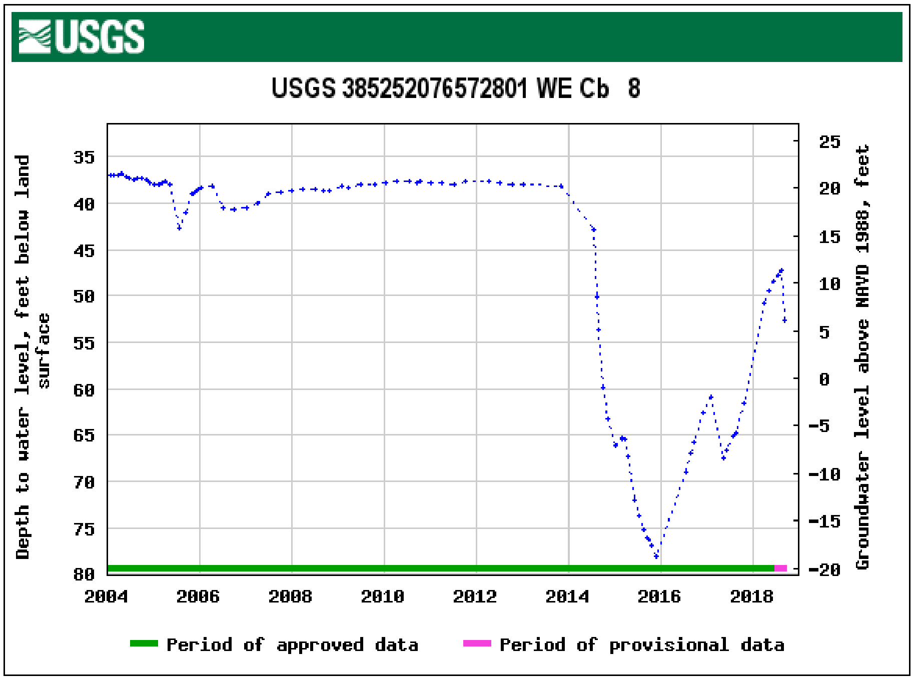

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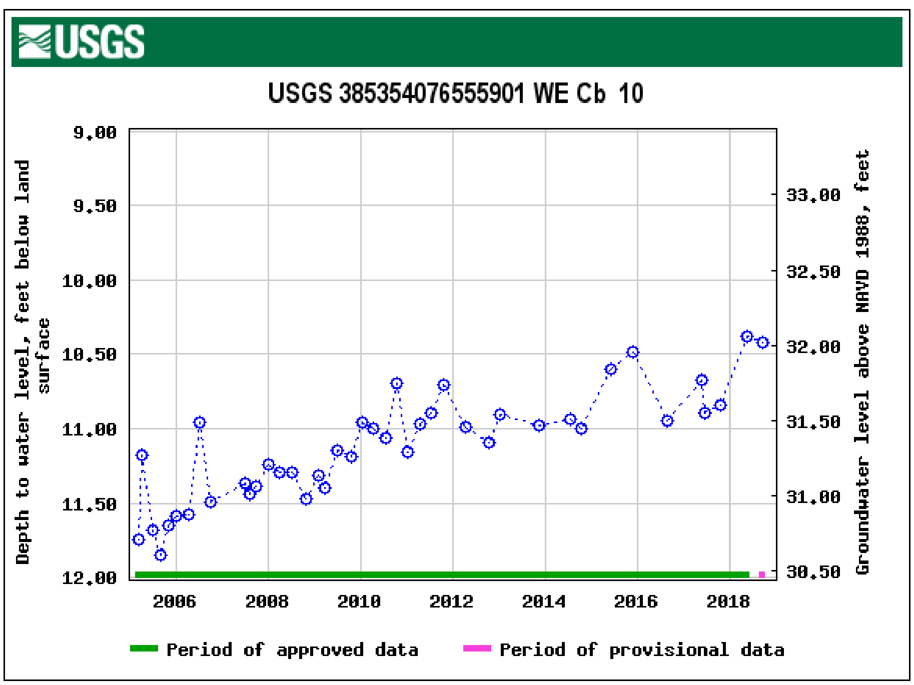
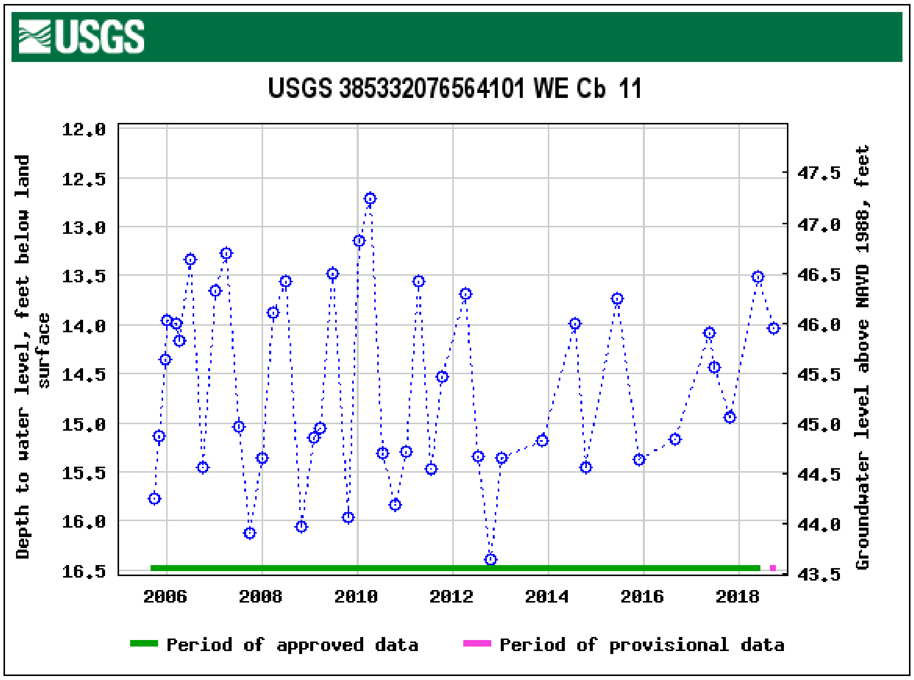
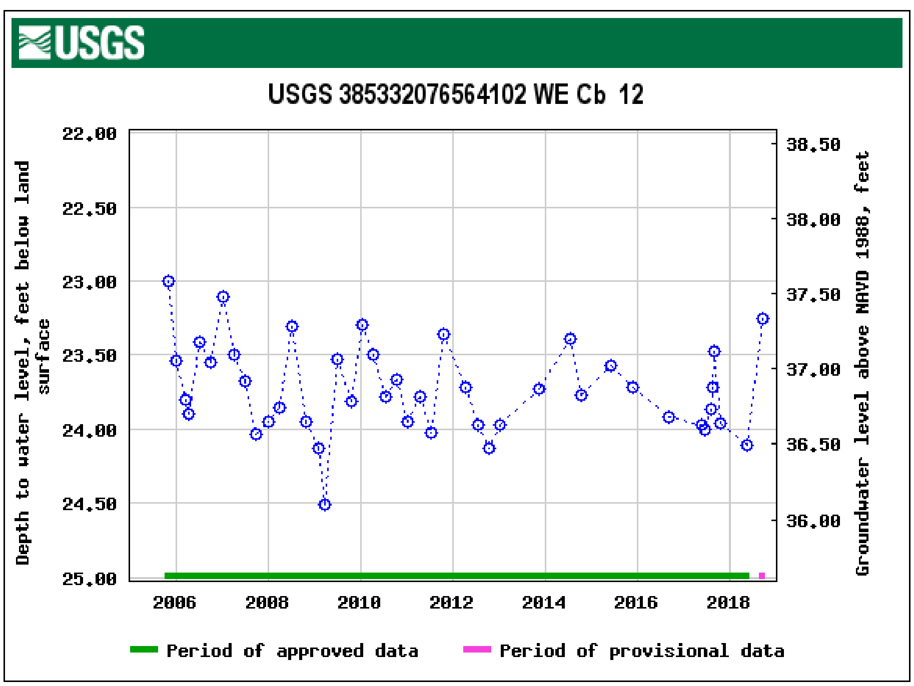


Graph of manual water-level measurements for well DCMW002-05 (WE Cb 10).



Graph of manual water-level measurements for well DCMW003-05 (WE Cb 11).



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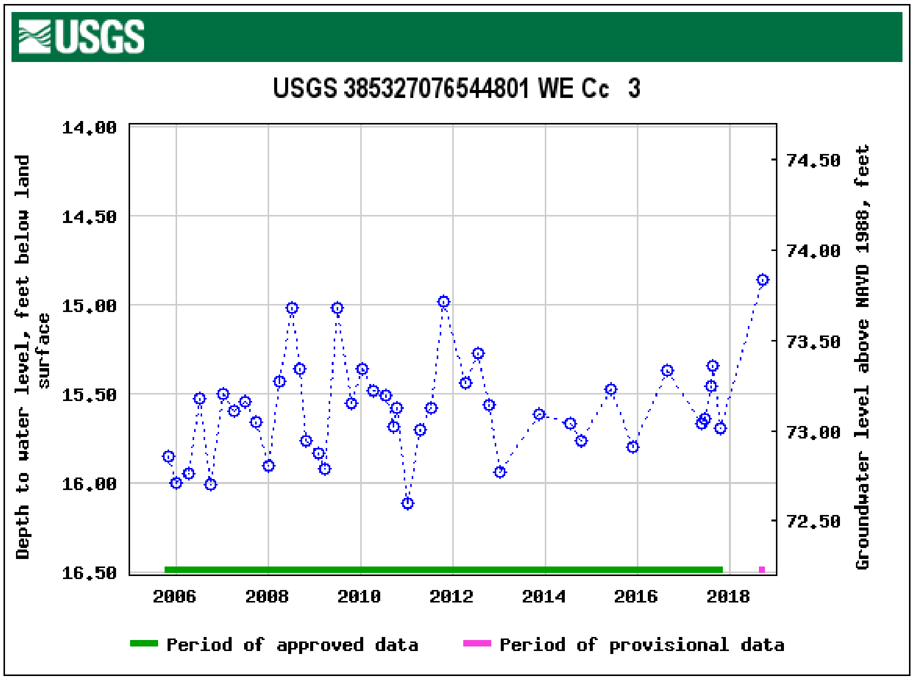

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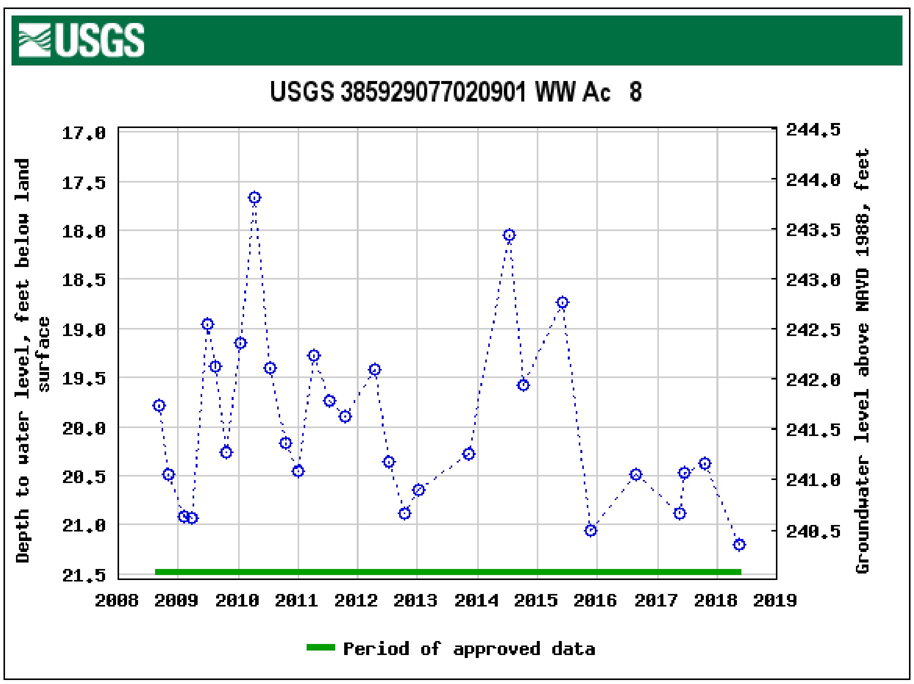

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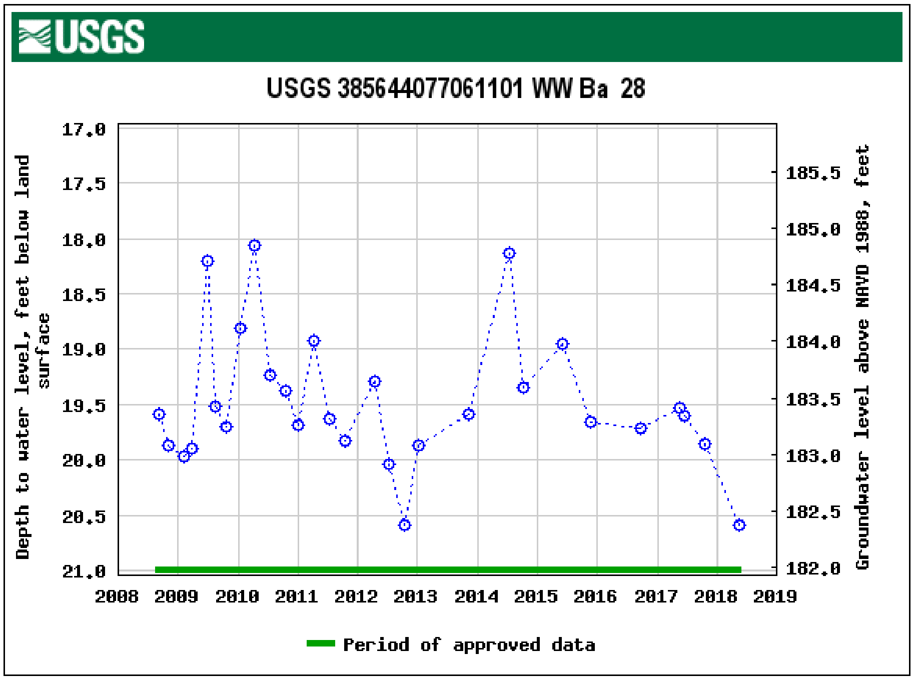

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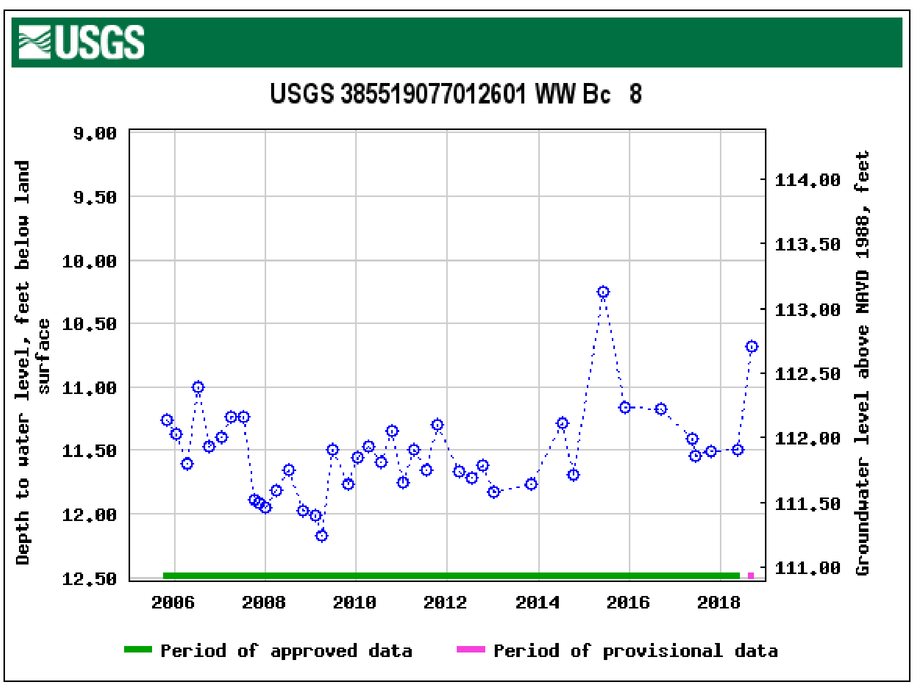

