



FACT SHEET

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

NPDES Permit No. DC0000337

The United States Environmental Protection Agency (EPA) Proposed the Reissuance of a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) For:

**Washington Metropolitan Area Transit Authority
Mississippi Avenue Pumping Station
1400 Mississippi Avenue, SE
Washington, D.C. 20032**

Applicant Information	
Applicant Name	Washington Metropolitan Area Transit Authority (WMATA)
Applicant Mailing Address	3500 Pennsy Drive, Room C-172, Hyattsville, Maryland 20785

PUBLIC NOTICE

Public Comment Start Date: October 24, 2018

Public Comment Expiration Date: November 23, 2018

EPA is proposing to reissue the NPDES permit for the Washington Metropolitan Area Transit Authority (WMATA) subject to certain effluent discharge limitations, monitoring requirements, and other terms and conditions identified in the permit. The permit requirements are based on Section 402 of the Clean Water Act (33 U.S.C. 1342 et seq.), and NPDES regulations found at 40 CFR Parts 122, 124, 125 and 131.

Persons wishing to comment on, or request a public hearing for, the draft permit for this applicant may do so in writing by the expiration date of the public comment period. A request for a public hearing must state the nature of the issues as well as the requester’s name, address, and telephone number. All comments and requests for public hearings must be in writing and should be submitted to the following:

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U.S. EPA Region III
NPDES Permits Branch (3WP41)
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After the public comment period expires, and all comments have been considered, EPA’s regional Director for the Water Protection Division will make a final decision regarding permit issuance. If no substantive comments have been received, the tentative conditions in the draft permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR §124.19.

SUMMARY**Facility Description**

The Washington Metropolitan Area Transit Authority (“WMATA”) seeks to renew their NPDES permit for discharges from the Mississippi Avenue Pumping Station in the southeast quadrant of Washington, D.C. to Oxon Run, a tributary to the Potomac River.

The WMATA treats groundwater infiltration from approximately 7,000 feet of subway tunnels running between the Congress Heights and Southern Avenue Stations on WMATA’s “Green Line.” The tunnels consist of inbound and outbound track areas with collection channels at the center of each track. Groundwater seepage running through the channels is collected in a sump at the Mississippi Avenue Pumping Station along with groundwater collected from the vent shaft perimeter drains. The water is then pumped north from the pumping station to the fan shaft at Mississippi Avenue, and then pumped to grade where it enters the Mississippi Avenue Treatment Building.

The tunnel pumping station consists of a wet well and two water pumps that convey water to the treatment building, where treatment takes place. An automated treatment system was installed in the treatment building to stabilize the pH and Total Suspended Solids in the discharge. Sediment is captured within the wet well of the discharge pumping station and is periodically removed using track vacuum equipment. Additional sediment removal and pH neutralization are accomplished in the treatment building. Once the sediment is removed the pH is neutralized using sulfuric acid and/or sodium hydroxide. Once the pH is within the specified range the water goes to a settling tank where a flocculant/coagulant is added to promote the precipitation of sediment out of solution. Sludge is removed from the treatment building approximately two times a year and is hauled off-site for disposal.

The following is a list of changes from the previous permit:

- Monitoring for Fecal Coliform was removed because both the Oxon Run TMDL and the DC Water Quality Standards were revised to replace Fecal Coliform with *E. Coli*. More detail is discussed below.
- Annual monitoring for select Oxon Run TMDL pollutants were removed from the permit since these pollutants are no longer causing impairment and were delisted from the TMDL. More detail is discussed below.
- A special condition requiring the permittee to conduct a priority pollutant scan was removed based on new data and information. More detail is discussed below.

Discharge Description

Based on Discharge Monitoring Report (DMR) data, the average reported flow of groundwater seepage that is discharged from the collection channels is 3.97 gallons per minute (gpm). The collected groundwater is discharged from the tunnels and the vent shaft perimeter drains. It then collects in the pumping station’s wet well, where some sediment is collected, and the water is then pumped to the treatment building where it is treated for sediment removal and pH adjustment before discharging to Oxon Run.

