

FINAL FACT SHEET

National Pollutant Discharge Elimination System (NPDES)
NPDES Permit Renewal (Groundwater Discharge)

NPDES PERMIT NUMBER: DC0000337

PERMITTEE NAME and ADDRESS:

Washington Metropolitan Area Transit Authority (WMATA)
3500 Pennsy Drive Room C-172
Hyattsville, Maryland 20785

FACILITY LOCATION:

WMATA Mississippi Avenue Pumping Station
1400 Mississippi Avenue, S.E.
Washington, D.C. 20032

RECEIVING STREAM:

Oxon Run, a Tributary to the Potomac River

ACTION TO BE TAKEN:

Today, EPA is reissuing the Washington Metro Area Transit Authority Permit. The Final Permit replaces the 2006 Permit, which expired on January 23, 2011, and has been administratively extended since that time. The Final Permit implements Total Maximum Daily Loads (TMDLs) that have been finalized since the prior permit was issued, including the Chesapeake Bay TMDL and the Oxon Run TMDL. Thus, to remain consistent with the assumptions and conditions of the applicable wasteload allocations (WLAs), EPA has added new monitoring requirements for the permittee.

According to 40 C.F.R. § 124.10(b), the comment period for this permit was 30 days, starting on February 7, 2012 and ending on March 8, 2012. EPA did not receive any comments on this permit. EPA did receive 401 Certification from the District Department of the Environment on March 5, 2012, which was contingent upon four additional conditions. EPA responded to those conditions appropriately, as explained later in this fact sheet. EPA also received concurrence with its Biological Evaluation from the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) on March 9, 2012.

FACILITY DESCRIPTION:

The Washington Metropolitan Area Transit Authority (WMATA), the permittee, submitted a National Pollutant Discharge Elimination System (NPDES) application to the U.S. Environmental Protection Agency's (EPA) Region III office on July 26, 2010. The application sought a renewal of the permittee's existing NPDES Permit for discharge from the Mississippi Avenue Pumping Station in the southeast quadrant of Washington, D.C., to Oxon Run, a tributary to the Potomac River.

The project for which the application was submitted consists of the treatment and discharge of groundwater seepage from an approximate stretch of 7,000 feet of tunnels which runs from St. Elizabeth's Hospital and the Southern Avenue Station 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 which runs through the channels is collected in a sump at the Mississippi Avenue Pumping Station, along with groundwater collected from vent shaft perimeter drains.

The pumping station consists of a wet well and two water pumps, and is where treatment takes place. An automatic treatment system is currently installed at the pumping station, along with two 100-gallon tanks with secondary containment for the acid (sulfuric acid— H_2SO_4) and base (sodium hydroxide— $NaOH$) used to neutralize the pH of the discharged water. After treatment, the water is pumped north from the station 475 feet to the Mississippi Avenue Fan Shaft, where it is pumped another 50 feet to a District of Columbia storm drain that outfalls in Oxon Run to the east end of the Fan Shaft.

DISCHARGE DESCRIPTION:

The groundwater seepage that is discharged from the approximate 7,000 feet of collection channels in the middle of each track has more than doubled since the previous permit term. Where the average flow used to be 2.8 gallons per minute (gpm), it is currently reported at 5.8gpm. Previously, the flow would range from 2-5gpm, with expectations that flow would not exceed 5gpm. However, the flow currently ranges from 3.1-10.9gpm. Excess precipitation, coupled with the dewatering along the subway lines, explains the increase in flow during the last permit term. The previous permit required flow to be a "Report only" value, with two measured samples a month. Because flow is dependent of natural weather conditions, and has no limits in current water quality standards documents, the permit requirements will remain the same for this permit term. The treated effluent discharge will continue to be an intermittent one, subject to the "on and off" cycling of the pumps at the pumping station. According to Best Professional Judgment, in order for the amount of flow to be accurately depicted, it shall be measured twice per month, since flow is reported in gpm and is intermittent.