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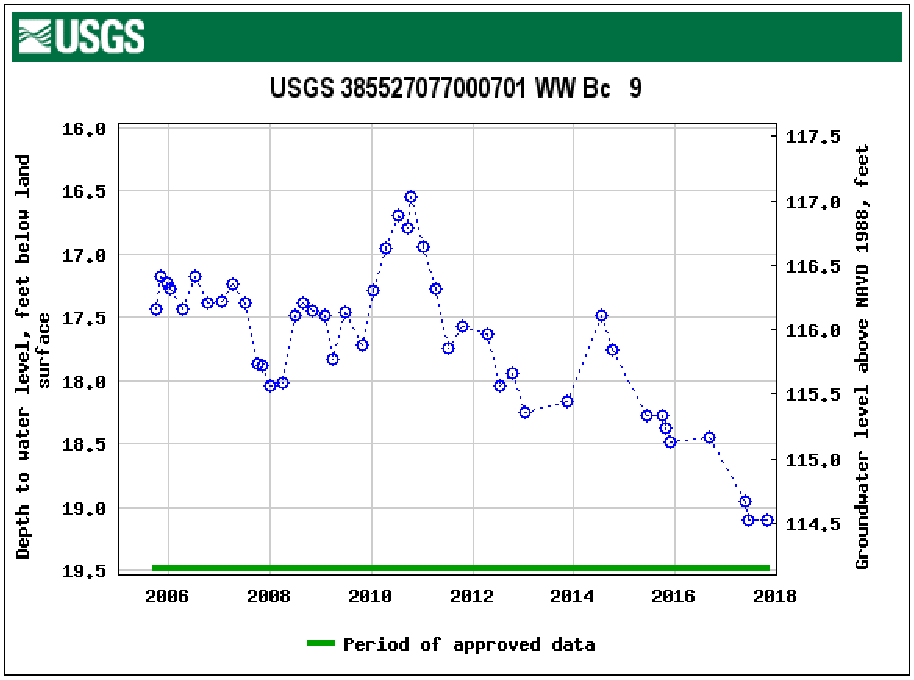

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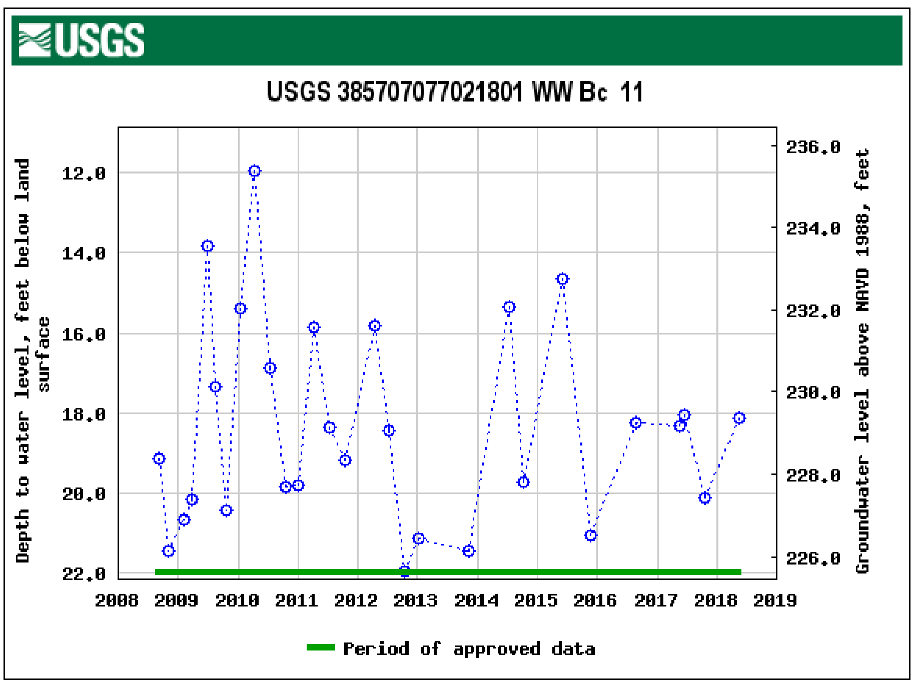

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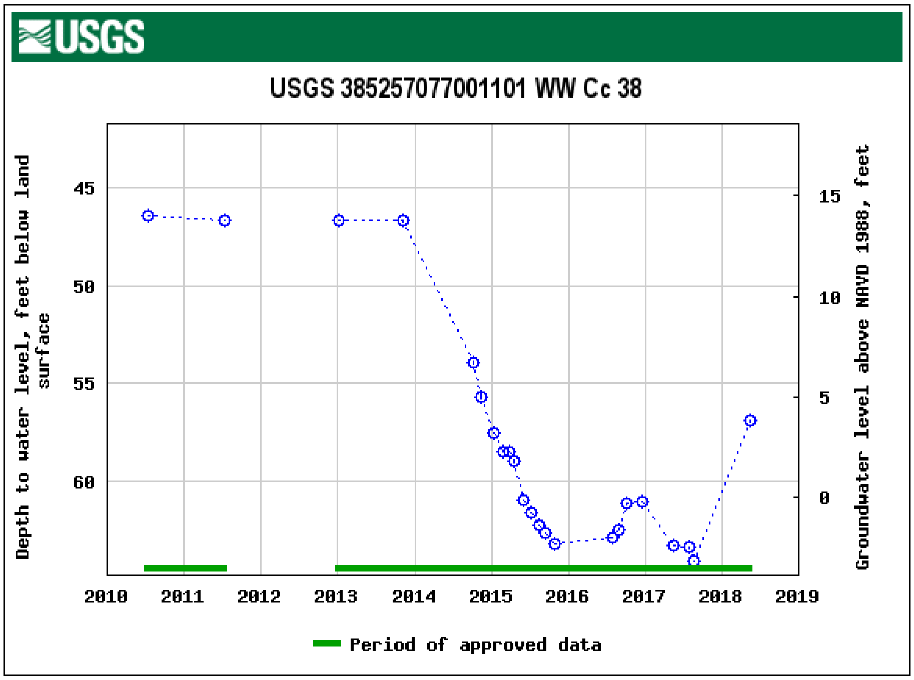

Graph of manual water-level measurements for well DCMW001-13 (WW Cc 38

Appendix 5.5 Major Sources of Groundwater Contamination

Sources	10 Highest-Priority Sources (✓)	Relative Priority	Factors[a]
Animal Feedlots	NA	—	—
Containers		Low	A, B, D, E
CERCLIS Sites	✓	High	A, B, D, E, F, G, H
De-icing Applications		Medium	A, D, F, G, H
Federal Superfund (NPL)	✓	High	A, B, D, E, F, G, H
Fill	✓	High	A, D, E, F, G, H
Graveyards		Medium	—
Landfills (permitted)	✓	Medium	A, B, D, E, F, G, H
Landfills (unpermitted)	✓	U	A, B, D, E, F, G, H
Material Transfer Operations		Medium	A, B, D, E, F, H
Material Stockpiles		Low	A, B
Mining and Mine Drainage	NA	—	—
Pesticide Applications	✓	Medium	A, B, C, F, G, H
Pipeline and Sewer Lines	✓	Medium	F, H
Radioactive Disposal Sites	NA	—	—
RCRA Sites	✓	Medium	A, B, D, E, F, G, H
Septic Tanks		—	—
Shallow Injection Wells		Medium	A, F, G
Storage Tanks (above ground)		Medium	A, B, D, F, G, H
Storage Tanks (underground)	✓	High	A, B, D, E, F, G, H
Storm Water Drainage Wells		Medium	E, F, I
Surface Impoundments		Low	A, B
Transportation of Materials	✓	Medium	A, B, C, D, E, G, H
Urban Runoff		Medium	F, H
Waste Tailings	NA	—	—
Waste Piles		Medium	A, D, E

A = Human health and/or environmental risk (toxicity)
B = Size of the population at risk
C = Location of the sources relative to drinking water sources

D = Number and/or size of contaminant sources
E = Hydrogeologic sensitivity
F = State findings, other findings
G = Documented from mandatory reporting
H = Geographic distribution/occurrence
I = Assigned for pipelines and sewer lines and is a combination of the age and construction material of the lines (in D.C., there still are brick lines at least 100 years old).
NA = Not Applicable
— = Not a Priority

[a] Unknown. The locations and nature of the materials disposed in unpermitted landfills are not yet known.

Appendix 5.6 Groundwater Protection Programs

Programs or Activities	**Check**	**Implementation Status**	**Responsible State Agency**
Ambient groundwater monitoring system	✓	Partly established	DOEE
Aquifer vulnerability assessment (1)	✓	Fully established	DOEE
Aquifer mapping (2)	✓	Under development	DOEE
Aquifer characterization	✓	Partly developed	DOEE
Comprehensive data management system (3)	✓	Partly developed	DOEE
Emergency Response	✓	Fully established	HSEMA
EPA-endorsed Core Comprehensive State Ground Water Protection Program (CSGWPP)	✓	Under development	DOEE
Ground water discharge permits	✓	Under development	DOEE
Groundwater Best Management Practices	✓	Under development	DOEE
Ground water legislation	✓	Fully established	DOEE
Ground water classification	✓	Fully established	DOEE
Ground water quality standards	✓	Fully established	DOEE
Interagency coordination for ground water protection initiatives	✓	Under development	DOEE
Land Remediation and Development (Brownfields Revitalization Program)	✓	Fully established	DOEE
Nonpoint Source Controls	✓	Partly developed	DOEE
Pesticide State Management Plan	✓	Fully established	DOEE
Pollution Prevention Program	✓	Under development	DOEE
State RCRA Program incorporating more stringent requirements than RCRA Primacy (except for corrective action)	✓	Fully established	DOEE
State septic system regulations			
Underground storage tank installation requirements	✓	Fully established	DOEE
Underground Storage Tank Remediation Fund	✓	Fully established	DOEE
Underground Storage Tank Permit Program	✓	Fully established	DOEE
Underground Injection Control Program		Joint oversight	DOEE & EPA
Vulnerability assessment for drinking water/wellhead protection	✓	Fully established	DOEE
Well abandonment regulations	✓	Fully established	DOEE
Wellhead Protection Program (U.S. EPA-approved)	✓		
Well installation regulations	✓	Fully established	DOEE

HSEMA – Homeland Security Emergency Management Agency
DOEE –Department of Energy and Environment Definitions

AASHTO - American Association of State Highway & Transportation Officials

Anti-seep collar - An impermeable diaphragm usually of sheet metal or concrete constructed at intervals within the zone of saturation along the conduit of a principal spillway to increase the seepage length along the conduit and thereby prevent piping or seepage along the conduit.

Anti-vortex device - A device designed and placed on the top of a riser or at the entrance of a pipe to prevent the formation of a vortex in the water at the entrance.

Apron - A floor or lining to protect a surface from erosion, for example, the pavement below chutes, spillways, or at the toes of dams.

Base flow - The stream discharge from groundwater accretion.

Best management practice (BMP) - Structural or non-structural practice that minimizes the impact of stormwater runoff on receiving waterbodies and other environmental resources, especially by reducing runoff volume and the pollutant loads carried in that runoff.

Building permit - Authorization for construction activity issued by the District of Columbia Department of Consumer and Regulatory Affairs.

Clearing - The removal of trees and brush from the land excluding the ordinary mowing of grass, pruning of trees, or other forms of long-term landscape maintenance.

Common plan of development - Multiple, separate, and distinct land-disturbing, substantial improvement, or other construction activities taking place under, or to further, a single, larger plan, although they may be taking place at different times on different schedules.

Construction - Activity conducted for the:

(a) Building, renovating, modifying, or razing of a structure; or

(b) Movement or shaping of earth, sediment, or a natural or built feature

   a. **Construction general permit (CGP)** - An NPDES general permit that regulates stormwater discharges from construction activities that disturb one or more acres, or smaller sites that are part of larger common plan of development or sale that disturb one or more acres.

   b. **Cut** - An act by which soil or rock is dug into, quarried, uncovered, removed, displaced, or relocated and the conditions resulting from those actions.

Demolition - The removal of part or all of a building, structure, or built land cover.

Department - The District of Columbia Department of Energy and Environment or its agent.

Dewatering - Removing water from an area or the environment using an approved technology or method, such as pumping.

DCMR - The District of Columbia Municipal Regulations.

DDOT - The District Department of Transportation.

Director - The Director of the Department of Energy and Environment.

District - The District of Columbia.

Disturbed area - An area in which the natural vegetative soil cover has been removed or altered and is susceptible to erosion.

DOEE - The Department of Energy and Environment.

EPA - The United States Environmental Protection Agency.

Erosion - The process by which the ground surface, including soil and deposited material, is worn away by the action of wind, water, ice, or gravity.

Erosion and sediment control (ESC) - Devices and conservation measures used to reduce or eliminate soil particles from leaving a land area.

Excavation - An act by which soil or rock is cut into, dug, quarried, uncovered, removed, displaced, or relocated and the conditions resulting from those actions.

Exposed area - Land that has been disturbed or land over which unstabilized soil or other erodible material is placed.

Grading - Causing disturbance of the earth, including excavating, filling, stockpiling of earth materials, grubbing, root mat or topsoil disturbance, or any combination of them.

Limits of disturbance (LOD) - The boundary within which all land grading, construction, landscaping, and related activities occurs.

National Pollutant Discharge Elimination System (NPDES) - The NPDES permit program addresses water pollution by regulating point sources that discharge pollutants to the waters of the United States.

Notice of intent (NOI) - A form required for authorization of coverage under the Construction General Permit.

Peak discharge - The maximum rate of flow of water at a given point and time resulting from a storm event.

Public right-of-way (PROW) - The surface, the air space above the surface (including air space immediately adjacent to a private structure located on public space or in a public right-of-way), and the area below the surface of any public street, bridge, tunnel, highway, lane, path, alley, sidewalk, or boulevard.

Raze - The complete removal of a building or other structure down to the ground.

Responsible person - Construction personnel knowledgeable in the principles and practices of soil erosion and sediment control and certified by a Department-approved soil erosion and sedimentation control training program to assess conditions at the construction site that would impact the effectiveness of a soil-erosion or sediment-control measure on the site.

Runoff - That portion of precipitation (including snow-melt) which travels over the land surface, and also from rooftops, either as sheetflow or as channel flow, in small trickles and streams, into the main water courses.

Safety and Data Sheet (SDS) - A document providing guidance on handling a hazardous substance, along with its composition and physical and chemical properties.

Sediment - Soil, including soil transported or deposited by human activity or the action of wind, water, ice, or gravity.

Sedimentation - The deposition or transportation of soil or other surface materials from one place to another as a result of an erosion process.

Soil - All earth material of whatever origin that overlies bedrock and may include the decomposed zone of bedrock which can be readily excavated by mechanical equipment.

Soil erosion and sediment control plan - A set of drawings, calculations, specifications, details, and supporting documents related to minimizing or eliminating erosion and off-site sedimentation caused by stormwater on a construction site. It includes information on construction, installation, operation, and maintenance.

Soils report - A geotechnical report addressing all soil erosion and sediment control-related soil attributes, including but not limited to site soil drainage and stability.

Stormwater management plan - A set of drawings, calculations, specifications, details, and supporting documents related to the management of stormwater for a site, which includes information on construction, installation, operation, and maintenance.

Stormwater pollution prevention plan (SWPPP) - A document that identifies potential sources of stormwater pollution at a construction site, describes practices to reduce pollutants in stormwater discharge from the site, and may identify procedures to achieve compliance.

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Attachments

1. Attachment 1: DOEE Reevaluation of Toxic Impairments
2. Attachment 2: Good Cause Justifications for 303(d) List Categories 3,4A, and 4C

Attachment 1

Reevaluation of Impairment Causes and TMDLs for Toxics in District of Columbia Waterbodies

Draft - March 2020

Prepared by

LimnoTech

Water Environment | Scientists Engineers

Michael P. Sullivan LLC

Environmental Consulting in Hydrology and Urban Water Quality

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Executive Summary

This reevaluation of impairment caused by toxic pollutants (metals and organic compounds) and the associated TMDLs developed to control these pollutants was undertaken to resolve long-standing issues surrounding the District of Columbia 303(d) list of impaired and threatened waters. The primary objective of the reevaluation presented in this report is to review current and past impairment causes attributed to toxics in the District to determine if they are supported by adequate data. A related objective is to use the results of the reevaluation of impairment causes to determine the necessity of TMDLs for toxics in individual waterbodies.

Data

A review of the original impairment listing from the late 1990s and onward revealed that widespread impairment due to toxics was presumed to be present based on physical habitat and macroinvertebrate assessment findings (Banta, 1993). Very little water column data for toxics was available to support this presumption. Nevertheless, TMDLs for a broad variety of metals and organic compounds were developed for mainstem and tributary segments during 2003 and 2004.

Data collection focused on toxics was initiated by DOEE and EPA in 2013 when it was recognized that many toxics TMDLs were based on very limited data. This led to the revision of TMDLs in the Potomac and Rock Creek tributaries (DOEE, 2017) as well as to a draft revision of TMDLs in the Anacostia watershed (DOEE, 2021). However, the water quality assessment methods (e.g., the methods for confirming existing impairments) supporting these TMDL revisions were not consistent with best practices. In many instances it appears that impairment was “confirmed” by one sample exceeding the water quality criterion, while EPA guidance and DOEE’s updated impairment assessment methodology indicate that impairment or non-attainment occurs where there is more than one exceedance of the water quality criteria within a three-year period.

In order to reevaluate existing toxics impairments, the entire historical dataset of toxics data from 1990 through 2021 was compiled and analyzed. This process was aided by the presence of a large body of toxics data collected during the assessment period (2016-2021) by DOEE, EPA and the USGS. The relative abundance of this data and its broad availability across mainstem and tributary segments enabled a detailed assessment of toxic impairment that could not have been undertaken previously. The recent adoption of the District of Columbia Surface Water Assessment and Listing Methodology (DOEE, 2022) provided an improved framework and decision rules for determining impairment and designated use support.