Discharge Description (continued)

Table 1. Discharge location

OUTFALL NO.	LATITUDE	LONGITUDE	RECEIVING WATER	DESIGNATED USES	RECEIVING WATER IMPAIRMENT	TMDL ?
001	38° 50' 26"	76° 59' 8"	Oxon Run	A, B, C, D, E	Dieldren, <i>E. coli</i>	Yes

Classifications of the District’s Waters, Defined:

- Class A – Primary Contact Recreation
- Class B – Secondary Contact Recreation
- Class C – Protection and propagation fish, shellfish and wildlife
- Class D – Protection of human health related to consumption of fish and shellfish
- Class E – Navigation

Removal of Priority Pollutant Scan Monitoring Requirement

In addition to the monitoring of the TMDL pollutants listed above, a special condition was set forth in the previous three permit terms requiring the permittee to submit a priority pollutant scan. The purpose of this was to characterize the effluent and determine if the permittee was discharging pollutants of concern outside of those listed in the TMDL. The results of the priority pollutant scans over the last three permit terms were all non-detects. EPA believes the WMATA discharge has been adequately characterized, and since the priority pollutant scans have shown no reasonable potential to cause or contribute to an exceedance of D.C. water quality standards the requirement to conduct a priority pollutant scan was removed from the permit.

RECEIVING WATER CHARACTERIZATION

303(d) Status of Oxon Run

Based on the District’s 2016 Integrated Report¹, Oxon Run is not on the 303(d) list but has TMDLs for *E.coli* and dieldrin which is discussed in more detail below.

Total Maximum Daily Loads (TMDLs)

Chesapeake Bay TMDLs (approved December 2010)

The Chesapeake Bay TMDL categorizes the DC Metro as a non-significant industrial discharger and is included in the aggregate wasteload allocations (WLAs) for TN, TP, and TSS. The permittee has been monitoring for TN, TP, and TSS over the previous permit term to verify their existing loads are consistent with the assumptions of the aggregate WLA. Review of the data show this discharge is consistent with the assumptions and requirements of the aggregate WLA of the Bay TMDL. Monitoring for TN, TP, and TSS will remain in the permit to meet assumptions of the WLA and to inform future TMDL revisions.

Oxon Run TMDLs (approved December 2004)

All pollutants, except *E. coli* and dieldrin, were delisted from the Oxon Run TMDL. According to the 2016 Integrated Report, Oxon Run is impaired for, and has TMDLs for, *E. coli* and dieldrin. Below is a table of TMDL pollutants the permittee monitored annually since the last permit reissuance in 2012. The results of the monitoring showed non-detects for all pollutants listed below except arsenic and *E. coli*,

¹ At the time of permit issuance, the 2016 Integrated Report was the most current report.

which had reported values of 1.1 µg/L and 46 CFU/100mL, respectively. More discussion on arsenic and *E. coli* can be found below in the reasonable potential analysis.

Table 2. TMDL pollutants monitored annually during previous permit term

Escherichia coli	Benzo[g,h,i]perylene	Benz[a]anthracene
Fecal Coliform	Chlordane	Chrysene
Naphthalene	DDT	Benzo[k]fluoranthene
2-methyl naphthalene	DDD	Benzo[a]pyrene
Acenaphthylene	DDE	Dieldrin
Acenaphthene	Phenanthrene	Heptachlor Epoxide
Fluorene	Fluoranthene	Arsenic-dissolved
Perylene	Pyrene	Lead-dissolved
Indeno[1,2,3-c,d]pyrene	Total PCBs	

While the DMR data show this discharge is not a significant source of *E. coli* and dieldrin, annual monitoring for these two pollutants will remain in the permit to be consistent with the assumptions and requirements of the Oxon Run TMDL and to inform future TMDL revisions.