The ground water that is discharged to the wet well from the collection channel of the tunnels and the vent shaft perimeter drains is still being treated for sediment removal

and pH neutralization. Previous construction activities in this section of WMATA's "F" route and elevated pH levels caused by the influence of the groundwater passing over the new concrete surfaces necessitated the inclusion of these parameters. Previously, the elevated pH levels were estimated to disappear after approximately two years, since similar construction projects showed those results. However, the expected time frame for pH levels to decrease due to new concrete is now five to seven years, a period which will end shortly. Another reason that discharged groundwater is being treated for pH neutralization is because the soils surrounding the tracks are acid sulfate soils. Acid sulfate soils are naturally occurring, and due to the recent construction activities, have been brought to the surface. The automated sediment removal and pH neutralization systems, which use sulfuric acid, sodium hydroxide, magnesium hydroxide, and Marfloc (flocculent) to accomplish the chemical processes are maintained and monitored for total suspended solids (TSS) once monthly and for pH twice monthly under the previous permit by WMATA, and will remain the same for this permit term. According to 40 C.F.R. § 136, grab samples shall be taken when sampling for pH and oil and grease. A grab sample is also being used for TSS. In this permit, pH is sampled twice per month because it needs to stay within the 6.5 to 8.5 range, and the discharge has the potential to be above or below that range. TSS is monitored once per month to ensure that TSS does not exceed the permit limits. TSS has not exceeded permit limits in previous monitoring.

The previous permit included a monitoring requirement for oil and grease 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. Thus, the discharge has a reasonable potential to contain oil and grease. Until recently, monitoring has not found detectable amounts of oil and grease in the discharge. The most recent results indicate that oil and grease had a Maximum Daily Concentration of 5.1 milligrams per liter (mg/L). However, since this number is well within previous permit limits, and this is the first time that oil and grease has shown up in concentrations over 5mg/L, the limit and monitoring requirements will remain the same in the Final Permit.

A Special Condition was set forth during the first two permit terms which required the permittee to monitor for any priority pollutants being discharged into Oxon Run. This was done so that the effluent could be characterized. Priority pollutant monitoring was required once at the beginning of each of the past two permit terms. As noted below, the Oxon Run Total Maximum Daily Load (TMDL) was written for four distinct metals (arsenic, copper, lead, and zinc), several organics (chlordan, DDT, dieldrin, heptachlor epoxide, PAH1, PAH2, PAH3, and TPCB), and fecal coliform bacteria. The priority pollutant scan in 2000 showed detectable levels of copper (0.019 mg/L) and zinc (0.342 mg/L). The scan showed non-detectable levels of all other pollutants covered under the TMDL. In 2006, the priority pollutant scan showed detectable levels of copper (0.006 mg/L) and zinc (0.023 mg/L). The scan again showed non-detectable levels of all other pollutants covered under the TMDL. These concentrations were found to be background concentrations.

The Oxon Run TMDL does not take into consideration this facility's discharge as part of its Waste Load Allocation (WLA). The WLA is allocated entirely to the District of Columbia's municipal separate storm sewer system (DC MS4, or MS4). The discharge from this facility flows to a DC storm drain, which is part of the MS4 system. Thus, the discharge is accounted for in the MS4 allocation. In order to maintain consistency with the Oxon Run TMDL, copper and zinc must meet DC water quality standards (WQS) before discharging into Oxon Run. Therefore, monthly monitoring of both pollutants is now a requirement to ensure that copper does not exceed 12.31 micrograms per liter ($\mu\text{g/l}$) and that zinc does not exceed 133.29 $\mu\text{g/l}$.