Key Findings

The reevaluation of toxics identified impaired waterbody/pollutant combinations where there is clear evidence of a toxic pollutant cause. It provides a data-driven assessment of where and when impairment and non-support of designated uses occurs due to toxic pollutants. Key findings are:

- The reevaluation found that the toxic impairment associated with 39 waterbody/pollutant combinations (28% of the Category 4a listings in the 2020 IR) was corroborated by data in this reevaluation.
- The reevaluation found that the toxic impairment associated with 98 waterbody/pollutant combinations (72% of the Category 4a listings in the 2020 IR) was not corroborated by data in this reevaluation.
- The reevaluation found 19 new waterbody/pollutant combinations that are impaired but were not previously identified as impaired in the 2020 IR.

The importance of these finding is broad, and it has major ramifications for the 2022 IR. On a city-wide basis, fewer instances of impairment were found than previously believed. This suggests that there is good cause to remove pollutant causes in the IR and withdraw many of the TMDLs documented under Category 4a in the 2020 IR. However, the reevaluation also found a new set of impairments that are candidates for the Category 5 list of impaired waters where a TMDL is needed.

In summary, these findings bring together good data and evidenced-based assessment, a combination that adds clarity and confidence to the 303(d) listing and the impaired waters restoration process.

Introduction

Under Section 305(b) of the CWA, states, territories, and other jurisdictions of the United States are required to submit reports on the quality of their waters to the U.S. Environmental Protection Agency (EPA) every two years. The District began to submit biennial reports to EPA in 1992 (DCRA, 1992). Beginning in 2004, EPA recommended delivery of a single water quality monitoring and assessment report (the Integrated Report or IR) that combines the Section 305(b) report and the Section 303(d) list of impaired waters (EPA, 2002) every even-numbered year. The most recent Water Quality Assessment 2020 Integrated Report for the District was delivered to EPA in 2020 (DOEE, 2020).

Amongst other things, the Integrated Reports include a surface water assessment that evaluates whether designated uses are supported and identifies impaired waterbodies (i.e., waterbodies or waterbody segments that do not meet the appropriate District Water Quality Standards [WQS] for their assigned designated uses). Use support determinations are primarily made based on physical, biological, chemical, and bacteriological data. Observations related to narrative criteria also play a role. In addition to the determination of use attainment/identification of impairment, causes and sources of impairment are evaluated and the specific pollutants causing impairment in a waterbody or waterbody segment are identified when possible.

Following EPA guidance (U.S. EPA, 2018), a five-category approach for classifying designated use attainment is applied. Every waterbody is placed into one or more of the five IR categories based on the attainment of each designated use for that waterbody. The categories are:

> **Category 1**: All designated uses are supported; no use is threatened.
>
> **Category 2**: Available data and/or information indicate that some (at least three), but not all, designated uses are supported.
>
> **Category 3**: There is insufficient available data and/or information to make a use support determination.
>
> **Category 4**: Available data and/or information indicate that at least one designated use is not supported or is threatened, but a TMDL is not needed. Category 4 and its subcategories may include TMDLs that may or may not need to be revised for one reason or another, including court orders, consent decrees, and availability of new information. There are three subcategories of Category 4, as follows:
>
>> <u>Category 4a</u> - A State developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination.
>>
>> <u>Category 4b</u> - Other required control measures are expected to result in the attainment of an applicable WQS in a reasonable period of time.

Category 4c - The non-attainment of any applicable WQS for the segment is the result of pollution and is not caused by a pollutant[1].

Category 5 (the 305d list): Available data and/or information indicate that at least one designated use is not supported or is threatened, and a TMDL is needed.

As described above under Categories 4 and 5, waters identified as impaired require a total maximum daily load (TMDL) or alternative restoration plan to reduce pollutant loadings and restore the waterbody. TMDLs are typically completed to determine the load reductions of specific pollutants required to meet WQS. The assumption is that reducing loads of specific pollutants that have been identified as causing impairments will allow the water to attain its designated uses. This presumes that the pollutants causing impairments are known and have been correctly identified. However, over time the District has generally acknowledged in surface water assessments, TMDL documentation, and TMDL modeling reports that its original identification of "toxic" impairments and subsequent toxics TMDLs (e.g., metals, organics, pesticides, PCBs) in the tributaries were based on very limited data.

The primary objective of the reevaluation presented in this document is to review the current and past impairment causes attributed to toxics in the District to determine if they are supported by adequate data. A related objective is to use the results of the reevaluation of impairment causes to determine the necessity of TMDLs for toxics in individual waterbodies. If the reevaluation shows that current or historic impairments by specific pollutants are not supported by adequate data, TMDLs can be withdrawn or revised to remove WLAs for those pollutants. This would potentially reduce the burden on DOEE to address pollutants that have not been confirmed as causing impairment, and allow DOEE to focus its resources on those pollutants that have been confirmed as causing impairment.

Reevaluation is centered on the water quality data aspect of surface water assessment because water quality data can confirm exceedances of water quality criteria (and thus impairments by toxics) directly. This contrasts with other types of data used in assessments (e.g., biological or physical habitat data) where exceedances of water quality criteria and impairments caused by specific pollutants cannot be evaluated directly.

This reevaluation does not address biological, physical habitat, fish consumption, or narrative data that are also used for assessment. Comprehensive surface water assessment analysis that utilizes a combination of all of these datasets (e.g., water column data, physical habitat assessment, macroinvertebrate assessment, etc.) is accomplished through implementation of the District of Columbia Draft Surface Water Assessment and Listing Methodology (DOEE, 2022) and is reported biennially in the IRs.

The remainder of this report is organized as follows:

- History of Impairment Listings and TMDLs for Toxics

[1] Section 502(19) of the Clean Water Act defines pollution as "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water." Section 1199 of the District's WQS defines "pollution" the same way, and defines "pollutant" as any "substance that may alter or interfere with the restoration or maintenance of the chemical, physical, radiological, or biological integrity of the waters of the District."

- Inferences Drawn from the History of Impairment Listings and TMDLs for Toxics
- Reevaluation of Impairment Causes and TMDLs for Toxics
- Recommendations for the 2022 IR
- Appendices

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History of Impairment Listings and TMDLs for Toxics

Early Listings and TMDLs

Dating as far back as 1996 (DCRA, 1996), each waterbody in the District was identified as impaired for at least one or more of its designated uses. More recently, all 36 waterbody segments assessed for the 2020 IR were found to be impaired for one or more uses (DOEE, 2020). Much of the widespread impairment of Class C and Class D uses over the last 25 years has been attributed to toxics.

One of the first suggestions that the tributaries in the District are impaired by toxic pollutants was made by Banta in 1993 (Banta, 1993). Based upon biological and habitat assessment surveys, Banta noted that:

> *"Almost every stream in Washington shows signs of toxic pollution."*

And

> *"Toxic pollution is almost universal."*

Building upon the findings and suggestions reported by Banta, the 1996 District of Columbia Water Quality Assessment (DCRA, 1996) summarized that "total toxics" are a major cause of impairment. This document further notes that:

> *"As the focus of water quality studies have shifted to toxic pollutants and biological indicators, waterbodies that were at least partially supporting of some of their designated uses in the past are now not supporting those uses."*

Appendix G of this 1996 Water Quality Assessment document contains individual waterbody water quality assessments for mainstem segments of the Anacostia and Potomac rivers, District tributaries, and other waterbodies like the Chesapeake and Ohio Canal and the Tidal Basin. In many instances, the cause of non-attainment of the Class C aquatic life use in tributaries is listed as metals, total toxics, or unknown toxicity. Some instream water quality data for metals was available for assessment against water quality criteria. However, there did not appear to be any instream data available for pesticides and other organic compounds, and there is no discussion of the use of water quality data to support the findings of toxic impairments for any individual waterbody. In the absence of robust instream data, the District used observations of biological indicators to assess impairments of Class C aquatic life use, as noted above. While biological indicators are a powerful tool in assessing attainment of designated uses, they do not provide information on the specific pollutant or pollutants that may be causing or contributing to observed declines in the biological indicators. Thus, the District continued to rely on the statements by Banta and its observations of biological impairment to assume that toxics were impairing Class C aquatic life uses.

The dependency on biological and habitat data for assessment of tributaries remained in place over several biennial reporting cycles. The 2002 District of Columbia Water Quality Assessment Report (DOH, 2002) states that:

> *"In some cases, the District relies on biological/habitat data, instead of chemical/physical standards, to make aquatic life use (Class C) decisions. When streams with both conventional pollutant data and biological data are evaluated, the biological data are the overriding factor in aquatic life use decisions."*

Despite the fact that there was no instream data for pesticides and organic compounds, the 303(d) lists for 1996, 1998, and 2002 included organics and toxics as pollutants of concern (e.g., as causes of impairment). It was continually presumed that these toxics were present and impacting the biological community (and aquatic life use) based on Banta's findings. This idea was subsequently reinforced based on fish tissue and sediment analysis from the tidal Anacostia River that was analyzed as part of the development of TMDLs. As discussed under "Chemicals of Concern" in the *District of Columbia Final Total Maximum Daily Loads for organics and metals in Broad Branch, Dumbarton Oaks, Fenwick Branch, Klingle Valley Creek, Luzon Branch, Melvin Hazen Valley Branch, Normanstone Creek, Pinehurst Creek, Piney Branch, Portal Branch, and Soapstone Creek* (DOH, 2004),

> *"Because of general lack of data in the District's tributaries, the list of chemicals of concern for this TMDL were determined from data derived from fish tissue and sediment analysis in the Anacostia River. The contaminants of concern that were discovered above the allowed concentration were identified and were included in this TMDL. Sediment samples were also collected and analyzed for the contaminants of concern. Those that indicated high levels of exceedance above the screening criteria were identified as contaminants of concern and included in the TMDL."*

The TMDL goes on to note that these and other studies had been used to identify

> "*a group of most likely and probable likely chemicals of concern…with the most likely chemicals being cadmium, copper, lead, mercury, and zinc; and the probable likely chemicals being chlordane, DDT, endosulfan, heptachlor epoxide, hexachlorobenzene, total PAHs, and total PCBs."*

This TMDL report documented the development of TMDLs for chlordane, DDT, dieldrin, heptachlor epoxide, total PAHs, and total PCBs. Similar TMDLs for toxics were developed for the Anacostia and Potomac tributaries, each of which included similar statements about the reliance on fish tissue and sediment analysis from the Anacostia River to determine the pollutants to be included in the TMDL.

More Recent Impairment Listings

The assumption of toxics as the cause for observed impairments of Class C and Class D uses has continued in recent IRs, up to and including the 2020 IR. While toxic impairment had primarily been associated with impairments of Class C uses in the older assessments (i.e., pre-2014), more recent impairment listings (i.e., 2016 IR and forward) list toxics as causes of Class D impairments.

2016 Consolidated TMDL Implementation Plan

DOEE prepared a Consolidated TMDL Implementation Plan Report in 2016 (DOEE, 2016) in order to comply with a new MS4 NPDES permit requirement. This Plan described how municipal separate storm sewer system (MS4) wasteload allocations (WLAs) for the District's existing TMDLs were going to be achieved. The TMDL/MS4 WLA inventory presented in this report documented 26 TMDL studies and 485 MS4 WLAs covering 23 different pollutants. The majority of these MS4 WLAs were for toxic pollutants.

First Round of TMDL Revisions

In response to a 2006 court case, Friends of the Earth vs. the Environmental Protection Agency, 446 F.3d 140, 144 (D.C. Cir. 2006), EPA was required to establish "daily loads" (i.e., the daily expression of TMDLs) in the District of Columbia. Under contract to EPA, Tetra Tech was tasked with characterizing the environmental condition of the aquatic environment in the District of Columbia and to perform data collection in waters impaired for toxic contaminants to support update of the TMDLs. As described in Tetra Tech's summary report (Tetra Tech, 2014):

> *"All waterbodies monitored in this sampling plan are listed as impaired, and TMDLs have already been developed…Because the original listings for the toxic TMDLs are based on very limited data, EPA and DDOE decided to review all available data and, where needed, to conduct a monitoring program to assess the TMDL waters for the toxics of concern."*

Key findings regarding the existing impairments and TMDLs included:

> *"The data review concluded that the quality or quantity of data is not sufficient to assess the current state of TMDL waters. Therefore, additional monitoring data will need to be collected to assess whether the toxic of concern is a possible cause of impairment for these TMDL waters.*

Based on these findings, field work and data collection were undertaken in the Anacostia River and tributaries, in the Potomac tributaries, and in the Rock Creek tributaries. As reported in the 2014 document, dry weather sampling was performed in tributaries to Rock Creek and the Potomac and Anacostia Rivers, as well as in the Anacostia mainstem, for pollutants of concern during low flow (dry) conditions. Wet weather sampling was performed twice in the Anacostia River and its tributaries to collect wet weather samples.

The stated goal of the sampling effort was to fill data gaps with current information in preparation of converting existing TMDLs for these waterbodies to daily loads. A complementary goal of this work was to use the data to either verify impairment or to indicate the need for additional data to determine the impairment status.

Per these goals, the single dry weather samples for the Potomac and Rock Creek tributaries were used to "verify" existing impairments by toxic pollutants. Tetra Tech "verified" impairment by some toxics in some waterbodies, but was not able to "verify" other toxic impairments. Based on this verification, a set of revised TMDLs (Table 1) were developed for "verified" pollutants, including dieldrin, heptachlor epoxide, chlordane, and DDT for the tributaries in the District of Columbia's (DC's) portion of the Rock Creek and Potomac River watersheds (U.S. EPA, 2016).

Table 1.Rock Creek and Potomac Tributaries with Revised TMDLs

Mainstem	Tributary	Dieldrin	Heptachlor Epoxide	Chlordane	DDT	PCB
Rock Creek	Broad Branch	X	X	X		X
	Dunbarton Oaks	X	X	X		X
	Fenwick Branch	X	X		X	X
	Klingle Valley Creek	X	X			X
	Luzon Branch	X	X	X		X
	Melvin Hazen Valley Branch	X				X
	Normanstone Creek	X	X			X
	Pinehurst Branch	X	X			X
	Piney Branch	X	X	X		X
	Portal Branch	X	X			X
	Soapstone Creek	X	X	X		X
Potomac	Dalecarlia Tributary	X	X			X
	Oxon Run	X				

Second Round of TMDL Revisions

More recently, DOEE and MDE developed *Draft Revised Total Maximum Daily Loads for Organics and Metals in the Anacostia River Watershed* (DOEE, 2021). The toxic impairments that informed these TMDLs was determined based on the initial monitoring conducted by Tetra Tech in 2013-2014 (Tetra Tech, 2014) and additional monitoring conducted by Tetra Tech in 2018-2019 (TetraTech, 2021). As with the work in the Rock Creek and Potomac tributaries, some toxic impairments were "verified" by the Tetra Tech sampling, and some were not. The revised TMDLs included updated WLAs for pollutants that were verified. The "current" toxic impairments addressed by the draft revised TMDLs is presented in Table 2.

Table 2. Toxics Impairments Addressed by draft Revised Anacostia and Tributaries Metals and Organics TMDL

Waterbody	Arsenic	Copper	Zinc	4,4 DDD	4,4 DDE	4,4 DDT	Chlor-dane	Dieldrin	Heptachlor Epoxide	PAHs
Anacostia Segment 1 (Lower Anacostia)	X	X	X	X	X	X	X	X	X	X
Anacostia Segment 2 (Upper Anacostia)	X	X	X	X	X	X	X	X	X	X
Kingman Lake	X					X	X			X
Nash Run	X						X	X	X	X
Popes Branch					X		X		X	X
Watts Branch							X	X		
Hickey Run					X		X			X

Table 2. Toxics Impairments Addressed by draft Revised Anacostia and Tributaries Metals and Organics TMDL

Waterbody	Arsenic	Copper	Zinc	4,4 DDD	4,4 DDE	4,4 DDT	Chlor-dane	Dieldrin	Heptachlor Epoxide	PAHs
Ft Dupont Creek	X									
Ft Chaplin Run	X									
Fort Davis Tributary	X									
Fort Stanton Tributary	X									X
Texas Ave Tributary	X			X	X	X	X	X	X	X
MD-ANATF[1]									X	
NW Branch (MD)[1]									X	

[1]These waterbodies are in Maryland but are included in the revised TMDL. They are presented in this table for completeness.

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Inferences Drawn from the History of Impairment Listings and TMDLs for Toxics

Several inferences can be made based upon review of the District's 305(b) and IRs, the initial TMDLS developed between 2003 and 2014, the 2013-2019 field work, and recent TMDL revisions.

The initial development of TMDLs in 2003 and 2004 for toxics in tributaries was based on impairment attributed to toxic chemicals that were presumed to be present based on Banta's biological and habitat findings and fish tissue and sediment analysis from the Anacostia River. The available data for the toxics in question to support this presumption was minimal at best, and no comparison of water quality data with the applicable water quality criteria was made (e.g., comparison of instream water column data with the Criterion Maximum Concentration (CMC), the Criterion Continuous Concentration (CCC), and the Human Health (HH) Criterion for each constituent).