BASIS FOR EFFLUENT LIMITATIONS

In general, the Clean Water Act (Act) requires compliance with all applicable statutory and regulatory requirements, including effluent limitations based on the capabilities of technologies available to control pollutants (i.e., technology-based effluent limits) and limitations that are protective of the water quality standards of the receiving water (i.e., water quality-based effluent limits). Typically, technology-based effluent limitations or TBELs are developed for all applicable pollutants of concern (§122.44(a)) and water quality-based effluent limitations, or WQBELs, are developed where TBELs are not adequate to meet water quality standards in the receiving water (§122.44(d)).

The final effluent limitations for Total Suspended Solids (TSS), pH, and Oil and Grease, will ensure that all applicable water quality standards are achieved. This is discussed in more detail below.

REASONABLE POTENTIAL ANALYSIS AND RATIONALE FOR EFFLUENT LIMITATIONS

A reasonable potential (RP) analysis was conducted on all data submitted to EPA to determine if the discharge shows the potential to exceed in-stream water quality criteria. 40 CFR §122.44(d)(1)(iii) requires effluent limitations be established in permits when it is determined that a discharge will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including narrative criteria.

Procedures in the Technical Support Document for Water Quality-Based Toxics Control (TSD) were used in the RP analysis. All data collected over the last permit term were evaluated, which includes DMR data, data collected from the annual priority pollutant scans, and data from monitoring of TMDL parameters.

Step 1. List the parameter(s) of concern and determine if any are a candidate for a reasonable potential analysis. A parameter of concern is defined here as a pollutant with quantifiable values reported to EPA. A parameter is considered a candidate for an RP analysis when the reported quantifiable values are at or above water quality criteria. Table 3 below lists all the parameters of concern for this discharge.

Step 1. (continued)

Table 3. Parameters of concern for this discharge

Parameter of Concern	Highest Value	Most Stringent Water Quality	Candidate for RP Analysis?	# of samples
Total Suspended Solids (mg/L)	100	30 (TBEL)	Yes	70
Total Recoverable Copper (mg/L)	0.02	.009328908	Yes	69
Total Recoverable Zinc (mg/L)	0.14	0.1181	Yes	69
Arsenic (µg/L)	1.1	0.14	Yes	4
<i>E. coli</i> (CFU/100mL)	46	126	Yes	5
Oil and Grease (mg/L)	6	10	No	70

Step 2. Conduct a reasonable potential (RP) analysis for the parameters of concern

Table 4. Results from reasonable potential analysis

Outfall 001											
Parameter	# of Samples	Highest Concentration	CV	Confidence of Interval	RP multiplier	Adjusted Effluent Conc	Metal Translator	DF	RWC	WQC	RP?
Copper (µg/L)	69	19.000	0.07	99%	1	18.24	0.960	84.97	0.21467	8.955751	No
Arsenic (µg/L)	4	1.100	0.6	99%	4.2	4.62	NA	84.97	0.05437	0.14	No
Zinc (µg/L)	69	140.000	0.065	99%	1	138.04	0.986	84.97	1.62462	117.18	No
Oil & Grease (mg/L)	70	6	0.063	99%	1	6.00	NA	84.97	0.07062	10.00	No
<i>E. coli</i> (CFU/100mL)	5	46	0.6	99%	2.3	105.80	NA	84.97	1.24518	126.00	No
TSS (mg/L)	70	100	0.063	99%	1	100.00	NA	84.97	1.17692	30 (TBEL)	No

Where:

CV = coefficient of variation

DF = Dilution Factor

RWC = (Maximum) Receiving Water Concentration

WQC = Water Quality Criterion (most stringent for that parameter)

RP was determined by comparing the RWC to the most stringent WQC for that pollutant:

If RWC > most stringent WQC, then RP = Yes

If RWC < most stringent WQC, then RP = No

Note: A default metal translator was applied to parameters reported by the permittee as “total recoverable.” Multiplying results reported as “total recoverable” by the metal translator converts the result to “dissolved.” This conversion is necessary because DC water quality criteria for metals are expressed as “dissolved” (see DC WQS subsection 1104.8 and subsection 1105.10).