Special Condition number 2 entitled "TMDL Development/Implementation" was added to the prior permit to require the permittee to conduct detailed monitoring to determine whether the permittee was discharging in exceedance pollutants associated with the Oxon Run TMDL. This monitoring was completed and the condition has been revised in the Final Permit. The permittee is still required to complete monitoring; however, detailed monitoring for copper and zinc will be required monthly and monitoring for the remaining pollutants as specified in the Oxon Run TMDL and Chesapeake Bay TMDL will occur annually. The revised Special Condition entitled "TMDL Development/Implementation" ensures proper consideration and compliance with any current and/or future TMDL.

TOTAL MAXIMUM DAILY LOADS (TMDLs)

On December 29, 2010, EPA established the Chesapeake Bay TMDL (Bay TMDL) to address nutrient (nitrogen and phosphorus) and sediment (TSS) impairments in the Chesapeake Bay and its tidal tributaries. As part of the Bay TMDL process, the District of Columbia developed a Phase I Watershed Implementation Plan (WIP) describing how the District would achieve its load allocations (LAs) and wasteload allocations (WLAs). The Bay TMDL was informed by and largely incorporated the District's final Phase I WIP. The Bay TMDL determines the maximum amount of nitrogen, phosphorus, and sediment that may be received in those water bodies and still meet applicable water quality standards. The Bay TMDL also allocated the maximum loading of each respective pollutant to certain individual and aggregate WLAs for point sources, and load allocations for nonpoint sources. DC submitted its Final Phase II WIP on March 30, 2012, and is currently under review by EPA.

With regard to this permitted discharge, the Bay TMDL included an aggregate WLA for TSS covering the discharge of TSS from this permittee and eight other non-significant industrial point sources. During the development of the Bay TMDL, EPA determined that there would be no need to require additional TSS reductions from each of the nine non-significant industrial point sources (including this one) addressed in that aggregate WLA. Thus, current Permit limits for each of the nine non-significant dischargers are consistent with the requirements and assumptions of the aggregate WLA for TSS. In the DC WIP, while each non-significant discharger has a different Permit loading for TSS, each permit also has a monthly average maximum effluent limit for TSS

not to exceed 30 mg/l. In order to maintain consistency with the Bay TMDL, the monthly average limit for the Final Permit must continue to require the permittee to not exceed 30 mg/l TSS. EPA understands that the Permittee does not discharge total nitrogen or total phosphorus in amounts that have a reasonable potential to exceed applicable WQS (including applicable TMDLs and associated WLAs). To ensure that the amounts of pollutants discharged continue to remain below the reasonable potential levels, the Permittee will be required to monitor annually for total nitrogen and total phosphorus to ensure neither pollutant is being discharged in its effluent in amounts greater than those reasonable potential levels. If the annual pollutant scan shows the discharge of sufficient amounts total nitrogen or total phosphorus exceed the reasonable potential to exceed applicable WQS, or if any revisions to the Bay TMDL affect current WIP allocations, EPA reserves its authority to modify and/or revoke and reissue the Permit as provided in the Final Permit at Section A, number 13.

On December 15, 2004, EPA approved the District of Columbia's (DC) Oxon Run TMDL for Organics, Metals, and Bacteria. Through this TMDL, two NPDES permitted discharges were identified in the Oxon Run Watershed: DC0000221, (the DC MS4 permit) and DC0000337 (the DC WMATA Mississippi Ave Pumping Station). The Oxon Run TMDL states that the "Washington Metropolitan Area Transit Authority is not required to monitor effluent fecal coliform, metal, or organics concentrations, and is not considered a significant source of these pollutants." DC did not assign an allocation to WMATA and the Oxon Run TMDL states "the wasteload is allocated only to the municipal separate storm sewer systems (MS4s)." WMATA's permitted discharge for DC0000337 was found to flow through the MS4. Thus, a portion of the MS4's allocation for metals should account for WMATA's permitted discharge.