As described above, subsequent to the development of the initial TMDLs for toxics in the 2003-2004 timeframe, DOEE acknowledged the limited data on which the impairments and subsequent TMDLs were based. Further evaluations were undertaken to determine what pollutants to include in the 2016 *Revised Pesticide TMDLs for Small Tributaries in the Rock Creek and Potomac River Watersheds* (Table 1). The more recent development of *Draft Revised Total Maximum Daily Loads for Organics and Metals in the Anacostia River Watershed* (Table 2) is based on more robust data.

This decision-making raises questions about the thoroughness of the assessment process – specifically with respect to the assignment of pollutant causes of an observed impairment. Initially, the presumed toxic impairment was based on Banta's biological and habitat findings and recommendations and reinforced based on fish tissue and sediment analysis from the tidal Anacostia River. The presumed existing pollutant causes were then "confirmed" for the revised TMDLs if one water quality sample exceeded criteria. However, determination of impairment when only one sample exceeds a water quality criterion is inconsistent with EPA's "no more than one exceedance every three years rule" (EPA, 1997). Under the "no more than one exceedance every three years rule," a waterbody is fully supporting where:

> "*For any one pollutant, no more than one exceedance of acute criteria (EPA's criteria maximum concentration or applicable State/Tribal criteria) within a 3-year period based on grab or composite samples and no more than one exceedance of chronic criteria (EPA's criteria continuous concentration or applicable State/Tribal criteria) within a 3-year period based on grab or composite samples".*

In summary, one sample exceeding a criterion is not sufficient evidence of impairment, and this method for "confirming" existing pollutants as causes of impairment does not provide sufficient evidence that specific pollutants are causing these impairments.

Another conclusion drawn from the original toxics TMDLs (e.g., 2003 organics and metals TMDL for Anacostia and tributaries; 2004 organics and metals TMDL for Rock Creek tributaries) and subsequent revisions (e.g., *Revised Pesticide TMDLs for Small Tributaries in the Rock Creek and Potomac River*

Watersheds and the *Draft Revised Total Maximum Daily Loads for Organics and Metals in the Anacostia River Watershed)* is that some specific pollutants are not included in the revised TMDLs where the updated sampling found no exceedances of criteria. These waterbodies are no longer considered impaired for those pollutants. For example, the revised pesticide TMDLs for organochlorine pesticides and Polychlorinated Biphenyls in the small tributaries in the Rock Creek and Potomac River watersheds (DOEE, 2017) states:

> *"TMDLs were not developed for pollutant(s)-waterbody combinations that did not exceed any numeric water quality criteria. For tributaries hydrologically connected to the Anacostia or Potomac Rivers, where there was no data other than fish tissue data from the mainstem Anacostia or Potomac Rivers, the toxic pollutant(s)-waterbody combinations were placed in Category 3 (insufficient data). For waters that are not hydrologically connected to the Anacostia or Potomac River and have no evidence of a toxic pollutant present, those waters are no longer considered impaired for the specific parameter (although they remain identified as impaired based upon the District-wide fish consumption advisory).*

The draft TMDL for Pesticides and PCBs for the Anacostia River and its tributaries (DOEE, 2021) makes a similar statement.

Based on these statements, it is implied that some toxic pollutants were removed as causes of impairment or were otherwise recategorized within the IR in concert with TMDL revision.

Reevaluation of Impairment Causes and TMDLs for Toxics

The reevaluation of impairment causes and TMDLs for toxics is applied to all waterbodies in the District. The primary goal of this reevaluation is to determine if the pollutant-specific impairment causes included in the 2020 IR are supported by adequate data. This is accomplished through evaluation of water quality data according to decision rules included in the aforementioned District of Columbia Surface Water Assessment and Listing Methodology (DOEE, 2022). Determination of the necessity of TMDLs for toxics, the second thrust of the evaluation, stems from the outcome of the assessment of impairments.

Data and Data Analysis

In order to conduct this reevaluation, the complete record of historic water quality monitoring data was compiled on a pollutant-by-pollutant basis to investigate whether water quality data supported the classification of specific toxic pollutants as causes of impairment. This record included data for metals and organic compounds from 1990 to 2021. The pollutants of interest included five metals (arsenic, copper, lead, mercury, zinc) and ten organic compounds (chlordane, DDD, DDE, DDT, dieldrin, heptachlor epoxide, PAH1, PAH2, PAH3, and total PCBs). The analysis consisted of comparing historic and current water quality data to the District's numeric criteria for Class C and Class D uses to identify the occurrence and frequency of exceedances. The numeric criterion for metals were calculated based on the best available data for hardness.

Water quality data were gathered from a range of sources, including the DOEE water quality database, additional special studies performed in the District (including data from the Tetra Tech studies), and an online USGS database. Data rules for use of data points, including evaluation of data qualifiers and method detection limits (MDLs), were developed to ensure all data used in the reevaluation was analytically consistent. A detailed Technical Memorandum on the Methodology and Data Compilation for Review of Toxics Data from District Waterbodies (LimnoTech, 2021) is contained in Appendix A.

With respect to the actual data analysis, discrete measurements of individual pollutant concentrations were compared to water quality criteria. Exceedance of the water quality criteria occurs when an individual sample concentration is above the Class C numeric criteria for aquatic life or the Class D numeric criteria for human health. Per the District of Columbia Surface Water Assessment and Listing Methodology (DOEE, 2022), impairment or non-attainment occurs where there is more than one exceedance of the water quality criteria within a three-year period.

Findings by Waterbody

Reevaluation findings for Class C and Class D uses are organized in a standard tabular format for all tributary and mainstem waterbody segments. This format summarizes the breadth and recentness of the available data, and it documents impairment caused by toxics pollutants where it was found to be supported by adequate data. Example results for Class C and Class D are provided for the Lower

Anacostia River in Tables 3 and 4 below. The examples provide a summary of the number of samples of each pollutant collected in the waterbody from 1990 to 2021, the number of samples collected in the current surface water assessment period (July 1, 2016 – June 30, 2021) to be included in the analysis for the 2022 IR, the year of the most recent sample, the number of times the pollutant was detected, and the most recent year of pollutant detection. The tables also record the number of individual samples exceeding the criterion, the most recent year of exceedance, and the number of samples taken since the last exceedance. The rightmost two columns provide the critical reevaluation results. They document the occurrence of impairment or non-attainment where there is more than one exceedance of the criteria within a three-year period and, where applicable, the specific three-year period when this occurred. Note that because there are two criteria for Class C (criterion continuous concentration, or CCC; and criterion maximum concentration, or CMC), both results are included for each pollutant. A complete set of reevaluation findings for Class C and Class D uses for District waterbodies is provided in Appendix B.

As shown in Table 3, only DDT violated the Class C criteria of no more than one exceedance within a three-year period, and this occurred during the 2013-2016 time period. There is no evidence that any other toxic pollutants currently cause or have historically caused impairment and non-attainment of the Class C use in the Lower Anacostia River.

Table 3. Reevaluation Data Analysis Results for Class C Use in Lower Anacostia River (Segment 01)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?*
Arsenic (dissolved)	4a	D	40	24	2016	10	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	59	43	2021	37	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	4a	D	40	24	2016	38	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	4a	D	59	43	2021	3	2019	2 (CCC) Never (CMC)	2019 (CCC) Never (CMC)	13 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	4a	D	59	43	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	4a	D	59	43	2021	3	2018	3 (CCC) Never (CMC)	2018 (CCC) Never (CMC)	15 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2013 - 2016 (CCC) NA (CMC)
Dieldrin	4a	D	59	43	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	59	43	2021	2	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	89	37	2021	39	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	4a	D	59	43	2021	7	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	4a	D	59	43	2021	6	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	4a	D	59	43	2021	4	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

Table 3. Reevaluation Data Analysis Results for Class C Use in Lower Anacostia River (Segment 01)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?*
PCBs	4a	D	42	29	2021	39	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	4a	D	40	24	2016	12	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	40	24	2016	4	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable

As shown in Table 4, more than one exceedance of the Class D water quality criteria within a three-year period was found in the Lower Anacostia for total arsenic, DDD, DDT, heptachlor epoxide, total mercury, PAH2, PAH3, and total PCBs. The arsenic, DDD, heptachlor epoxide, and total PCB exceedances occurred with data collected during July 2018-June 2021, while the PAH2 exceedance is based on data collected during 2016-2019. This provides evidence that arsenic, DDD, heptachlor epoxide, and total PCBs are currently causing impairment of the Class D designated use. Older data for DDT, total mercury, and PAH3 show that these pollutants have previously caused impairment of the Class D use, but they are not currently impairing the Class D use. No other toxic pollutants were found to have exceeded the Class D criteria more than once during a three-year period. Thus, there is no evidence that any of these other toxic pollutants are causes of impairment and non-attainment of the Class D use in the Lower Anacostia River.

Table 4. Reevaluation Data Analysis Results for Class D Use in Lower Anacostia River (Segment 01)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance*	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	4a	D	181	43	2021	84	2021	33	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	59	43	2021	37	2016	Never	Never	NA	No (D)	NA (D)
Copper (total)	4a	D	138	43	2021	104	2021	Never	Never	NA	No (D)	NA (D)
DDD	4a	D	59	43	2021	3	2019	3	2019	13	Yes (D)	2018 - 2021 (D)
DDE	4a	D	59	43	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	4a	D	59	43	2021	3	2018	3	2018	15	Yes (D)	2013 - 2016 (D)
Dieldrin	4a	D	59	43	2021	1	2020	1	2020	12	No (D)	NA (D)
Heptachlor epoxide	4a	D	59	43	2021	2	2020	2	2020	9	Yes (D)	2018 - 2021 (D)
Mercury (total)	Not Listed	N/A	89	37	2021	39	1995	39	1995	50	Yes (D)	1995 - 1998 (D)

Table 4. Reevaluation Data Analysis Results for Class D Use in Lower Anacostia River (Segment 01)												
Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance*	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
PAH1	4a	D	59	43	2021	7	2020	Never	Never	NA	No (D)	NA (D)
PAH2	4a	D	59	43	2021	6	2016	5	2016	21	Yes (D)	2016 - 2019 (D)
PAH3	4a	D	59	43	2021	4	2016	4	2016	31	Yes (D)	2014 - 2017 (D)
PCBs	4a	D	42	29	2021	39	2021	39	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	4a	D	138	43	2021	93	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	181	37	2021	106	2021	Never	Never	NA	No (D)	NA (D)
*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable												

Summary of Findings

Summaries of the overall major findings of reevaluation of impairment causes are presented in Tables 5, 6, and 7. For practical purposes, the impairment findings are broken into two subcategories: those based on recent data (2013-2021), and those based on older data (1991 to 2012). This distinction tracks whether the original impairments from the 1996-2002 timeframe are or were supported by data from that time period or by data collected around the time TMDLs were developed for toxics (2003-2004) versus whether impairments are supported or confirmed by more recent data. 2013 is used as the beginning of the recent (2013-2021) data period because it marks the start of focused data collection on organic compounds that was used to determine which pollutants to include in the revised TMDLs. Also note that only waterbodies with exceedances of WQS are included in the tables.

Reevaluation of Class C Aquatic Life Use with Metals Data

No metals exceed the “more than one exceedance within a three-year period” rule for Class C criteria (CCC or CMC) for either the historical data (2012 or older) or for the more recent data (2013-current).

Reevaluation of Class C Aquatic Life Use with Organic Compounds Data (Table 5)

Ten (10) instances of impairment (more than one exceedance within a three-year period) of the Class C aquatic life use criteria for organic compounds were found in six (6) waterbodies based on recent data (2013-2021). Note that minimal water column data for organic compounds was found prior to 2013. The only water column data for organic compounds that was found prior to 2013 was for DDE and dieldrin in 1999 and 2000. None of the samples for these pollutants were found above detection limits, and thus the table includes only results from 2013-2021. Likewise, impairments were only identified for DDD, DDE, DDT, chlordane, heptachlor epoxide, and PCBs, so these were the only organic compounds included in the table. Table entries marked without a date indicate impairments found within the 2016-2021 assessment period.

Table 5. Impairment of the Class C Aquatic Life Use Criteria for Organic Compounds

Organic Compounds Recent Data (2013-2021)						
Waterbody	DDD	DDE	DDT	Chlordane	Heptachlor epoxide	PCBs
Upper Anacostia	CCC		CCC			CCC (2014)
Lower Anacostia			CCC (2013)			
Texas Avenue Tributary	CCC					
Lower Rock Creek		CCC				
Dumbarton Oaks			CCC	CCC	CCC	
Melvin Hazen Branch			CCC			

Reevaluation of Class D Fish Consumption Use with Metals Data (Table 6)

Total metals data that is available for comparison against Class D WQS includes data for arsenic, copper, lead, mercury, and zinc lead, copper, zinc, arsenic, mercury. Based on the recent (2013-2021) data, nineteen (19) waterbodies were found to be impaired by total arsenic for Class D based on violations of the "no more than one exceedance every three years" of human health (HH) criteria. No other violations of metals criteria were recorded.

With respect to the older (pre-2013) data, multiple waterbodies were determined to have exceeded the Class D criteria for both total arsenic and total mercury. However, upon closer inspection of the original lab data underlying these results, it was determined that the original lab data for samples showing exceedances of criteria should have been recorded as non-detected values. Waterbodies impacted by these results are indicated with an asterisk (*) in Table 6. Thus, in the historic pre-2013 data, there are no exceedances of metals criteria and no impairments of Class D uses caused by metals.

No other metals were found to be a cause of Class D impairment in either the recent (2013-2021 or historic (pre-2013) data, and thus no additional metals were included in the table.

Table 6. Impairment of the Class D Human Health (HH) Use Criteria for Metals			
Waterbody	Arsenic Recent Data (2013-2021)	Arsenic Older Data (1991 to 2012)	Mercury Older Data (1991 to 2012)
Upper Anacostia	HH		*
Lower Anacostia	HH		*
Fort Chaplin	HH		*
Fort Davis	HH		*
Fort Dupont	HH		
Fort Stanton	HH		*
Hickey Run			*
Kingman Lake	HH		*
Nash Run	HH		
Texas Avenue Tributary	HH		*
Upper Watts Branch	HH		*
Lower Watts Branch	HH		*
Upper Potomac	HH	*	*
Middle Potomac	HH		*
Lower Potomac	HH	*	*
Battery Kemble Creek			*
C&O Canal			*
Dalecarlia Tributary			*
Foundry Branch			*
Oxon Run			*
Tidal Basin			*
Washington Ship Channel	HH		*
Upper Rock Creek			*
Lower Rock Creek	HH		*
Broad Branch	HH		
Dumbarton Oaks	HH		
Melvin Hazen Valley Branch	HH		
*Data indicating impairment should have been marked as non-detected values.			

Reevaluation of Class D Fish Consumption Use with Organic Compounds Data (Table 7)

A substantial amount of impairment of the Class D human health use criteria associated with organic compounds was found. As shown in Table 7, this impairment was based on recent data (2013-2021). Note that no water column data for organic compounds prior to 2013 were found, and thus the table includes only results from 2013-2021. Table entries marked HH without a date indicate impairments found within the 2016-2021 assessment period

Table 7. Impairment of the Class D Human Health (HH) Use Criteria for Organic Compounds						
	Organic Compounds Recent Data (2013-2021)					
	Chlordane	Dieldrin	Heptachlor epoxide	DDD/DDE/DDT	PAHs	Total PCBs
Upper Anacostia		HH	HH	HH (DDD, DDT)		HH
Lower Anacostia			HH	HH (DDD)	HH (PAH2)	HH
Fort Dupont						HH
Fort Stanton						HH
Hickey Run					HH (PAH2; 2013-2014)	HH (2013-2014)
Kingman Lake				HH (DDT; 2013-2016)	HH (PAH2, PAH3; 2014-2016)	HH
Nash Run			HH (2013-2014)			HH (2013-2014)
Pope Branch			HH (2013-2014)			HH (2013-2014)
Texas Avenue Tributary		HH	HH (2013-2014)	HH (DDD)		HH (2013-2014)
Upper Watts Branch		HH				HH
Lower Watts Branch		HH				HH (2013-2014)
Upper Potomac						HH
Middle Potomac		HH				HH
Lower Potomac						HH
Lower Rock Creek		HH	HH	HH (DDE)		HH
Broad Branch		HH	HH	HH (DDT)		HH
Dumbarton Oaks	HH	HH	HH	HH (DDT)		HH
Melvin Hazen Branch		HH	HH	HH (DDT)		HH
Washington Ship Channel						HH

<u>Reevaluation of TMDLs</u>

As stated earlier in the Introduction:

> *The primary objective of the reevaluation presented in this document is to review the current and past impairment causes attributed to toxics in the District to determine if they are supported by*

adequate data. A related objective is to use the results of the reevaluation of impairment causes to determine the necessity of TMDLs for toxics in individual waterbodies. If the reevaluation shows that current or historic impairments by specific pollutants are not supported by adequate data, TMDLs can be withdrawn or revised to remove WLAs for those pollutants.