Calculations Explained:

Instream waste concentration (IWC):

Highest effluent flow / (lowest stream flow + highest effluent flow)

Note: 7Q10 and 1Q10 data were not available for Oxon Run, therefore the lowest stream flow reported over a 10-year period was used instead. Additionally, the highest effluent flow was used in the IWC calculation. EPA believes that using the lowest stream flow with the highest effluent flow in the IWC calculation is a conservative approach to calculating the dilution factor in determining RP.

Dilution Factor (DF):

1 / IWC

Stream data were obtained from the STORET Warehouse, EPA’s online Water Quality Data tool and used to calculate the dilution factor:

Table 5. Dilution factor calculation

Outfall #	Oxon run lowest flow over a 10-year period (cfs)	Highest Effluent Flow reported (cfs)	Instream Waste Concentration (IWC)	Dilution Factor (DF)
001	1.5	0.017864	0.01176917	84.97

Adjusted Effluent Concentration:

*highest result * default metal translator * RP multiplying factor*

Receiving Water Concentration (RWC):

(Adjusted Effluent Concentration + background concentration) / (DF-background concentration)

Note: A zero background concentration was assumed since instream data for Oxon Run were not available

40 CFR §122.44(d)(1)(ii) states that the permitting authority must account for variability in the data when conducting an RP analysis. To better characterize the effects of effluent variability the TSD applies a multiplying factor based on the number of samples and the coefficient of variation (CV). A CV of 0.6² was used for data sets with 10 samples or fewer to obtain the multiplying factor in Table 3-1 of the TSD. If the data set had more than 10 samples, a multiplying factor was calculated.

A multiplying factor was calculated for copper, zinc, and oil & grease since the number of samples was more than 10:

Table 6. Multiplying factor calculation

Pollutant	P _n	Multiplying Factor	σ	σ ²	CV calculated
copper	0.935	1.0042412	0.004957	2.45675E-05	0.07049021
zinc	0.935	1.0042412	0.004957	2.45675E-05	0.07049021
Oil & Grease	0.933	1.0037662	0.004403	1.93826E-05	0.066424913

² Chapter 3 (page 53) of the Technical Support Document for Water Quality Based Toxics Control, March 1991

Where:

P_n = the percentile represented by the highest concentration in the data and n is the number of samples. A 99% confidence level was used in this calculation:

$$P_n = (1 - \text{confidence level})^{1/n}$$

Calculated Multiplying Factor (MF) =

$$\frac{\exp(99^{\text{th}} \text{ percentile } z\text{-score} * \sigma - 0.5 * \sigma^2)}{\exp(93^{\text{rd}} \text{ percentile } z\text{-score} * \sigma - 0.5 * \sigma^2)} \quad \text{or} \quad \frac{\exp(2.326 * \sigma - 0.5 * \sigma^2)}{\exp(1.472 * \sigma - 0.5 * \sigma^2)}$$

$$\sigma = \ln(\text{CV}^2 + 1)$$

$$\sigma^2 = [\ln(\text{CV}^2 + 1)]^2$$

$$\text{CV calculated} = 1 - P_n$$

Step 3. Calculate Water Quality Based Effluent Limits (WQBELs) for parameters that have a reasonable potential to cause or contribute to an exceedance of DC Water Quality Criteria.

The results of the RP analysis show no reasonable potential for the parameters of concern to cause or contribute to an excursion of DC Water Quality Criteria, therefore no WQBELs for these parameters are necessary at this time.

Discussion

Copper, Zinc, and Arsenic:

There is no reasonable potential for copper, zinc, and arsenic to cause or contribute to an exceedance of water quality criteria. Monitoring and reporting requirements for these parameters are imposed over the next permit term to assess RP for these parameters at the next permit reissuance.