To characterize WMATA's discharge, the previous two permit terms required the permittee to conduct one priority pollutant scan per permit term. This scan found detectable limits of copper and zinc, two metals with WLAs in the Oxon Run TMDL. To maintain consistency with the Oxon Run TMDL and any portion of the MS4's allocation for metals, the permittee must meet DC WQS criteria at the "end of pipe." Current DC WQS (see DC DOE document dated October 1, 2010 entitled "Notice of Final Rulemaking Triennial Review of the District of Columbia's Water Quality Standards") set a criteria of 113.3µg/l for zinc, and 12.3µg/l for copper. The 2006 priority pollutant scan showed zinc levels of 0.023 mg/l (or 23µg/l) and copper levels of 0.006 mg/l (or 6 µg/l). Because there is no reasonable potential for copper or zinc to exceed water quality standards, a "report only" monitoring provision was added to the Effluent Limitations and Monitoring Requirements section of the Final Permit for the two metals. The monitoring is a monthly grab sample that is to be included in the monthly discharge monitoring report (DMR). If copper and zinc are found to exceed WQS, the Final permit provides a provision for the reopening, revision, and reissuance of the Permit to comply with the TMDL and WQS. In addition, and to remain consistent with the Oxon Run TMDL, the permittee is also required to monitor annually for the remaining pollutants named in the TMDL, as well as in the Discharge Description section above.

AUTHORIZED DISCHARGE EFFLUENT LIMITATIONS UNDER THIS PERMIT:

The District of Columbia water quality standards were published as final regulations in the D.C. Register on August 13, 2010 and approved by EPA Region III on December 27, 2010. They classify Oxon Run, the receiving stream for the effluent discharge, for the following designated use goals: primary contact recreation; secondary contact recreation and aesthetic enjoyment; protection and propagation of fish and shellfish, and wildlife; and protection of human health related to the consumption of fish and shellfish. The authorized effluent limitations for the reissued permit have been developed—using the applicable criteria in the WQS and “Best Professional Judgment” – to ensure that the receiving stream will be adequately protected for its current and designated use goals. The District of Columbia WQS can be found on EPA’s website: http://water.epa.gov/scitech/swguidance/standards/wqslibrary/dc_index.cfm

The aforementioned effluent limitations in the initial and previous permits which were issued April 20, 2000 and January 24, 2006, respectively, included a measured flow reporting requirement of two times per month and effluent limits for total suspended solids [30mg/l (milligrams per liter), monthly average; 60mg/l, weekly average with a monitoring frequency of one grab sample per month]; pH (6.0-8.5 standard units with a monitoring frequency of two grab samples per month); and oil and grease (10mg/l, monthly average; 15mg/l, daily maximum with a monitoring frequency of one grab sample per month). Also, as previously described, there was a Special Condition in the initial permit requiring monitoring, analysis, and reporting to EPA Region III on priority pollutants for the further enhancement of the characterization of the effluent being discharged. The previous permit added a second Special Condition which addressed whether or not the permittee’s effluent contributed to any exceedances of any approved TMDL.

The authorized effluent limitations for the Final Permit establish the same effluent limits as the previous permit for each of the pollutants (total suspended solids, pH, oil and grease) of concern as described above in accordance with 40 CFR § 122.44(l) of the NPDES regulations. The Final Permit also requires monthly “report only” monitoring for copper and zinc, as well as annual “report only” monitoring for pollutants as specified in the Oxon Run TMDL and the Bay TMDL. The Special Condition requiring priority pollutant monitoring is still required once at the beginning of the permit term. The Special Condition entitled “Total Maximum Daily Load (TMDL) Development/Implementation” has been revised in the Final Permit. A Special Condition requiring the monitoring for pollutants specified in the Oxon Run TMDL and the Bay TMDL has been added to the Final Permit.