The reevaluation found that a substantial amount of impairment of Class C and Class D uses was caused by toxics. Nevertheless, much of the widespread impairment attributed to toxics that was presumed to be present based on previous 303(d) listings was found to be unsubstantiated. Details on the findings per individual waterbody are included in Appendix B, *Reevaluation Findings for Class C and Class D Uses for District Waterbodies*, and in Appendix C, *Comparison of Reevaluation Results with 2020 IR Lists*.

As shown in Table 8, the category 4a list in the 2020 IR contained a total of 137 waterbody/pollutant combinations for toxics with TMDLs approved by EPA. Overall, only 28% of the existing toxic impairments included in these TMDLs were verified in this reevaluation. By and large, the impairment underlying the need for the majority of these TMDLs (72r%) could not be verified in through the reevaluation summarized in this document. Consequently, removal of these pollutants from 303(d) listings is warranted, as is withdrawal or revision of related TMDLs. The reevaluation included in this document provides "good cause justification" for recommending removal of these pollutants from 303(d) listings as causes of impairment, as well as for revising existing TMDLs to remove these pollutants. In all of the cases where impairments by specific pollutants could not be verified, the "good cause justification" for removal from the 303(d) list is attributable to the fact that "more recent and accurate data" is available, and that there were "flaws in the original analysis that led to the waterbody being listed."

Table 8. Comparison of Verified Impairment with Category 4a (Approved TMDL) in the 2020 IR by Watershed

Watershed	Number of waterbody/pollutant combinations in Category 4 a (2020 IR)	Number of waterbody/pollutant combinations with verified impairment	Percent of waterbody/pollutant combinations with verified impairment
Anacostia River	80	26	33%
Potomac River	10	3	30%
Rock Creek	47	10	21%
Total	137	39	28%

In addition to identifying existing causes of impairment and 303(d) listings that were not confirmed, the reevaluation also found 19 new waterbody/pollutant combinations that are impaired but were not previously identified as impaired. That is, the waterbody/pollutant combinations were not on the 303(d) list in the 2020 IR. Four of these cases were found in the Anacostia Watershed, four in the Potomac Watershed, and 11 in the Rock Creek Watershed. These waterbody/pollutant combinations are included in Appendix C as candidates for listing in Category 5 where available data and/or information indicate that at least one designated use is not supported or is threatened, and a TMDL is needed.

Conclusions

Reevaluation Objectives

The reevaluation of toxics was aided by the presence of a large body of toxics data collected during the 2022 IR assessment period (2016-2021) by DOEE, EPA and the USGS. The relative abundance of this data and its broad availability across mainstem and tributary segments enabled a detailed assessment of toxic impairment that could not have been undertaken previously. As a result, the reevaluation of impairment causes and TMDLs for toxics achieved its main objectives.

First, it identified impaired waterbody/pollutant combinations where there is clear evidence of a toxic cause. This was accomplished by applying the decision rules for attaining designated uses included in the *District of Columbia Surface Water Assessment and Listing Methodology* (DOEE, 2022) to the complete record of historic water quality monitoring data. In doing this, the reevaluation documented both cases where the impairment was confirmed, but also many cases where the review of historical data for specific toxic pollutants did not support earlier or more recent findings of impairment by those specific pollutants.

Second, the results of the reevaluation of impairment causes were used to determine the necessity of TMDLs developed for individual waterbody/toxic pollutant combinations. This was accomplished by comparing the waterbody/pollutant findings from this reevaluation of toxic impairment with the listings under Category 4a in the 2020 IR. In doing this, it was found that 28% of the impairments listed in Category 4a in the 2020 IR were verified. That is, the reevaluation of toxics found evidence of impairment in the data. In contrast, 72% of the impairments listed in Category 4a in the 2020 IR were not verified. In these cases, neither the original basis for the listing nor the data record produced evidence of impairment that would justify the need for a TMDL. The TMDLs that fall in this latter group and the established pollutant load reduction targets associated with these TMDLs are considered unnecessary.

Finally, the reevaluation confirmed impairments in some waterbody/pollutant combinations that were not included in Categories 4a or 5 in the 2020 IR. In these cases, there are no existing or pending TMDLs for waterbody/pollutant combinations found to be impaired, and these waterbody/pollutant combinations are candidates for the Category 5 list where available data and/or information indicate that at least one designated use is not supported or is threatened, and a TMDL is needed.

Incorporation of Findings into the 2022 IR

The reevaluation of impairment causes and TMDLs for toxics described in this document provides the basis for a data-driven reassessment of toxics as the cause of widespread impairment in District waterbodies. Use of the reevaluation results in conjunction with the decision rules for listing and delisting included in the *District of Columbia Surface Water Assessment and Listing Methodology* (DOEE, 2022) establishes a sound scientific approach to support production of the 2022 IR. Specific areas where the reevaluation results influence the 2022 IR are as follows:

- Confirmation that some impairments were caused by toxics (i.e., in cases of existing/historic toxic impairments where reevaluation of water quality data showed more than one exceedance of numerical criterion in a three-year period).
- Removal of toxic pollutants as a cause of impairment where the available data was insufficient to establish impairment (i.e., in cases of existing/historic toxic impairments where reevaluation of water quality data did not show more than one exceedance of numerical criterion in a three-year period).
- Recategorization of the attainment of designated uses in waterbodies (e.g., pollutants moved out of Category 4a because the reevaluation of existing/historic toxic impairments did not confirm existing impairment).
- Update of the 303(d) list of impaired and threatened waters where evidence of toxic impairment was found.
- Delisting of waterbodies on the 303(d) list of impaired and threatened waters where the original listings are no longer supported by adequate data, and/or removal of specific pollutants from the 303(d) list where impairment by that pollutant is not supported.
- Rationale for withdrawing or modifying TMDLs/MS4 WLAs where there is no evidence of impairment of a specific waterbody/pollutant combination.

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Appendix A. Technical Memorandum on the Methodology and Data Compilation for Review of Toxics Data from District Waterbodies

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Appendix B. Reevaluation Findings for Class C and Class D Uses for District Waterbodies

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Anacostia and Tributaries

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Table B.1. Reevaluation Data Analysis Results for Class C Use in Upper Anacostia River (Segment 02)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?*
Arsenic (dissolved)	4a	D	51	24	2016	15	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	114	87	2019	48	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	4a	D	51	24	2016	51	2016	1 (CCC) Never (CMC)	2016 (CCC) Never (CMC)	4 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	4a	D	114	87	2019	26	2019	5 (CCC) Never (CMC)	2018 (CCC) Never (CMC)	22 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2018 - 2021 (CCC) NA (CMC)
DDE	4a	D	114	87	2019	10	2018	1 (CCC) Never (CMC)	2018 (CCC) Never (CMC)	51 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	4a	D	114	87	2019	18	2018	9 (CCC) Never (CMC)	2018 (CCC) Never (CMC)	22 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2018 - 2021 (CCC) NA (CMC)
Dieldrin	4a	D	114	87	2019	42	2019	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	114	87	2019	29	2019	1 (CCC) Never (CMC)	2018 (CCC) Never (CMC)	22 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	87	24	2016	48	2014	1 (CCC) Never (CMC)	1994 (CCC) Never (CMC)	63 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	4a	D	65	39	2019	21	2019	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	4a	D	65	39	2019	11	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	4a	D	65	39	2019	10	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	48	24	2016	39	2016	Never (CCC) 2 (CMC)	Never (CCC) 2014 (CMC)	NA (CCC) 32 (CMC)	No (CCC) Yes (CMC)	NA (CCC) 2014 - 2017 (CMC)
Zinc (dissolved)	4a	D	51	24	2016	26	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	51	24	2016	14	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.2. Reevaluation Data Analysis Results for Class D Use in Upper Anacostia River (Segment 02)												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D CCC or CMC criteria**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance***	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	4a	D	177	39	2019	93	2019	35	2019	0	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	114	87	2019	48	2016	Never	Never	NA	No (D)	NA (D)
Copper (total)	4a	D	144	39	2019	114	2019	Never	Never	NA	No (D)	NA (D)
DDD	4a	D	114	87	2019	26	2019	17	2019	0	Yes (D)	2018 - 2021 (D)
DDE	4a	D	114	87	2019	10	2018	1	2018	51	No (D)	NA (D)
DDT	4a	D	114	87	2019	18	2018	9	2018	22	Yes (D)	2018 - 2021 (D)
Dieldrin	4a	D	114	87	2019	42	2019	33	2019	0	Yes (D)	2018 - 2021 (D)
Heptachlor epoxide	4a	D	114	87	2019	29	2019	20	2019	0	Yes (D)	2018 - 2021 (D)
Mercury (total)	Not Listed	N/A	87	24	2016	48	2014	39	1995	48	Yes (D)	1995 - 1998 (D)
PAH1	4a	D	65	39	2019	21	2019	Never	Never	NA	No (D)	NA (D)
PAH2	4a	D	65	39	2019	11	2016	1	2016	44	No (D)	NA (D)
PAH3	4a	D	65	39	2019	10	2016	1	2016	44	No (D)	NA (D)
PCBs	4a	D	48	24	2016	39	2016	38	2016	0	Yes (D)	2016 - 2019 (D)
Zinc (total)	4a	D	132	39	2019	103	2019	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	169	24	2016	107	2016	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.3. Reevaluation Data Analysis Results for Class C Use in Lower Anacostia River (Segment 01)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?*
Arsenic (dissolved)	4a	D	40	24	2016	10	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	59	43	2021	37	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	4a	D	40	24	2016	38	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	4a	D	59	43	2021	3	2019	2 (CCC) Never (CMC)	2019 (CCC) Never (CMC)	13 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	4a	D	59	43	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	4a	D	59	43	2021	3	2018	3 (CCC) Never (CMC)	2018 (CCC) Never (CMC)	15 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2013 - 2016 (CCC) NA (CMC)
Dieldrin	4a	D	59	43	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	59	43	2021	2	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	89	37	2021	39	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	4a	D	59	43	2021	7	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	4a	D	59	43	2021	6	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	4a	D	59	43	2021	4	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	42	29	2021	39	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	4a	D	40	24	2016	12	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	40	24	2016	4	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.4. Reevaluation Data Analysis Results for Class D Use in Lower Anacostia River (Segment 01)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance*	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	4a	D	181	43	2021	84	2021	33	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	59	43	2021	37	2016	Never	Never	NA	No (D)	NA (D)
Copper (total)	4a	D	138	43	2021	104	2021	Never	Never	NA	No (D)	NA (D)
DDD	4a	D	59	43	2021	3	2019	3	2019	13	Yes (D)	2018 - 2021 (D)
DDE	4a	D	59	43	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	4a	D	59	43	2021	3	2018	3	2018	15	Yes (D)	2013 - 2016 (D)
Dieldrin	4a	D	59	43	2021	1	2020	1	2020	12	No (D)	NA (D)
Heptachlor epoxide	4a	D	59	43	2021	2	2020	2	2020	9	Yes (D)	2018 - 2021 (D)
Mercury (total)	Not Listed	N/A	89	37	2021	39	1995	39	1995	50	Yes (D)	1995 - 1998 (D)
PAH1	4a	D	59	43	2021	7	2020	Never	Never	NA	No (D)	NA (D)
PAH2	4a	D	59	43	2021	6	2016	5	2016	21	Yes (D)	2016 - 2019 (D)
PAH3	4a	D	59	43	2021	4	2016	4	2016	31	Yes (D)	2014 - 2017 (D)
PCBs	4a	D	42	29	2021	39	2021	39	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	4a	D	138	43	2021	93	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	181	37	2021	106	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.5. Reevaluation Data Analysis Results for Class C Use in Fort Chaplin

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance? *
Arsenic (dissolved)	4a	D	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	5	0	1995	5	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) A (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.6. Reevaluation Data Analysis Results for Class D Use in Fort Chaplin

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance*	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	4a	D	42	3	2019	16	2019	6	2019	0	Yes (D)	2018 - 2021 (D)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	25	3	2019	15	2019	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	5	0	1995	5	1995	5	1995	0	Yes (D)	1994 - 1997 (D)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Zinc (total)	Not Listed	N/A	27	3	2019	22	2019	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	39	0	2014	15	2014	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.7. Reevaluation Data Analysis Results for Class C Use in Fort Davis

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?*
Arsenic (dissolved)	4a	D	3	0	2014	2	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	11	0	1995	11	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.8. Reevaluation Data Analysis Results for Class D Use in Fort Davis

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance*	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	4a	D	45	3	2019	21	2019	6	2019	0	Yes (D)	2018 - 2021 (D)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	29	3	2019	18	2019	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	11	0	1995	11	1995	10	1995	0	Yes (D)	1995 - 1998 (D)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Zinc (total)	Not Listed	N/A	30	3	2019	30	2019	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	41	0	2014	22	2014	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.9. Reevaluation Data Analysis Results for Class C Use in Fort Dupont

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?*
Arsenic (dissolved)	4a	D	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	13	13	2021	1	2020	1 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	9 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	13	13	2021	1	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	14	13	2021	1	1994	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	13	13	2021	3	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	Not Listed	N/A	5	5	2021	4	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.10. Reevaluation Data Analysis Results for Class D Use in Fort Dupont												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance***	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	4a	D	46	16	2021	19	2021	13	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	30	16	2021	21	2021	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	13	13	2021	1	2020	1	2020	9	No (D)	NA (D)
Dieldrin	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	Not Listed	N/A	13	13	2021	1	2021	1	2021	5	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	14	13	2021	1	1994	1	1994	13	No (D)	NA (D)
PAH1	Not Listed	N/A	13	13	2021	3	2021	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	Not Listed	N/A	5	5	2021	4	2021	4	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	3	D	31	16	2021	26	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	43	13	2021	22	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.11. Reevaluation Data Analysis Results for Class C Use in Fort Stanton

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?*
Arsenic (dissolved)	4a	D	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	16	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	16	13	2021	1	2020	1 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	11 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	16	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	16	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	16	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	16	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	24	13	2021	11	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	4a	D	19	16	2021	5	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	4a	D	19	16	2021	1	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	4a	D	19	16	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	10	5	2021	9	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.12. Reevaluation Data Analysis Results for Class D Use in Fort Stanton

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance *	No. of Samples Since Last Class D Exceedance*	Has there been more than one Class D exceedance in a three- year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	4a	D	55	16	2021	24	2021	12	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	Not Listed	N/A	16	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	42	16	2021	29	2021	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	16	13	2021	1	2020	1	2020	11	No (D)	NA (D)
DDE	Not Listed	N/A	16	13	2021	1	2020	1	2020	6	No (D)	NA (D)
DDT	Not Listed	N/A	16	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	Not Listed	N/A	16	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	Not Listed	N/A	16	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	24	13	2021	11	1995	10	1995	13	Yes (D)	1995 - 1998 (D)
PAH1	4a	D	19	16	2021	5	2020	Never	Never	NA	No (D)	NA (D)
PAH2	4a	D	19	16	2021	1	2014	1	2014	16	No (D)	NA (D)
PAH3	4a	D	19	16	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	10	5	2021	9	2021	9	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	Not Listed	N/A	42	16	2021	34	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	53	13	2021	28	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.13. Reevaluation Data Analysis Results for Class C Use in Hickey Run

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	1	1	2017	1	2017	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	150	102	2021	143	2021	1 (CCC) Never (CMC)	2018 (CCC) Never (CMC)	71 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	4a	D	6	3	2019	1	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	3	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	3	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	111	99	2021	110	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	4a	D	5	2	2019	3	2019	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	4a	D	5	2	2019	2	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	4a	D	5	2	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	5	0	2014	5	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	150	102	2021	126	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	1	1	2017	1	2017	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.14. Reevaluation Data Analysis Results for Class D Use in Hickey Run

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	3	D	44	1	2017	20	2017	1	2017	0	No (D)	NA (D)
Chlordane	4a	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	27	1	2017	18	2017	Never	Never	NA	No (D)	NA (D)
DDD	3	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	4a	D	6	3	2019	1	2014	1	2014	3	No (D)	NA (D)
DDT	3	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	3	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	3	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	111	99	2021	110	2021	10	1995	100	Yes (D)	1995 - 1998 (D)
PAH1	4a	D	5	2	2019	3	2019	Never	Never	NA	No (D)	NA (D)
PAH2	4a	D	5	2	2019	2	2014	2	2014	2	Yes (D)	2013 - 2016 (D)
PAH3	4a	D	5	2	2019	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	5	0	2014	5	2014	5	2014	0	Yes (D)	2013 - 2016 (D)
Zinc (total)	3	D	28	1	2017	25	2017	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	44	1	2017	21	2017	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.15. Reevaluation Data Analysis Results for Class C Use in Kingman Lake

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	4a	D	21	12	2016	8	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	24	15	2019	18	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	21	12	2016	19	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	24	15	2019	1	2019	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	24	15	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	24	15	2019	2	2016	2 (CCC) Never (CMC)	2016 (CCC) Never (CMC)	10 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	3	D	24	15	2019	1	2018	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	3	D	24	15	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	33	12	2016	15	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	4a	D	24	15	2019	4	2019	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	4a	D	24	15	2019	3	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	4a	D	24	15	2019	2	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	18	12	2016	18	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	21	12	2016	10	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	21	12	2016	4	2016	1 (CCC) Never (CMC)	2016 (CCC) Never (CMC)	12 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.16. Reevaluation Data Analysis Results for Class D Use in Kingman Lake