Total Suspended Solids (TSS)

The highest value of 100 mg/L for TSS reported on the DMRs demonstrates that there is a reasonable potential for this discharge to contribute to the elevated levels of sediment in Oxon Run. TSS was identified by the District through their Municipal Separate Storm Sewer System (MS4) NPDES permit to be a source of pollution contributing to waterbody degradation within the District. This discharge enters the storm sewer prior to discharging to Oxon Run. The effluent limit of 30mg/L in the previous two permits was imposed based on Best Professional Judgement equivalent to Best Practicable Technology currently available as described in 40 CFR § 125.3. The current treatment system to remove sediment is considered adequate to meet the Technology Based Effluent Limit of 30 mg/L. This effluent limit will remain in the permit to ensure this discharge does not contribute to the sediment impairment in Oxon Run and to maintain consistency with the assumptions of the TSS aggregate wasteload allocations of the Bay TMDL.

Oil and Grease

There is no reasonable potential for oil and grease to cause or contribute to an exceedance of water quality criteria. Effluent limits will remain in the permit since the mechanical operation of the subway trains through the tunnels increases the likelihood that these pollutants could mix with the groundwater seepage and discharge with the effluent.

pH

The DC Water Quality Criteria for pH requires the pH to be greater than 6.5 and less than 8.5 standard units. The limits for pH will be retained in the permit to ensure compliance with DC WQC.

E. coli

There is no reasonable potential for *E. coli* to cause or contribute to an exceedance of water quality criteria. To be consistent with the Oxon Run TMDL, the permittee was monitoring for *E. coli* over the last permit term because it was listed as a parameter causing impairment to the waterbody. This parameter is no longer causing impairment to Oxon Run and has since been delisted; however, continued monitoring and reporting of *E. coli* will be required over the next permit term to assess RP for this parameter at the next permit reissuance.

ANTI-BACKSLIDING PROVISIONS

Section 402(o) of the CWA and 40 CFR §122.44(l) prohibit the renewal, reissuance or modification of an existing NPDES permit that contains effluent limits, permit conditions, or standards that are less stringent than those established in the existing permit, unless certain exceptions are met.

All effluent limits in the permit are at least as stringent as those in the previous permit.

ANTIDEGRADATION STATEMENT

Oxon Run is a Tier 1 protected water. The proposed permit contains water quality based effluent limits for TSS, pH, and Oil and Grease. Discharges from this facility will not downgrade the water quality of Oxon Run.

ADMINISTRATIVE RECORD

Copies of the documents that comprise the administrative record for the Final and Draft Permits are available to the public for review at the Parklands-Turner Neighborhood Library, which is located at 1547 Alabama Ave., SE in Washington, D.C. 20032. An electronic copy of the Draft and Final Permits are also available on the EPA Region III website <https://www.epa.gov/npdes-permits/district-columbia-npdes-permits>. For additional information, please contact Carissa Moncavage, Mail Code 3WP41, NPDES Permits Branch, Office of NPDES Permits and Enforcement, EPA Region III, 1650 Arch Street, Philadelphia, PA 19103-2029

ENDANGERED SPECIES PROTECTION

EPA requested an official species list from the U.S. Fish and Wildlife Service (USFWS) using their *Information for Planning and Consultation* tool found on their website at: <https://ecos.fws.gov/ipac> to determine if there are any federally listed threatened or endangered species or their designated critical

habit(s) that will be affected by the DC Metro discharge. The FWS has indicated that there is a total of zero threatened, endangered, or candidate species located in the project area as defined by the iPaC online tool.

For listed species or critical habitats that fall under the jurisdiction of The National Oceanic and Atmospheric Administration Fisheries (also known as National Marine Fisheries Service) EPA has made a “no effect” determination. A “no effect” determination means there will be no direct or indirect effects to listed species or critical habitat from this proposed action.

NATIONAL HISTORIC PRESERVATION ACT

EPA initiated consultation with the District of Columbia State Historic Preservation Office (DC SHPO) in accordance with Section 106 of the National Historic Preservation Act and its implementing regulation at 36 CFR Part 800. The DC SHPO made a “no effect” determination for this permitted discharge, that is, this permit has no effect on historic properties.