The Special Condition requiring priority pollutant monitoring was put into place to characterize the effluent in order to determine how the discharge would be affected by the Oxon Run TMDL. The TMDL contains a list of heavy metals, including copper and zinc, and organic compounds. After two priority pollutant scans, a discharge of both copper and zinc, among other metals, was present. EPA was recently informed by

WMATA that the soils surrounding the discharge area are acid sulfate soils. Acid sulfate soils are soils that are highly acidic and usually associated with the release of heavy metals into the environment. The Oxon Run TMDL recognizes that metals and organic compounds “may wash off from various sources in urban areas, including rooftops, streets, parking lots, and residential lawns. Loading of metals and organics from urban areas typically occurs during precipitation or high surface runoff events. Additionally, some pollutants, such as PCBs, can enter surface waters via atmospheric deposition.” The presence of acid sulfate soils, coupled with the fact that metals and organic compounds wash off impervious surfaces, indicates that the discharge of such metals as copper and zinc are from naturally occurring or unavoidable instances, and not from the actions that are being permitted. As stated previously, the Special Condition pertaining to TMDL development/implementation has been revised in order to remain consistent with the assumptions and conditions of the approved TMDLs, as well as to make it clear that the permit may be modified, or revoked and reissued, to ensure compliance with EPA-approved TMDLs during the permit term.

Total suspended solids are a major pollutant in the District of Columbia, as noted in the District’s Integrated Report. While construction of the WMATA train stations was completed in February of 2002, a reasonable potential still exists for untreated ground water to contain levels of suspended solids, which could further add to the contamination problem in the District’s storm sewer that receives the effluent discharge prior to entering Oxon Run. Therefore, EPA has retained the effluent limits for total suspended solids (permit application values for total suspended solids have been as high as 24 mg/l) in the Final Permit. These limits are based on “Best Professional Judgment” as equivalent to best practicable technology currently available. See 40 CFR § 125.3.

Values for pH since tunnel construction activities reportedly have ranged from 3.0 to 10.0. The influence of the ground water passing over the concrete surfaces, especially new surfaces, creates a situation of instability for pH values which can last for years until these concrete surfaces are fully cured. Moreover, since the soil surrounding the tracks is acid sulfate soil, it adds to the acidity of the ground water discharge. The pH values of greater than 6.0 and less than 8.5 are based on current DC WQS criteria and are being maintained by EPA Region III in the Final Permit.

As described previously, the oil and grease parameter of 10mg/l based on current DC WQS is being retained in the Final Permit given the mechanical nature of the subway trains traveling through these tunnels and the fact that it is now shown to be present in the discharge at a value of 5.1mg/L.

Previously, the permittee was required to do an annual priority pollutant scan. Since the scan showed detectable amounts of copper and zinc, the permittee is now required to monitor monthly via grab samples for these two pollutants in the Oxon Run TMDL. The requirement is report only. EPA, however, will be monitoring each monthly report to ensure copper and zinc are staying below DC WQS levels. If either pollutant is

found to exceed WQS, the permit may be modified or revoked and reissued to reflect new effluent limitations.

In addition to the priority pollutant scan required at the beginning of the permit term, the permittee is also required to monitor annually for all pollutants in the Chesapeake Bay TMDL and the Oxon Run TMDL. The purpose for monitoring is to ensure compliance with the assumptions and conditions of both TMDLs. If monitoring results for any pollutants show that the facility may be causing violations of either TMDL, the permit may be modified or revoked and reissued to ensure compliance with the assumptions and conditions of the TMDLs. EPA recognizes that some pollutants in the priority pollutant scan and annual pollutant scan are the same. The permittee may use the results from the priority pollutant scan to cover any pollutants that are also covered under the annual pollutant scan for the first reporting period only. The permittee will still be responsible to monitor for any pollutants in the annual pollutant scan that are not covered by the priority pollutant scan.