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	4a	D	89	15	2019	35	2019	12	2019	0	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	24	15	2019	18	2016	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	62	15	2019	43	2019	Never	Never	NA	No (D)	NA (D)
DDD	3	D	24	15	2019	1	2019	1	2019	0	No (D)	NA (D)
DDE	3	D	24	15	2019	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	24	15	2019	2	2016	2	2016	10	No (D)	NA (D)
Dieldrin	3	D	24	15	2019	1	2018	1	2018	2	No (D)	NA (D)
Heptachlor epoxide	3	D	24	15	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	33	12	2016	15	1995	14	1995	18	Yes (D)	1995 - 1998 (D)
PAH1	4a	D	24	15	2019	4	2019	Never	Never	NA	No (D)	NA (D)
PAH2	4a	D	24	15	2019	3	2016	2	2016	15	Yes (D)	2013 - 2016 (D)
PAH3	4a	D	24	15	2019	2	2016	2	2016	15	Yes (D)	2013 - 2016 (D)
PCBs	4a	D	18	12	2016	18	2016	18	2016	0	Yes (D)	2016 - 2019 (D)
Zinc (total)	3	D	64	15	2019	58	2019	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	85	12	2016	71	2016	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.17. Reevaluation Data Analysis Results for Class C Use in Nash Run

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	4a	D	3	0	2014	2	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	6	3	2019	1	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	6	3	2019	2	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	4a	D	6	3	2019	5	2019	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	4a	D	6	3	2019	3	2018	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	4a	D	6	3	2019	2	2018	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	5	0	2014	5	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.18. Reevaluation Data Analysis Results for Class D Use in Nash Run

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	4a	D	31	3	2019	6	2019	5	2019	0	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	16	3	2019	7	2019	Never	Never	NA	No (D)	NA (D)
DDD	3	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	6	3	2019	1	2014	1	2014	3	No (D)	NA (D)
Heptachlor epoxide	4a	D	6	3	2019	2	2014	2	2014	3	Yes (D)	2013 - 2016 (D)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	4a	D	6	3	2019	5	2019	Never	Never	NA	No (D)	NA (D)
PAH2	4a	D	6	3	2019	3	2018	2	2018	1	No (D)	NA (D)
PAH3	4a	D	6	3	2019	2	2018	2	2018	1	No (D)	NA (D)
PCBs	4a	D	5	0	2014	5	2014	5	2014	0	Yes (D)	2013 - 2016 (D)
Zinc (total)	3	D	16	3	2019	14	2019	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	28	0	2014	8	2014	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.19. Reevaluation Data Analysis Results for Class C Use in Pope Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	1	1	2017	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	6	3	2019	1	2013	1 (CCC) Never (CMC)	2013 (CCC) Never (CMC)	4 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	1	1	2017	1	2017	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	4a	D	6	3	2019	1	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	6	3	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	3	D	6	3	2019	1	2018	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	6	3	2019	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	1	1	2017	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	4a	D	6	3	2019	2	2019	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	4a	D	6	3	2019	1	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	4a	D	6	3	2019	1	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	5	0	2014	5	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	1	1	2017	1	2017	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	1	1	2017	1	2017	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.20. Reevaluation Data Analysis Results for Class D Use in Pope Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	3	D	24	1	2017	3	2017	1	2017	0	No (D)	NA (D)
Chlordane	4a	D	6	3	2019	1	2013	1	2013	4	No (D)	NA (D)
Copper (total)	3	D	10	1	2017	3	2017	Never	Never	NA	No (D)	NA (D)
DDD	3	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	4a	D	6	3	2019	1	2014	1	2014	3	No (D)	NA (D)
DDT	3	D	6	3	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	3	D	6	3	2019	1	2018	1	2018	1	No (D)	NA (D)
Heptachlor epoxide	4a	D	6	3	2019	3	2014	3	2014	3	Yes (D)	2013 - 2016 (D)
Mercury (total)	Not Listed	N/A	1	1	2017	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	4a	D	6	3	2019	2	2019	Never	Never	NA	No (D)	NA (D)
PAH2	4a	D	6	3	2019	1	2014	1	2014	3	No (D)	NA (D)
PAH3	4a	D	6	3	2019	1	2014	1	2014	3	No (D)	NA (D)
PCBs	4a	D	5	0	2014	5	2014	5	2014	0	Yes (D)	2013 - 2016 (D)
Zinc (total)	3	D	10	1	2017	5	2017	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	24	1	2017	4	2017	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.21. Reevaluation Data Analysis Results for Class C Use in Texas Avenue Tributary

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	4a	D	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	6	3	2019	1	2013	1 (CCC) Never (CMC)	2013 (CCC) Never (CMC)	4 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	4a	D	6	3	2019	6	2019	5 (CCC) Never (CMC)	2018 (CCC) Never (CMC)	1 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2018 - 2021 (CCC) NA (CMC)
DDE	4a	D	6	3	2019	3	2019	1 (CCC) Never (CMC)	2014 (CCC) Never (CMC)	3 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	4a	D	6	3	2019	1	2014	1 (CCC) Never (CMC)	2014 (CCC) Never (CMC)	3 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	6	3	2019	5	2018	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	6	3	2019	3	2018	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	11	0	1995	11	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	4a	D	6	3	2019	2	2019	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	4a	D	6	3	2019	1	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	4a	D	6	3	2019	1	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	5	0	2014	5	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	3	0	2014	3	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	3	0	2014	2	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.22. Reevaluation Data Analysis Results for Class D Use in Texas Avenue Tributary

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	4a	D	40	3	2019	21	2019	7	2019	0	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	6	3	2019	1	2013	1	2013	4	No (D)	NA (D)
Copper (total)	Not Listed	N/A	28	3	2019	18	2019	Never	Never	NA	No (D)	NA (D)
DDD	4a	D	6	3	2019	6	2019	6	2019	0	Yes (D)	2018 - 2021 (D)
DDE	4a	D	6	3	2019	3	2019	3	2019	0	Yes (D)	2013 - 2016 (D)
DDT	4a	D	6	3	2019	1	2014	1	2014	3	No (D)	NA (D)
Dieldrin	4a	D	6	3	2019	5	2018	5	2018	1	Yes (D)	2018 - 2021 (D)
Heptachlor epoxide	4a	D	6	3	2019	3	2018	3	2018	2	Yes (D)	2013 - 2016 (D)
Mercury (total)	Not Listed	N/A	11	0	1995	11	1995	10	1995	0	Yes (D)	1995 - 1998 (D)
PAH1	4a	D	6	3	2019	2	2019	Never	Never	NA	No (D)	NA (D)
PAH2	4a	D	6	3	2019	1	2014	1	2014	3	No (D)	NA (D)
PAH3	4a	D	6	3	2019	1	2014	1	2014	3	No (D)	NA (D)
PCBs	4a	D	5	0	2014	5	2014	5	2014	0	Yes (D)	2013 - 2016 (D)
Zinc (total)	Not Listed	N/A	28	3	2019	27	2019	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	37	0	2014	17	2014	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.23. Reevaluation Data Analysis Results for Class C Use in Upper Watts Branch (Segment 02)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	13	13	2021	3	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	3	D	13	13	2021	1	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	35	13	2021	22	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	13	13	2021	2	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	5	5	2021	4	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.24. Reevaluation Data Analysis Results for Class D Use in Upper Watts Branch (Segment 02)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	Not Listed	N/A	92	13	2021	38	2021	9	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	61	13	2021	38	2021	Never	Never	NA	No (D)	NA (D)
DDD	3	D	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	13	13	2021	3	2021	3	2021	3	Yes (D)	2018 - 2021 (D)
Heptachlor epoxide	3	D	13	13	2021	1	2021	1	2021	2	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	35	13	2021	22	1995	20	1995	13	Yes (D)	1995 - 1998 (D)
PAH1	3	D	13	13	2021	2	2020	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	5	5	2021	4	2021	4	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	Not Listed	N/A	63	13	2021	54	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	93	13	2021	48	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.25. Reevaluation Data Analysis Results for Class C Use in Lower Watts Branch (Segment 01)												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	Not Listed	N/A	3	3	2017	2	2017	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	7	4	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	149	103	2021	142	2021	1 (CCC) Never (CMC)	2016 (CCC) Never (CMC)	109 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	7	4	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	7	4	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	7	4	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	7	4	2019	4	2019	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	3	D	7	4	2019	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	115	103	2021	112	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	3	0	2014	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	3	0	2014	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	3	0	2014	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	5	0	2014	5	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	149	103	2021	109	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	3	3	2017	2	2017	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.26. Reevaluation Data Analysis Results for Class D Use in Lower Watts Branch (Segment 01)												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	Not Listed	N/A	41	3	2017	18	2017	3	2017	0	Yes (D)	2017 - 2020 (D)
Chlordane	4a	D	7	4	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	26	3	2017	19	2017	Never	Never	NA	No (D)	NA (D)
DDD	3	D	7	4	2019	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	7	4	2019	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	7	4	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	7	4	2019	4	2019	4	2019	0	Yes (D)	2018 - 2021 (D)
Heptachlor epoxide	3	D	7	4	2019	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	115	103	2021	112	2021	10	1995	104	Yes (D)	1995 - 1998 (D)
PAH1	3	D	3	0	2014	1	2013	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	3	0	2014	1	2013	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	3	0	2014	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	5	0	2014	5	2014	5	2014	0	Yes (D)	2013 - 2016 (D)
Zinc (total)	Not Listed	N/A	26	3	2017	23	2017	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	42	3	2017	20	2017	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

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Table B.27. Reevaluation Data Analysis Results for Class C Use in Upper Potomac River (Segment 03)												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	39	13	2021	26	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	13	13	2021	2	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	5	5	2021	4	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.28. Reevaluation Data Analysis Results for Class D Use in Upper Potomac River (Segment 03)												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	Not Listed	N/A	91	13	2021	41	2021	10	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	65	13	2021	41	2021	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	Not Listed	N/A	13	13	2021	1	2020	1	2020	7	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	39	13	2021	26	1995	26	1995	13	Yes (D)	1995 - 1998 (D)
PAH1	Not Listed	N/A	13	13	2021	2	2020	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	13	13	2021	1	2020	1	2020	9	No (D)	NA (D)
PAH3	Not Listed	N/A	13	13	2021	1	2020	1	2020	9	No (D)	NA (D)
PCBs	4a	D	5	5	2021	4	2021	4	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	Not Listed	N/A	55	13	2021	30	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	93	13	2021	43	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.29. Reevaluation Data Analysis Results for Class C Use in Middle Potomac River (Segment 02)												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	13	13	2021	2	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	26	13	2021	13	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	13	13	2021	1	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	5	5	2021	4	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.30. Reevaluation Data Analysis Results for Class D Use in Middle Potomac River (Segment 02)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	Not Listed	N/A	54	13	2021	25	2021	8	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	40	13	2021	27	2021	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	Not Listed	N/A	13	13	2021	2	2020	2	2020	9	Yes (D)	2018 - 2021 (D)
Heptachlor epoxide	Not Listed	N/A	13	13	2021	1	2020	1	2020	9	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	26	13	2021	13	1995	13	1995	13	Yes (D)	1995 - 1998 (D)
PAH1	Not Listed	N/A	13	13	2021	1	2021	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	13	13	2021	1	2020	1	2020	10	No (D)	NA (D)
PAH3	Not Listed	N/A	13	13	2021	1	2020	1	2020	10	No (D)	NA (D)
PCBs	4a	D	5	5	2021	4	2021	4	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	Not Listed	N/A	28	13	2021	7	2020	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	55	13	2021	26	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.31. Reevaluation Data Analysis Results for Class C Use in Lower Potomac River (Segment 03)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	63	13	2021	50	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	13	13	2021	2	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	5	5	2021	4	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.32. Reevaluation Data Analysis Results for Class D Use in Lower Potomac River (Segment 03)

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	Not Listed	N/A	164	13	2021	73	2021	12	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	116	13	2021	75	2021	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	Not Listed	N/A	13	13	2021	1	2020	1	2020	9	No (D)	NA (D)
Heptachlor epoxide	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	63	13	2021	50	1995	50	1995	13	Yes (D)	1995 - 1998 (D)
PAH1	Not Listed	N/A	13	13	2021	2	2021	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	5	5	2021	4	2021	4	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	Not Listed	N/A	104	13	2021	62	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	167	13	2021	75	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.33. Reevaluation Data Analysis Results for Class C Use in Battery Kemble Creek												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	3	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	10	0	1995	10	1995	1 (CCC) Never (CMC)	1994 (CCC) Never (CMC)	4 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.34. Reevaluation Data Analysis Results for Class D Use in Battery Kemble Creek												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	3	D	42	0	2013	15	1999	Never	Never	NA	No (D)	NA (D)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	27	0	2013	17	2013	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	10	0	1995	10	1995	10	1995	0	Yes (D)	1995 - 1998 (D)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Zinc (total)	3	D	27	0	2013	18	2013	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	42	0	2013	18	2013	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.35. Reevaluation Data Analysis Results for Class C Use in Dalecarlia Tributary

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	10	0	1995	10	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.36. Reevaluation Data Analysis Results for Class D Use in Dalecarlia Tributary												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	3	D	39	0	2012	13	1999	Never	Never	NA	No (D)	NA (D)
Chlordane	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	24	0	2002	14	2001	Never	Never	NA	No (D)	NA (D)
DDD	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	10	0	1995	10	1995	10	1995	0	Yes (D)	1995 - 1998 (D)
PAH1	3	D	1	0	2013	1	2013	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Zinc (total)	3	D	24	0	2002	15	2001	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	39	0	2012	16	2012	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.37. Reevaluation Data Analysis Results for Class C Use in Foundry Branch												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	Not Listed	N/A	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	7	0	1995	7	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.38. Reevaluation Data Analysis Results for Class D Use in Foundry Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	Not Listed	N/A	9	0	2013	8	1995	Never	Never	NA	No (D)	NA (D)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	9	0	2013	9	2013	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	7	0	1995	7	1995	7	1995	0	Yes (D)	1995 - 1998 (D)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Zinc (total)	Not Listed	N/A	9	0	2013	9	2013	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	9	0	2013	9	2013	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.39. Reevaluation Data Analysis Results for Class C Use in Oxon Run

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	11	0	1995	11	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.40. Reevaluation Data Analysis Results for Class D Use in Oxon Run

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	3	D	36	0	2013	13	1999	Never	Never	NA	No (D)	NA (D)
Chlordane	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	22	0	2013	15	2013	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	11	0	1995	11	1995	10	1995	0	Yes (D)	1995 - 1998 (D)
PAH1	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Zinc (total)	3	D	22	0	2013	18	2013	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	35	0	2013	13	2013	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

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Table B.41. Reevaluation Data Analysis Results for Class C Use in Upper Rock Creek												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	4a	D	155	107	2021	151	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	17	0	2000	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	17	0	2000	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	4a	D	112	101	2021	112	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	4a	D	155	107	2021	19	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	4a	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.42. Reevaluation Data Analysis Results for Class D Use in Upper Rock Creek

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	Not Listed	N/A	47	0	2012	13	1999	Never	Never	NA	No (D)	NA (D)
Chlordane	4a	D	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	34	0	2002	15	1999	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	17	0	2000	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	17	0	2000	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	4a	D	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	4a	D	112	101	2021	112	2021	10	1995	102	Yes (D)	1995 - 1998 (D)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Zinc (total)	Not Listed	N/A	32	0	2002	15	2000	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	49	0	2012	16	2000	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.43. Reevaluation Data Analysis Results for Class C Use in Lower Rock Creek

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	13	13	2021	1	2020	1 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	6 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	4a	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	13	13	2021	1	2020	1 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	6 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	13	13	2021	2	2020	2 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	6 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2018 - 2021 (CCC) NA (CMC)
DDT	Not Listed	N/A	13	13	2021	1	2020	1 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	6 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	13	13	2021	5	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) A (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	13	13	2021	7	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	4a	D	22	13	2021	9	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	13	13	2021	2	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	13	13	2021	2	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	Not Listed	N/A	5	5	2021	4	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	4a	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	4a	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.44. Reevaluation Data Analysis Results for Class D Use in Lower Rock Creek