Section 401 of the CWA (See also 40 CFR §122.44(d)(3) and §124.53(a)) provides that no Federal license or permit, including NPDES permits, to conduct any activity that may result in any discharge into navigable waters shall be granted until the State/Tribe in which the discharge originates certifies that the discharge will comply with the applicable provisions of sections 301, 302, 303, 306, and 307 of the CWA. The section 401 certification process was completed by the District of Columbia Department of the Environment (DDOE) for the Final Permit, and DDOE certified the Final Permit contingent upon a few comments, which have been encompassed in the Final Permit. The first comment DDOE had was, for monthly average and daily average discharges, the units should be consistent in either kg/day or lb/day, but not allow discharges to be recorded in both units. EPA decided to require these limits to be reported in kg/day, so as to be consistent with other reporting requirements of mg/l for daily max. and monthly avg. measurements. The second comment requested EPA to update DDOE's mailing address. EPA has updated the address. The third comment requested EPA to require the permittee to notify DDOE both through oral and written reports with regards to 24-hour reporting. EPA has added this requirement. The fourth comment requested EPA correct the name of the agency where Monitoring of Priority Pollutants reports are mailed to. EPA has corrected this name. EPA has received no 401 certification correspondence with Maryland or Virginia, thus considers the 401 certification waived.

Consistent with Section 7(a)(2) of the Endangered Species Act (ESA), EPA consulted with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), both collectively known as the "Services," during the public comment period. The Services are responsible for developing and maintaining the list of protected species and critical habitat. Once listed as endangered or threatened, a species is afforded the full range of protections available under the ESA, including prohibitions on killing, harming or otherwise taking a species. In certain instances, the Services may establish a critical habitat for a threatened or endangered species as a means to further protect those species. Critical habitat is an area determined to be essential for the

conservation of a species and need not be in an area currently occupied by the species. There are currently three endangered or threatened species found in the District of Columbia. They are the Hay's Spring Amphipod, the Shortnose sturgeon, and the Atlantic sturgeon. The Hay's Spring Amphipod has only been found in the Rock Creek portion of DC, and since the WMATA discharge is to Oxon Run, which is a tributary to the Potomac River, the discharge has no potential effect on the Hay's Spring Amphipod. The Shortnose sturgeon has been found to inhabit the Potomac River. Historical evidence has shown that the Potomac River was, and may be, a spawning river for Shortnose sturgeon. The preferred habitat for spawning is the same for both Atlantic sturgeon and Shortnose sturgeon and these conditions are known to exist in the Potomac River. The habitat at Little Falls (which is on the northwestern border of Maryland and the District) is consistent with the preferred Shortnose sturgeon spawning habitat in other river systems. This habitat includes coarse grain sediment, appropriate flow conditions and fresh water. In addition, Shortnose sturgeon usually spawn at the uppermost point of migration within a river, which in the Potomac is probably Little Falls. However, there is no evidence to suggest that the Atlantic sturgeon currently spawns in the Potomac River.

As noted in Section A.14 of the Permit, there is no evidence at the present time that the discharges covered by this permit are adversely affecting these Federally listed species. Discharges, construction, or any other activity that adversely affects a Federally listed endangered or threatened species are not authorized under the terms and conditions of this permit. EPA received concurrence from NMFS, with the comment that the Hay's Spring Amphipod is under the jurisdiction of the FWS. EPA did not receive feedback from FWS.

Monitoring under this permit will be submitted to NMFS as well as EPA, which will allow further evaluation of potential effects on these Federally listed species. If the data indicates it is appropriate, the Permit may be modified to prevent adverse impacts on habitats of endangered and threatened species.

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 Martin Luther King, Jr. Public Library, which is located at 901 G Street, N.W. in Washington, D.C. An electronic copy of the Draft and Final Permits and Draft and Final Fact Sheets are also available on the EPA Region III website, http://www.epa.gov/reg3wapd/npdes/draft_permits.html. For additional information, please contact Ms. Kaitlyn Bendik, Mail Code 3WP41, NPDES Permits Branch, Office of NPDES Permits and Enforcement, EPA Region III, United States Environmental Protection Agency, 1650 Arch Street, Philadelphia, Pennsylvania 19103-2029.