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	Not Listed	N/A	58	13	2021	23	2021	9	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	13	13	2021	1	2020	1	2020	6	No (D)	NA (D)
Copper (total)	Not Listed	N/A	43	13	2021	25	2021	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	13	13	2021	1	2020	1	2020	6	No (D)	NA (D)
DDE	Not Listed	N/A	13	13	2021	2	2020	2	2020	6	Yes (D)	2018 - 2021 (D)
DDT	Not Listed	N/A	13	13	2021	1	2020	1	2020	6	No (D)	NA (D)
Dieldrin	4a	D	13	13	2021	5	2021	5	2021	3	Yes (D)	2018 - 2021 (D)
Heptachlor epoxide	4a	D	13	13	2021	7	2021	7	2021	2	Yes (D)	2018 - 2021 (D)
Mercury (total)	4a	D	22	13	2021	9	1995	9	1995	13	Yes (D)	1995 - 1998 (D)
PAH1	Not Listed	N/A	13	13	2021	2	2020	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	13	13	2021	2	2020	1	2020	11	No (D)	NA (D)
PAH3	Not Listed	N/A	13	13	2021	1	2020	1	2020	11	No (D)	NA (D)
PCBs	4a	D	5	5	2021	4	2021	4	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	Not Listed	N/A	43	13	2021	25	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	57	13	2021	28	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.45. Reevaluation Data Analysis Results for Class C Use in Broad Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	14	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	14	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	14	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	14	13	2021	2	2021	1 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	6 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	14	13	2021	7	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	14	13	2021	8	2021	1 (CCC) Never (CMC)	2021 (CCC) Never (CMC)	3 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	13	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	14	13	2021	2	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	14	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	14	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	6	5	2021	5	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.46. Reevaluation Data Analysis Results for Class D Use in Broad Branch												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	Not Listed	N/A	37	13	2021	8	2021	8	2021	2	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	14	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	23	13	2021	11	2021	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	14	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	14	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	14	13	2021	2	2021	2	2021	3	Yes (D)	2018 - 2021 (D)
Dieldrin	4a	D	14	13	2021	7	2021	7	2021	2	Yes (D)	2018 - 2021 (D)
Heptachlor epoxide	4a	D	14	13	2021	8	2021	8	2021	2	Yes (D)	2018 - 2021 (D)
Mercury (total)	Not Listed	N/A	13	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	Not Listed	N/A	14	13	2021	2	2020	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	14	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	14	13	2021	1	2020	1	2020	8	No (D)	NA (D)
PCBs	4a	D	6	5	2021	5	2021	5	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	Not Listed	N/A	23	13	2021	4	2020	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	38	13	2021	7	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.47. Reevaluation Data Analysis Results for Class C Use in Dumbarton Oaks												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	14	13	2021	2	2021	2 (CCC) Never (CMC)	2021 (CCC) Never (CMC)	4 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2018 - 2021 (CCC) NA (CMC)
Copper (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	14	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	14	13	2021	1	2020	1 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	10 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	14	13	2021	3	2020	2 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	9 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2018 - 2021 (CCC) NA (CMC)
Dieldrin	4a	D	14	13	2021	11	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	14	13	2021	10	2021	5 (CCC) Never (CMC)	2021 (CCC) Never (CMC)	2 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2018 - 2021 (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	14	13	2021	3	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	14	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	14	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	6	5	2021	5	2021	Never (CCC) 1 (CMC)	Never (CCC) 2020 (CMC)	NA (CCC) 4 (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.48. Reevaluation Data Analysis Results for Class D Use in Dumbarton Oaks

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	3	D	37	13	2021	7	2021	7	2021	4	Yes (D)	2018 - 2021 (D)
Chlordane	4a	D	14	13	2021	2	2021	2	2021	4	Yes (D)	2018 - 2021 (D)
Copper (total)	3	D	24	13	2021	10	2021	Never	Never	NA	No (D)	NA (D)
DDD	3	D	14	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	14	13	2021	1	2020	1	2020	10	No (D)	NA (D)
DDT	3	D	14	13	2021	3	2020	3	2020	9	Yes (D)	2018 - 2021 (D)
Dieldrin	4a	D	14	13	2021	11	2021	11	2021	2	Yes (D)	2018 - 2021 (D)
Heptachlor epoxide	4a	D	14	13	2021	10	2021	10	2021	2	Yes (D)	2018 - 2021 (D)
Mercury (total)	Not Listed	N/A	13	13	2021	1	2020	1	2020	10	No (D)	NA (D)
PAH1	3	D	14	13	2021	3	2020	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	14	13	2021	1	2020	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	14	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	6	5	2021	5	2021	5	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	3	D	24	13	2021	10	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	38	13	2021	12	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.49. Reevaluation Data Analysis Results for Class C Use in Fenwick Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.50. Reevaluation Data Analysis Results for Class D Use in Fenwick Branch												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	3	D	24	0	2012	0	Never	Never	Never	NA	No (D)	NA (D)
Chlordane	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	11	0	2002	0	Never	Never	Never	NA	No (D)	NA (D)
DDD	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Zinc (total)	3	D	11	0	2002	2	2001	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	25	0	2012	0	Never	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.51. Reevaluation Data Analysis Results for Class C Use in Klingle Valley

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.52. Reevaluation Data Analysis Results for Class D Use in Klingle Valley

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	3	D	23	0	2012	0	Never	Never	Never	NA	No (D)	NA (D)
Chlordane	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	10	0	2002	1	2001	Never	Never	NA	No (D)	NA (D)
DDD	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Zinc (total)	3	D	10	0	2002	1	2001	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	24	0	2012	1	2001	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.53. Reevaluation Data Analysis Results for Class C Use in Luzon Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.54. Reevaluation Data Analysis Results for Class D Use in Luzon Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	3	D	23	0	2012	0	Never	Never	Never	NA	No (D)	NA (D)
Chlordane	4a	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	9	0	2002	1	2001	Never	Never	NA	No (D)	NA (D)
DDD	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Zinc (total)	3	D	9	0	2002	4	2002	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	23	0	2012	2	2001	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.55. Reevaluation Data Analysis Results for Class C Use in Melvin Hazen Valley Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	3	D	14	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	14	13	2021	1	2020	1 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	9 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	14	13	2021	1	2020	1 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	9 (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	14	13	2021	2	2020	2 (CCC) Never (CMC)	2020 (CCC) Never (CMC)	10 (CCC) NA (CMC)	Yes (CCC) No (CMC)	2018 - 2021 (CCC) NA (CMC)
Dieldrin	4a	D	14	13	2021	7	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	3	D	14	13	2021	2	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	13	13	2021	1	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	14	13	2021	2	2020	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	14	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	14	13	2021	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	6	5	2021	5	2021	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.56. Reevaluation Data Analysis Results for Class D Use in Melvin Hazen Valley Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	3	D	38	13	2021	6	2021	6	2021	3	Yes (D)	2018 - 2021 (D)
Chlordane	3	D	14	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	23	13	2021	9	2021	Never	Never	NA	No (D)	NA (D)
DDD	3	D	14	13	2021	1	2020	1	2020	9	No (D)	NA (D)
DDE	3	D	14	13	2021	1	2020	1	2020	9	No (D)	NA (D)
DDT	3	D	14	13	2021	2	2020	2	2020	10	Yes (D)	2018 - 2021 (D)
Dieldrin	4a	D	14	13	2021	7	2021	7	2021	2	Yes (D)	2018 - 2021 (D)
Heptachlor epoxide	3	D	14	13	2021	2	2021	2	2021	4	Yes (D)	2018 - 2021 (D)
Mercury (total)	Not Listed	N/A	13	13	2021	1	2020	Never	Never	NA	No (D)	NA (D)
PAH1	3	D	14	13	2021	2	2020	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	14	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	14	13	2021	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	6	5	2021	5	2021	5	2021	1	Yes (D)	2018 - 2021 (D)
Zinc (total)	3	D	23	13	2021	6	2021	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	38	13	2021	11	2021	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.57. Reevaluation Data Analysis Results for Class C Use in Normanstone Creek

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.58. Reevaluation Data Analysis Results for Class D Use in Normanstone Creek

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	Not Listed	N/A	24	0	2012	0	Never	Never	Never	NA	No (D)	NA (D)
Chlordane	Not Listed	N/A	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	10	0	2002	0	Never	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	Not Listed	N/A	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Zinc (total)	Not Listed	N/A	10	0	2002	1	2000	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	24	0	2012	5	2012	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.59. Reevaluation Data Analysis Results for Class C Use in Pinehurst Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.60. Reevaluation Data Analysis Results for Class D Use in Pinehurst Branch												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	3	D	24	0	2012	0	Never	Never	Never	NA	No (D)	NA (D)
Chlordane	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	10	0	2002	0	Never	Never	Never	NA	No (D)	NA (D)
DDD	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Zinc (total)	3	D	10	0	2002	1	2001	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	24	0	2012	2	2012	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.61. Reevaluation Data Analysis Results for Class C Use in Piney Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.62. Reevaluation Data Analysis Results for Class D Use in Piney Branch												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	3	D	25	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Chlordane	4a	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	11	0	2013	1	2013	Never	Never	NA	No (D)	NA (D)
DDD	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Zinc (total)	3	D	11	0	2013	2	2013	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	25	0	2013	3	2013	Never	Never	NA	No (D)	NA (D)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.63. Reevaluation Data Analysis Results for Class C Use in Portal Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, “NA” is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.64. Reevaluation Data Analysis Results for Class D Use in Portal Branch

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	3	D	24	0	2012	0	Never	Never	Never	NA	No (D)	NA (D)
Chlordane	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	10	0	2002	0	Never	Never	Never	NA	No (D)	NA (D)
DDD	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Zinc (total)	3	D	10	0	2002	6	2002	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	24	0	2012	0	Never	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.65. Reevaluation Data Analysis Results for Class C Use in Soapstone Creek												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	4a	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) N A (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	1	0	2013	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) N A (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	1	0	2013	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	3	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.66. Reevaluation Data Analysis Results for Class D Use in Soapstone Creek												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	3	D	25	0	2012	0	Never	Never	Never	NA	No (D)	NA (D)
Chlordane	4a	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	3	D	11	0	2002	1	2000	Never	Never	NA	No (D)	NA (D)
DDD	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Heptachlor epoxide	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH1	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	1	0	2013	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	1	0	2013	1	2013	1	2013	0	No (D)	NA (D)
Zinc (total)	3	D	11	0	2002	4	2002	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	25	0	2012	4	2004	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Other Waterbodies

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Table B.67. Reevaluation Data Analysis Results for Class C Use in C&O Canal												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	15	0	1995	15	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.68. Reevaluation Data Analysis Results for Class D Use in C&O Canal

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class D HH criterion	Most Recent Class D Exceedance	No. of Samples Since Last Class D Exceedance	Has there been more than one Class D exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class D exceedance?*
Arsenic (total)	Not Listed	N/A	69	0	2012	19	1999	Never	Never	NA	No (D)	NA (D)
Chlordane	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	46	0	2002	19	1999	Never	Never	NA	No (D)	NA (D)
DDD	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	15	0	1995	15	1995	15	1995	0	Yes (D)	1995 - 1998 (D)
PAH1	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH2	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	Not Listed	N/A	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Zinc (total)	Not Listed	N/A	46	0	2002	19	1999	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	69	0	2012	21	2002	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.69. Reevaluation Data Analysis Results for Class C Use in Tidal Basin												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class C CCC or CMC criteria**	**Most Recent Class C Exceedance**	**No. of Samples Since Last Class C Exceedance***	**Has there been more than one Class C exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class C exceedance?**
Arsenic (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	3	D	3	0	2014	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	3	0	2014	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	3	0	2014	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	3	0	2014	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	3	D	3	0	2014	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	3	D	3	0	2014	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	10	0	1995	10	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	3	0	2014	1	2014	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	3	0	2014	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	3	0	2014	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	0	0	Never	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.70. Reevaluation Data Analysis Results for Class D Use in Tidal Basin												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	Not Listed	N/A	48	0	2012	15	1999	Never	Never	NA	No (D)	NA (D)
Chlordane	3	D	3	0	2014	0	Never	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	33	0	2002	15	1999	Never	Never	NA	No (D)	NA (D)
DDD	3	D	3	0	2014	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	3	0	2014	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	3	0	2014	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	3	D	3	0	2014	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	3	D	3	0	2014	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	10	0	1995	10	1995	10	1995	0	Yes (D)	1995 - 1998 (D)
PAH1	3	D	3	0	2014	1	2014	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	3	0	2014	0	Never	Never	Never	NA	No (D)	NA (D)
PAH3	3	D	3	0	2014	0	Never	Never	Never	NA	No (D)	NA (D)
PCBs	4a	D	0	0	Never	0	Never	Never	Never	NA	No (D)	NA (D)
Zinc (total)	Not Listed	N/A	33	0	2002	17	2000	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	48	0	2012	17	2002	Never	Never	NA	No (D)	NA (D)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.71. Reevaluation Data Analysis Results for Class C Use in Washington Ship Channel

Pollutant	2020 303(d) Listing Category	Impaired Use Class	No. of samples 1990 to 2021	No. of samples 7/1/16 to 6/30/21	Most Recent Sample	No. of detects	Most recent detect	No. of individual samples exceeding the Class C CCC or CMC criteria	Most Recent Class C Exceedance	No. of Samples Since Last Class C Exceedance*	Has there been more than one Class C exceedance in a three-year period? (Y/N)	When was the last three-year period with more than one Class C exceedance?
Arsenic (dissolved)	Not Listed	N/A	16	12	2016	4	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Chlordane	3	D	19	12	2016	16	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Copper (dissolved)	Not Listed	N/A	16	12	2016	16	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDD	3	D	19	12	2016	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDE	3	D	19	12	2016	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
DDT	3	D	19	12	2016	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Dieldrin	3	D	19	12	2016	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Heptachlor epoxide	3	D	19	12	2016	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Mercury (total)	Not Listed	N/A	29	12	2016	13	1995	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH1	3	D	19	12	2016	1	2013	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH2	3	D	19	12	2016	2	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PAH3	3	D	19	12	2016	1	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
PCBs	4a	D	16	12	2016	9	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Zinc (dissolved)	Not Listed	N/A	16	12	2016	1	2016	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)
Lead (dissolved)	Not Listed	N/A	16	12	2016	0	Never	Never (CCC) Never (CMC)	Never (CCC) Never (CMC)	NA (CCC) NA (CMC)	No (CCC) No (CMC)	NA (CCC) NA (CMC)

*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.

Table B.72. Reevaluation Data Analysis Results for Class D Use in Washington Ship Channel												
Pollutant	**2020 303(d) Listing Category**	**Impaired Use Class**	**No. of samples 1990 to 2021**	**No. of samples 7/1/16 to 6/30/21**	**Most Recent Sample**	**No. of detects**	**Most recent detect**	**No. of individual samples exceeding the Class D HH criterion**	**Most Recent Class D Exceedance**	**No. of Samples Since Last Class D Exceedance**	**Has there been more than one Class D exceedance in a three-year period? (Y/N)**	**When was the last three-year period with more than one Class D exceedance?***
Arsenic (total)	Not Listed	N/A	57	12	2016	23	2016	5	2016	8	Yes (D)	2016 - 2019 (D)
Chlordane	3	D	19	12	2016	16	2016	Never	Never	NA	No (D)	NA (D)
Copper (total)	Not Listed	N/A	43	12	2016	29	2016	Never	Never	NA	No (D)	NA (D)
DDD	3	D	19	12	2016	0	Never	Never	Never	NA	No (D)	NA (D)
DDE	3	D	19	12	2016	0	Never	Never	Never	NA	No (D)	NA (D)
DDT	3	D	19	12	2016	0	Never	Never	Never	NA	No (D)	NA (D)
Dieldrin	3	D	19	12	2016	0	Never	Never	Never	NA	No (D)	NA (D)
Heptachlor epoxide	3	D	19	12	2016	0	Never	Never	Never	NA	No (D)	NA (D)
Mercury (total)	Not Listed	N/A	29	12	2016	13	1995	13	1995	16	Yes (D)	1995 - 1998 (D)
PAH1	3	D	19	12	2016	1	2013	Never	Never	NA	No (D)	NA (D)
PAH2	3	D	19	12	2016	2	2016	1	2016	4	No (D)	NA (D)
PAH3	3	D	19	12	2016	1	2016	1	2016	4	No (D)	NA (D)
PCBs	4a	D	16	12	2016	9	2016	7	2016	0	Yes (D)	2016 - 2019 (D)
Zinc (total)	Not Listed	N/A	43	12	2016	19	2016	Never	Never	NA	No (D)	NA (D)
Lead (total)	Not Listed	N/A	59	12	2016	19	2010	Never	Never	NA	No (D)	NA (D)
*In these columns, "NA" is used when there has never been an exceedance, and so the number of samples since the last exceedance and the last three-year period with more than one exceedance is not applicable.												

Appendix C. Comparison of Reevaluation Results with 2020 IR Lists

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Anacostia Watershed				
Waterbody	**Pollutant**	**2020 IR Listing Category**	**Reevaluation Impairment Results**	**Comment**
Upper Anacostia	Arsenic	4a	HH[1]	Impairment Verified
Upper Anacostia	Chlordane	4a		No WQ evidence of impairment
Upper Anacostia	Copper	4a		No WQ evidence of impairment
Upper Anacostia	DDD	4a	CCC and HH	Impairment Verified
Upper Anacostia	DDE	4a		No WQ evidence of impairment
Upper Anacostia	DDT	4a	CCC and HH	Impairment Verified
Upper Anacostia	Dieldrin	4a	HH	Impairment Verified
Upper Anacostia	Heptachlor epoxide	4a	HH	Impairment Verified
Upper Anacostia	PAH1	4a		No WQ evidence of impairment
Upper Anacostia	PAH2	4a		No WQ evidence of impairment
Upper Anacostia	PAH3	4a		No WQ evidence of impairment
Upper Anacostia	PCBs	4a	HH	Impairment Verified
Upper Anacostia	Zinc	4a		No WQ evidence of impairment
Lower Anacostia	Arsenic	4a	HH	Impairment Verified
Lower Anacostia	Chlordane	4a		No WQ evidence of impairment
Lower Anacostia	Copper	4a		No WQ evidence of impairment
Lower Anacostia	DDD	4a	HH	Impairment Verified
Lower Anacostia	DDE	4a		No WQ evidence of impairment
Lower Anacostia	DDT	4a		No WQ evidence of impairment
Lower Anacostia	Dieldrin	4a		No WQ evidence of impairment
Lower Anacostia	Heptachlor epoxide	4a	HH	Impairment Verified
Lower Anacostia	PAH1	4a		No WQ evidence of impairment
Lower Anacostia	PAH2	4a	HH	Impairment Verified
Lower Anacostia	PAH3	4a		No WQ evidence of impairment
Lower Anacostia	PCBs	4a	HH	Impairment Verified
Lower Anacostia	Zinc	4a		No WQ evidence of impairment
Fort Chaplin Trib	Arsenic	4a	HH	Impairment Verified
Fort Davis Trib	Arsenic	4a	HH	Impairment Verified
Fort Dupont Trib	Arsenic	4a	HH	Impairment Verified
Fort Dupont Trib	PCBs	4a	HH	Candidate for Category 5
Fort Stanton Trib	Arsenic	4a	HH	Impairment Verified
Fort Stanton Trib	PAH1	4a		No WQ evidence of impairment
Fort Stanton Trib	PAH2	4a		No WQ evidence of impairment
Fort Stanton Trib	PAH3	4a		No WQ evidence of impairment
Fort Stanton Trib	PCBs	4a	HH	Impairment Verified
Hickey Run	Chlordane	4a		No WQ evidence of impairment
Hickey Run	DDE	4a		No WQ evidence of impairment
Hickey Run	PAH1	4a		No WQ evidence of impairment
Hickey Run	PAH2	4a		No WQ evidence of impairment
Hickey Run	PAH3	4a		No WQ evidence of impairment

Anacostia Watershed				
Waterbody	**Pollutant**	**2020 IR Listing Category**	**Reevaluation Impairment Results**	**Comment**
Hickey Run	PCBs	4a		No WQ evidence of impairment
Kingman Lake	Arsenic	4a	HH	Impairment Verified
Kingman Lake	Chlordane	4a		No WQ evidence of impairment
Kingman Lake	DDT	4a		No WQ evidence of impairment
Kingman Lake	PAH1	4a		No WQ evidence of impairment
Kingman Lake	PAH2	4a		No WQ evidence of impairment
Kingman Lake	PAH3	4a		No WQ evidence of impairment
Kingman Lake	PCBs	4a	HH	Impairment Verified
Nash Run	Arsenic	4a	HH	Impairment Verified
Nash Run	Chlordane	4a		No WQ evidence of impairment
Nash Run	Dieldrin	4a		No WQ evidence of impairment
Nash Run	Heptachlor epoxide	4a		No WQ evidence of impairment
Nash Run	PAH1	4a		No WQ evidence of impairment
Nash Run	PAH2	4a		No WQ evidence of impairment
Nash Run	PAH3	4a		No WQ evidence of impairment
Nash Run	PCBs	4a		No WQ evidence of impairment
Pope Branch	Chlordane	4a		No WQ evidence of impairment
Pope Branch	DDE	4a		No WQ evidence of impairment
Pope Branch	Heptachlor epoxide	4a		No WQ evidence of impairment
Pope Branch	PAH1	4a		No WQ evidence of impairment
Pope Branch	PAH2	4a		No WQ evidence of impairment
Pope Branch	PAH3	4a		No WQ evidence of impairment
Pope Branch	PCBs	4a		No WQ evidence of impairment
Texas Avenue Trib	Arsenic	4a	HH	Impairment Verified
Texas Avenue Trib	Chlordane	4a		No WQ evidence of impairment
Texas Avenue Trib	DDD	4a	CCC and HH	Impairment Verified
Texas Avenue Trib	DDE	4a		No WQ evidence of impairment
Texas Avenue Trib	DDT	4a		No WQ evidence of impairment
Texas Avenue Trib	Dieldrin	4a	HH	Impairment Verified
Texas Avenue Trib	Heptachlor epoxide	4a		No WQ evidence of impairment
Texas Avenue Trib	PAH1	4a		No WQ evidence of impairment
Texas Avenue Trib	PAH2	4a		No WQ evidence of impairment
Texas Avenue Trib	PAH3	4a		No WQ evidence of impairment
Texas Avenue Trib	PCBs	4a		No WQ evidence of impairment
Wash Ship Chan	Arsenic	Not Listed	HH	Candidate for Category 5
Wash Ship Chan	PCBs	4a	HH	Impairment Verified
Upper Watts Br	Arsenic	Not listed	HH	Candidate for Category 5
Upper Watts Br	Chlordane	4a		No WQ evidence of impairment
Upper Watts Br	Dieldrin	4a	HH	Impairment Verified

Anacostia Watershed				
Waterbody	**Pollutant**	**2020 IR Listing Category**	**Reevaluation Impairment Results**	**Comment**
Upper Watts Br	PCBs	4a	HH	Impairment Verified
Lower Watts Br	Arsenic	Not listed	HH	Candidate for Category 5
Lower Watts Br	Chlordane	4a		No WQ evidence of impairment
Lower Watts Br	Dieldrin	4a	HH	Impairment Verified
Lower Watts Br	PCBs	4a		No WQ evidence of impairment

[1] HH refers to impairment of Class D Human Health numeric criteria.

[2] CCC refers to impairment of Class C criterion continuous concentration.

Potomac Watershed				
Waterbody	**Pollutant**	**2020 IR Listing Category**	**Reevaluation Impairment Results**	**Comment**
Upper Potomac	Arsenic	Not Listed	HH	Candidate for Category 5
Upper Potomac	PCBs	4a	HH	Impairment Verified
Middle Potomac	Arsenic	Not Listed	HH	Candidate for Category 5
Middle Potomac	Dieldrin	Not Listed	HH	Candidate for Category 5
Middle Potomac	PCBs	4a	HH	Impairment Verified
Lower Potomac	Arsenic	Not listed	HH	Candidate for Category 5
Lower Potomac	PCBs	4a	HH	Impairment Verified
C&O Canal	PCBs	4a		No WQ evidence of impairment
Dalecarlia Trib	Dieldrin	4a		No WQ evidence of impairment
Dalecarlia Trib	Heptachlor epoxide	4a		No WQ evidence of impairment
Dalecarlia Trib	PCBs	4a		No WQ evidence of impairment
Oxon Run	Dieldrin	4a		No WQ evidence of impairment
Oxon Run	PCBs	4a		No WQ evidence of impairment
Tidal Basin	PCBs	4a		No WQ evidence of impairment

Rock Creek Watershed				
Waterbody	**Pollutant**	**2020 IR Listing Category**	**Reevaluation Impairment Results**	**Comments**
Upper Rock Creek	Copper	4a		No WQ evidence of impairment
Upper Rock Creek	Lead	4a		No WQ evidence of impairment
Upper Rock Creek	Mercury	4a		No WQ evidence of impairment
Upper Rock Creek	Zinc	4a		No WQ evidence of impairment
Lower Rock Creek	Arsenic	Not Listed	HH	Candidate for Category 5
Lower Rock Creek	DDE	Not Listed	CCC and HH	Candidate for Category 5
Lower Rock Creek	Dieldrin	Not Listed	HH	Candidate for Category 5
Lower Rock Creek	Heptachlor epoxide	Not Listed	HH	Candidate for Category 5
Lower Rock Creek	Copper	4a		No WQ evidence of impairment

Lower Rock Creek	Lead	4a		No WQ evidence of impairment
Lower Rock Creek	Mercury	4a		No WQ evidence of impairment
Lower Rock Creek	PCBs	Not Listed	HH	Candidate for Category 5
Lower Rock Creek	Zinc	4a		No WQ evidence of impairment
Broad Branch	Arsenic	Not Listed	HH	Candidate for Category 5
Broad Branch	Chlordane	4a		No WQ evidence of impairment
Broad Branch	DDT	Not Listed	HH	Candidate for Category 5
Broad Branch	Dieldrin	4a	HH	Impairment Verified
Broad Branch	Heptachlor epoxide	4a	HH	Impairment Verified
Broad Branch	PCBs	4a	HH	Impairment Verified
Dumbarton Oaks	Arsenic	Not Listed	HH	Candidate for Category 5
Dumbarton Oaks	Chlordane	4a	CCC and HH	Impairment Verified
Dumbarton Oaks	DDT	Not Listed	CCC and HH	Candidate for Category 5
Dumbarton Oaks	Dieldrin	4a	HH	Impairment Verified
Dumbarton Oaks	Heptachlor epoxide	4a	CCC and HH	Impairment Verified
Dumbarton Oaks	PCBs	4a	HH	Impairment Verified
Fenwick Branch	DDT	4a		No WQ evidence of impairment
Fenwick Branch	Dieldrin	4a		No WQ evidence of impairment
Fenwick Branch	Heptachlor epoxide	4a		No WQ evidence of impairment
Fenwick Branch	PCBs	4a		No WQ evidence of impairment
Klingle Valley Run	Dieldrin	4a		No WQ evidence of impairment
Klingle Valley Run	Heptachlor epoxide	4a		No WQ evidence of impairment
Klingle Valley Run	PCBs	4a		No WQ evidence of impairment
Luzon Branch	Chlordane	4a		No WQ evidence of impairment
Luzon Branch	Dieldrin	4a		No WQ evidence of impairment
Luzon Branch	Heptachlor epoxide	4a		No WQ evidence of impairment
Luzon Branch	PCBs	4a		No WQ evidence of impairment
Melvin Hazen Br	Arsenic	Not Listed	HH	Candidate for Category 5
Melvin Hazen Br	DDT	4a	CCC and HH	Impairment Verified
Melvin Hazen Br	Dieldrin	4a	HH	Impairment Verified
Melvin Hazen Br	Heptachlor epoxide	Not Listed	HH	Candidate for Category 5
Melvin Hazen Br	PCBs	4a	HH	Impairment Verified
Normanstone Crk	Dieldrin	4a		No WQ evidence of impairment
Normanstone Crk	Heptachlor epoxide	4a		No WQ evidence of impairment
Normanstone Crk	PCBs	4a		No WQ evidence of impairment
Pinehurst Branch	Dieldrin	4a		No WQ evidence of impairment
Pinehurst Branch	Heptachlor epoxide	4a		No WQ evidence of impairment
Pinehurst Branch	PCBs	4a		No WQ evidence of impairment

Piney Branch	Chlordane	4a		No WQ evidence of impairment
Piney Branch	Dieldrin	4a		No WQ evidence of impairment
Piney Branch	Heptachlor epoxide	4a		No WQ evidence of impairment
Piney Branch	PCBs	4a		No WQ evidence of impairment
Portal Branch	Dieldrin	4a		No WQ evidence of impairment
Portal Branch	Heptachlor epoxide	4a		No WQ evidence of impairment
Portal Branch	PCBs	4a		No WQ evidence of impairment
Soapstone Creek	Chlordane	4a		No WQ evidence of impairment
Soapstone Creek	Dieldrin	4a		No WQ evidence of impairment
Soapstone Creek	Heptachlor epoxide	4a		No WQ evidence of impairment
Soapstone Creek	PCBs	4a		No WQ evidence of impairment

Good Cause Justification Table-Category 4A and 4C Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant Cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
DCANA00E	Upper Anacostia	Anacostia	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCANA00E	Lower Anacostia	Anacostia	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant Cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			Copper	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTFC01R	Fort Chaplin	Anacostia	Physical habitat substrate	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTFS01R	Fort Stanton	Anacostia	PAH1	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant Cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
			PAH2	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Alteration in stream-side or littoral vegetative covers	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTHR01R	Hickey Run	Anacostia	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant Cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCAKL00L	Kingman Lake	Anacostia	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTNA01R	Nash Run	Anacostia	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant Cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTPB01R	Pope Branch	Anacostia	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant Cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), ***Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations***)
			PAH1	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTTX27R	Texas Avenue Tributary	Anacostia	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table-Category 4A and 4C Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant Cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), ***Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations***)
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
			Particle distribution (embeddedness)	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTWB00R_02	Upper Watts Branch	Anacostia	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTWB00R_01	Lower Watts Branch	Anacostia	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant Cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTCO01L	C&O Canal	Potomac	PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTDA01R	Dalecarlia Tributary	Potomac	Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTFB02R	Foundry Branch	Potomac	Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTMH01R	Melvin Hazen	Potomac	Alteration in stream-side or littoral vegetative covers	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTOR01R	Oxon Run	Potomac	Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant Cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
DCPTB01L	Tidal Basin	Potomac	PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCRCR00R_02	Upper Rock Creek	Rock Creek	Copper	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Lead	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Mercury	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCRCR00R_01	Lower Rock Creek	Rock Creek	Copper	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Lead	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Mercury	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant Cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			Zinc	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTBR01R	Broad Branch	Rock Creek	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTFE01R	Fenwick Branch	Rock Creek	DDT	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTKV01R	Klingle Valley Run	Rock Creek	Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table-Category 4A and 4C Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant Cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Alteration in stream-side or littoral vegetative cover	4C	R	Listing has been clarified as 'Habitat Assessment'.
			Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTLU01R	Luzon Branch	Rock Creek	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTNS01R	Normanstone Creek	Rock Creek	Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant Cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTPI01R	Pinehurst Branch	Rock Creek	Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTPY01R	Piney Branch	Rock Creek	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table-Category 4A and 4C Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant Cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), ***Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations***)
DCTPO01R	Portal Branch	Rock Creek	Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Flow regime modification	4C	R	Listing has been clarified as 'Habitat Assessment'.
DCTSO01R	Soapstone Creek	Rock Creek	Chlordane	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PCBs	4A	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

[1]Pollutants recommended for removal should be removed from the 303(d) list of pollutant causes for an impairment. Existing TMDLs, WLAs and LAs for pollutants recommended for removal from 303(d) listings should be considered for revision to remove these pollutants as well.
[2]Pollutants recommended for recategorization should be moved from their current IR listing category to a new listing category. The new listing category should be specified in the table.

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
DCTDU01R	Fort Dupont	Anacostia	Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTHR01R	Hickey Run	Anacostia	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), ***Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations***)
			Heptachlor epoxide	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCAKL00L	Kingman Lake	Anacostia	Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTNA01R	Nash Run	Anacostia	Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTPB01R	Pope Branch	Anacostia	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
			Dieldrin	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTWB00R	Upper Watts Branch	Anacostia	DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTWB00R	Lower Watts Branch	Anacostia	DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table – Category 3 Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTBK01R	Battery Kemble Creek	Potomac	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTDA01R	Dalecarlia Tributary	Potomac	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Chlordane	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), ***Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations***)
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTOR01R	Oxon Run	Potomac	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Chlordane	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCPTB01L	Tidal Basin	Potomac	Chlordane	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table – Category 3 Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCPWC04E	Washington Ship Channel	Potomac	Chlordane	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Dieldrin	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			Heptachlor epoxide	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTDO01R	Dumbarton Oaks	Rock Creek	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table – Category 3 Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant PAH1being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2.	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTFE01R	Fenwick Branch	Rock Creek	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Chlordane	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTKV01R	Klingle Valley Run	Rock Creek	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Chlordane	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table – Category 3 Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTLU01R	Luzon Branch	Rock Creek	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTMH01R	Melvin Hazen Branch	Rock Creek	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Chlordane	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Heptachlor epoxide	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTPI01R	Pinehurst Branch	Rock Creek	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Chlordane	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTPY01R	Piney Branch	Rock Creek	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
			PAH1		R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTPO01R	Portal Branch	Rock Creek	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Chlordane	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant

Good Cause Justification Table – Category 3 Pollutants						
Waterbody ID	**Waterbody Name**	**River Basin**	**Pollutant cause in 2020 IR**	**WQS Categorization in 2020 IR**	**Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR**	**Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)**
						being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
DCTSO01R	Soapstone Creek	Rock Creek	Arsenic	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Copper	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			Zinc	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDD	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

Good Cause Justification Table – Category 3 Pollutants

Waterbody ID	Waterbody Name	River Basin	Pollutant cause in 2020 IR	WQS Categorization in 2020 IR	Recommended for Removal[1] (R) or Recategorization[2] (C) in 2022 IR	Good Cause Justification (from 40 CFR § 130.7(b)(5), *Total Maximum Daily Loads and Individual Water Quality-based Effluent Limitations*)
			DDE	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			DDT	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH1	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH2	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)
			PAH3	3	R	More recent or accurate data; flaws in the original analysis that led to the water being listed/pollutant being identified as a cause of impairment in the categories in § 130.7(b)(5)

[1]Pollutants recommended for removal should be removed from the 303(d) list of pollutant causes for an impairment. Existing TMDLs, WLAs and LAs for pollutants recommended for removal from 303(d) listings should be considered for revision to remove these pollutants as well.

[2]Pollutants recommended for recategorization should be moved from their current IR listing category to a new listing category. The new listing category should be specified in the table.